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2022-2023 CATALOG



NORTH DAKOTA STATE COLLEGE OF SCIENCE

NDSCS.edu

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2022-2023 ACADEMIC CALENDAR

Fall Semester 2022

Aug. 17	Fall Opening Meeting for Faculty & Staff
Aug. 21	NDSCS-Wahpeton New Student Orientation
Aug. 22	NDSCS-Wahpeton New Student Departmental Orientation
Aug. 22	Classes Begin at 4 p.m.
Aug. 23	First Full Day of Classes
Aug. 26	1st 8-weeks Final Day to Add a Class
Aug. 26	1st 8-weeks Final Day to Drop a Class without Transcript Record*
Aug. 31	Full Semester Final Day to Add a Class
Aug. 31	Full Semester Final Day to Drop a Class without Transcript Record*
Sept. 5	Holiday (No Classes/Offices Closed)
Sept. 30	1st 8-weeks Final Day to Drop a Class*
Sept. 30	Homecoming Pep Rally (No Classes 11 a.m.-1 p.m.)
Oct. 4	Assessment Day (No classes 8 a.m.-12 noon)
Oct. 14	1st 8-Week Session Ends
Oct. 17	2nd 8-Week Session Begins
Oct. 19	1st 8-Week Final Grades Must Be Entered by 9 a.m.
Oct. 21	2nd 8-weeks Final Day to Add a Class
Oct. 21	2nd 8-weeks Final Day to Drop a Class without Transcript Record*
Nov. 2	Registration Opens for Spring/Summer Semesters for Currently Enrolled Students
Nov. 2	Advising Day 8 a.m.-4 p.m. (Classes Resume at 4 p.m.)
Nov. 10	Full Semester Final Day to Drop a Class*
Nov. 10	Full Semester Final Day to Withdraw from all Classes
Nov. 11	Holiday (No Classes/Offices Closed)
Nov. 23	Fall Break (No Classes/Offices Open)
Nov. 24	Holiday (No Classes/Offices Closed)
Nov. 25	Fall Break (No Classes/Offices Open)
Nov. 25	2nd 8-weeks Final Day to Drop a Class*
Dec. 12-16	Final Exams
Dec. 21	Final Grades Must Be Entered by 9 a.m.
Dec. 26	Holiday (Offices Closed)

Spring Semester 2023

Jan. 2	Holiday (Offices Closed)
Jan. 9	Classes Begin at 4 p.m.
Jan. 10	First Full Day of Classes
Jan. 13	1st 8-weeks Final Day to Add a Class
Jan. 13	1st 8-weeks Final Day to Drop a Class without Transcript Record*
Jan. 16	Holiday (No Classes/Offices Closed)

Jan. 19	Full Semester Final Day to Add a Class
Jan. 19	Full Semester Final Day to Drop Class without Transcript Record*
Feb. 17	1st 8-weeks Final Day to Drop a Class*
Feb. 20	Holiday (No Classes/Offices Closed)
Mar. 3	1st 8-Week Session Ends
Mar. 6	2nd 8-Week Session Begins
Mar. 8	1st 8-Week Final Grades Must Be Entered by 9 a.m.
Mar. 10	2nd 8-weeks Final Day to Add a Class
Mar. 10	2nd 8-weeks Final Day to Drop a Class without Transcript Record*
Mar. 13-17	Spring Break (No Classes/Offices Open)
April 5	Registration Opens for Fall Semester for Currently Enrolled Students
April 5	Advising Day 8 a.m.-4 p.m. (Classes Resume at 4 p.m.)
April 6	Full Semester Final Day to Drop a Class*
April 6	Full Semester Final Day to Withdraw from all Classes
April 7	Holiday (No Classes/Offices Closed)
April 10	Holiday (No Classes/Offices Open)
April 21	2nd 8-weeks Final Day to Drop a Class*
May 4	Agawasih Day (No Classes 12-7 p.m.)
May 8-12	Final Exams
May 12	Graduation (3 p.m.)
May 15-16	Instructional Departments Assessment Days
May 17	Final Grades Must Be Entered by 9 a.m.
May 29	Holiday (Offices Closed)

Summer Semester 2023

June 6	Classes Begin
June 8	1st 4-weeks Final Day to Add a Class
June 8	1st 4-weeks Final Day to Drop a Class without Transcript Record*
June 12	Full Semester Final Day to Add a Class
June 12	Full Semester Final Day to Drop a Class without Transcript Record*
June 23	1st 4-weeks Final Day to Drop a Class*
June 30	1st 4-week Session Ends
July 3	2nd 4-week Session Begins
July 4	Holiday (No Classes/Offices Closed)
July 6	2nd 4-weeks Final Day to Add a Class
July 6	2nd 4-weeks Final Day to Drop a Class without Transcript Record*
July 14	Full Semester Final Day to Drop a Class*
July 14	Full Semester Final to Withdraw from all Classes
July 21	2nd 4-weeks Final Day to Drop a Class*
July 27-28	Summer Semester Final Exams
July 28	Summer Session Ends
Aug. 2	Final Grades Must Be Entered by 9 a.m.

**This date does not reflect the last day to drop a class for a 100% refund.
For information regarding refund dates, please go to the Refund Schedules tab at www.NDSCS.edu/Refund.*

ABOUT NDSCS

History

For 120 years, NDSCS has provided responsive educational programs and experiences for thousands of students who, upon graduation, fulfill workforce demands. Today, we continue our mission as a comprehensive college encompassing liberal arts transfer programs, career and technical education, and workforce training.

2022 – The North Dakota State Board of Higher Education hires the 10th President, Rod Flanigan, Ph.D.

2021 – NDSCS Alumni Foundation, along with numerous partners and donors, broke ground for the Career Innovation Center (CIC) in South Fargo. This facility will provide Career and Technical Education and Exposure to Cass County K-12 students and encompass NDSCS-Fargo operations. The CIC will help meet workforce demands for the state and provide robust educational opportunities and pathways for students. NDSCS President Dr. John Richman also retired after nearly 50 years associated with the College.

2020 – NDSCS successfully navigated the challenges presented by the COVID-19 pandemic. To minimize the risk and spread of COVID-19, NDSCS shifted all courses to remote delivery following Spring Break through the end of the Spring 2020 semester. The 2020 Commencement Ceremony was postponed to August and shifted outdoors. NDSCS resumed modified in-person courses June 2020 through Spring 2021. Physical modifications were made to 95 classrooms to allow for effective hybrid instruction; procedural modifications, including pass/fail grading and remote work, were implemented to foster students' success and employee flexibility. Men's baseball returned to Athletics for the first time since 1963.

2019 – NDSCS added Clay Target and eSports as club sport options for students.

2018 – The William F. Rothwell Center for Science was dedicated and a \$250,000 endowment was established to support NDSCS Science Curriculum.

2017 – In May, NDSCS acquired nearly 95 acres of farmland north of Wahpeton from the Kosel and Patterson families. Owners Linda Patterson and her mother, Mary Kosel, worked with NDSCS Alumni/Foundation and other College staff to arrange the land usage which will be used for an agricultural land lab. In October, the College completed a \$13 million water and sewer infrastructure project. As part of the project, a new arch erected at the south entrance of campus will be an icon for NDSCS for years to come.

2016 – The Hektner Student Center was dedicated in May. Named after long-time instructor and dean, Vernon Hektner, the Hektner Student Center houses the NDSCS bookstore, mail center, student life offices, information technology services, campus police, and the Flickertail Dining Room.

2015 – In August, the extensive \$6.7 million renovation of Old Main was completed and old architectural elements were combined with new technology.

2013 – In July, the \$9 million renovation of both Forkner and Riley Halls was completed, and in September, the \$10.5 million Bisek Hall diesel expansion project was finalized. We also said goodbye to two historical buildings on campus – Hektner and Birch Halls. In November, the \$6.7 million renovation of Old Main began. The NDSCS Ambassadors were developed, a new student group that serves as a resource for NDSCS and the Wahpeton community.

2012 – In April, a \$10.5 million Bisek Hall diesel building expansion project broke ground, and in May, a \$9 million renovation began on Forkner and Riley Halls.

2010 – In July, a \$5.7 million renovation of Horton Hall was completed. The building, originally constructed in 1927 for \$65,000, is LEED certified.

2009 – Wilbur A. Lunday, an NDSCS alumnus, and his wife Betty, both deceased, donated more than \$10 million to the college. NDSCS launched the first Give Kids a Smile Day and, along with several area dentists, provided \$11,000 in free dental services to 50 qualifying area children. In January, NDSCS announced the journey worker track program that offers college credit for completed federally-approved apprenticeship training.

2008 – NDSCS and West Fargo Public Schools join together to offer the Early College program, which allows 11th and 12th grade students to take college classes and earn credit toward an associate's degree while in high school.

2007 – A \$1.5 million renovation began on the Earl "Skip" Bute Alumni Stadium and Frank Vertin Field.

2005 – NDSCS expanded the Welding Technology program to NDSCS-Fargo.

2002 – The North Dakota State Board of Higher Education officially recognized NDSCS as a Centennial College.

1997 – NDSCS established the Skills and Technology Training Center (STTC) as a regional workforce training center located in Fargo.

1987 – North Dakota State School of Science changed its name to North Dakota State College of Science, and converted from the quarter system to the semester system in 1992 as part of a North Dakota University System initiative.

1922 – The first trade and technical programs were offered, and since that time, NDSCS has become widely accepted by employers from across the United States.

Since 1922, NDSCS has followed the basic principles of the Babcock Plan and the North Dakota Plan. The original plan of four interacting curriculum divisions was the result of a survey conducted in 1921 by Dean Earl J. Babcock of the School of Mines of the University of North Dakota. In 1922, the North Dakota State College of Science was named the central trade and technical institution for the state of North Dakota. Under the North Dakota Plan, all trade-technical training in the state for many years was centralized in this institution — a method which proved very satisfactory in a state with sparse population and where agriculture continues to be the primary industry.

1905 – The Arts and Science Division was the first division to be organized, and the Business Division began operation shortly after.

1903 – NDSCS was provided for in the Constitution of the State of North Dakota and began actual operation, making it one of the oldest public two-year colleges in the United States.

Mission Statement

The North Dakota State College of Science is a comprehensive, associate degree-granting college founded on a tradition of quality and integrity. We deliver learner-focused education through a unique and evolving collegiate experience. Using innovative delivery strategies, NDSCS anticipates and responds to statewide and regional needs by providing access to occupational/technical programs, transfer programs and workforce training.

Vision Statement

To enrich people's lives through responsive lifelong learning in a dynamic educational and technological environment.

Values

The North Dakota State College of Science acts in accordance with a set of shared values that complement the college's vision and mission statement.

The people of NDSCS – students, employees, alumni and friends – hold learning, integrity, flexibility and excellence in the highest regard. These values are intended to foster an environment conducive to lifelong learning and to encourage behaviors that fulfill the college's mission and meet the needs of its students.

As members of the NDSCS community, we are stewards for many constituents – students, parents and citizens. They have entrusted us with their resources and their aspirations, and we respond with personal attention, professional conduct and vibrant enthusiasm for our vocation. Each of us contributes to the success of the college, its students and its alumni. Our shared values embrace our decisions and our daily actions.

Our L.I.F.E. Values

Learning: We engage the campus community in a lifelong learning environment inside and outside the classroom.

Integrity: We work with others and conduct ourselves in a respectful, ethical, honest and trusting manner.

Flexibility: We consider ideas from all sources and adapt to the needs of our patrons.

Excellence: We deliver superior programs and services that distinguish the college from its peers.

Quality Pledge

It is the commitment of the North Dakota State College of Science to provide quality instruction and service, consistent with the highest standards of education.

We will provide precise, prompt and courteous service to our students, to the employers who hire them, to one another and to all we serve.

Program Guarantee

North Dakota State College of Science offers education and training designed to enable students to acquire the entry-level vocational/technical competencies necessary to enter the workforce. NDSCS stands behind the training provided and will guarantee to provide at least six additional credits of retraining under the following conditions:

- Your employer certifies that you lack the target job competencies normally expected of an entry-level employee who has graduated from your vocational/technical program, or
- You have not secured employment within six months following graduation.

To be eligible for retraining, you must have graduated from a technical certificate program, technical diploma program, or associate in science or associate in applied science degree program. In addition, you must have registered for services provided through the NDSCS Student Success and Career Services office and actively pursued employment in your occupational field or a related field. This guarantee does not imply that you will pass any licensing or qualifying examination for a particular occupation. Other guidelines also may apply. For more information on the NDSCS Guaranteed Retraining Policy, contact the Student Success and Career Services office at 1-800-342-4325.

Strategic Plan & Goals

NDSCS employed a developmental and inclusive process to review the mission and vision statements and to establish strategic plan for FY21-23 (ending June 30, 2023). The NDSCS Accreditation and Strategic Planning Team led the process; during the four-phase development process there was a variety of avenues for students, employees, and other stakeholders to share feedback and insight on the formation of the strategic plan. The resulting plan has three primary goals:

1. Improve the comprehensive learning experience.
2. Strategically foster relationships with partners to fulfill the workforce needs of North Dakota and the region.
3. Commitment to the continuous improvement of NDSCS and its employees.

Assessment of Student Learning

Assessment of student academic achievement is an accreditation requirement of the Higher Learning Commission. Student learning outcomes have been established for general education and for each program of study. They reflect what the student should know, think or be able to do at the successful conclusion of the program of study. Data is collected for each outcome and is analyzed by faculty to determine to what extent each outcome is being achieved. The goal is to continuously improve student learning. Assessment data assists in determining the extent to which students are attaining the technical, transfer and general education objectives throughout the curriculum, as well as success in utilizing those skills after graduation. Advisory committees assist departments in keeping their plans of study current by identifying skills students will need to be successfully employed and to stay current in their field. It is the intent of NDSCS that all students will participate in planned assessment activities appropriate to their programs of study.

Land Acknowledgement

NDSCS acknowledges that we occupy the sacred ancestral lands of the First Nations cultures of North Dakota. Without them, we would not have access to our gathering, dialogue, and learning spaces.

Notice of Disclaimer

The North Dakota State College of Science reserves the right to make changes in curriculums, policies, rules and fees whenever such changes are deemed necessary. A special notice from the State Board of Higher Education requires the following announcement be published in all catalogs and bulletins issued by state educational institutions of North Dakota: Catalogs and bulletins of educational institutions are usually prepared by faculty committees or administrative officers for the purpose of furnishing prospective students and other interested persons with information about the institutions that issue the same. Announcements contained in such printed material are subject to change without notice and may not be regarded in the same nature of binding obligations on the institutes and the State.

Institutional Liability — North Dakota State College of Science disclaims liability of any kind for injury or illness of any student as a result of participation in athletics, physical education, field trips, shop or laboratory work, or classroom activities. Every reasonable effort is made to provide safe conditions for the conduct of these activities.

ACCREDITATIONS

NDSCS is accredited through the Higher Learning Commission (HLC) through the Open Pathway which is focused on quality assurance and institutional improvement. The Open Pathway is unique in that its improvement component, the Quality Initiative, affords institutions the opportunity to pursue improvement projects that meet their current needs and aspirations. The Open Pathway follows a ten-year cycle. Higher Learning Commission, 30 N. LaSalle St., Suite 2400, Chicago, IL 60602. Phone: 312-263-0456 or 1-800-621-7440. www.hlcommission.org

NDSCS also holds the following accreditations by program or academic emphasis:

- Auto Body Repair and Refinishing Technology - Automotive Service Excellence (ASE) - PPG Partners in Education™ - I-CAR Professional Development Program – Education Edition (PDP-EE), Collision Repair Education Foundation, 5125 Trillium Blvd., Hoffman Estates, IL 60192, Phone: 888-722-3787
- Automotive Technology - Automotive Service Excellence (ASE) at the National Automotive Technicians Education Foundation, Inc. (NATEF), 1503 Edwards Ferry Rd., NE, Suite 401, Leesburg, VA 20176, Phone: 703-669-6650
- Dental Hygiene and Dental Assisting – Accredited by the Commission on Dental Accreditation of the American Dental Association, 211 East Chicago Ave., Chicago, IL 60611-2678, Phone: 312-440-4653, www.ada.org/en/coda
- Diesel Technology – Automotive Service Excellence (ASE) NATEF Heavy Truck Certification at the National Automotive Technicians Education Foundation, Inc. (NATEF), 1503 Edwards Ferry Rd., NE, Suite 401, Leesburg, VA 20176, Phone: 703-669-6650 and Associated Equipment Distributors, Inc., 650 E. Algonquin Rd., Suite 305, Schaumburg, IL 60173, Phone: 630-574-0650
- Emergency Medical Services (EMS) - Commission on Accreditation of Allied Health Education Programs (CAAHEP), 9355 - 113th St N, #7709 Seminole, FL 33775, Phone: 727-210-2350, www.caahep.org. To contact CoAEMSP: 8301 Lakeview Parkway Suite 111-312, Rowlett, TX 75088, Phone: 214-703-8445, Fax: 214-703-8992, www.coaemsp.org
- Health Information - The Health Information Management accreditor of NDSCS is the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). The College's accreditation for Associate's degree in Health Information Technology has been reaffirmed through 2028. All inquiries about the program's accreditation status should be directed by mail to: CAHIIM, 200 East Randolph Street, Suite 5100, Chicago, IL, 60601; by phone at 312-235-3255; or by email at info@cahiim.org.
- Occupational Therapy Assistant – Accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), of the American Occupational Therapy Association (AOTA), 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929, ACOTE's telephone number, C/O AOTA, is 301-652-AOTA and its Web address is www.acoteonline.org

- Practical Nursing - Accredited by the Accreditation Commission for Education in Nursing (ACEN), 3390 Peachtree Road NE, Suite 1400, Atlanta, GA 30326, Phone: 404-975-5000, www.acenursing.org, and has full approval by the North Dakota Board of Nursing (NDBON), 919 South 7th Street, Suite 504, Bismarck, ND 58504-5881. Phone: 701-328-9777, www.ndbon.org
- Pharmacy Technician - Jointly accredited by American Society of Health System Pharmacists, 4500 East-West Highway, Bethesda, MD 20814, Phone: 866-279-0681, www.ashp.org and Accreditation Council for Pharmacy Education, 190 S. LaSalle Street, Suite 2850, Chicago, IL 60603-3499, Phone: 312-664-3575, Fax: 866-228-2631. info@acpe-accredit.org
- Registered Nursing (ASN and AAS) - Initial accreditation by the Accreditation Commission for Education in Nursing (ACEN), 3390 Peachtree Road NE, Suite 1400, Atlanta, GA 30326, Phone: 404-975-5000, www.acenursing.org, and has full approval by the North Dakota Board of Nursing (NDBON), 919 South 7th Street, Suite 504, Bismarck, ND 58504-5881. Phone: 701-328-9777, www.ndbon.org

ADMISSION INFORMATION

Admission Requirements/Types & Procedures

FIRST YEAR OR FRESHMAN STUDENT

You are a first year student if you have not attended a post-secondary institution since completing high school. Refer to admission procedures for completing your admission/registration requirements.

EARLY ENTRY STUDENT

A student who is still in high school and is pursuing college courses during the summer, or simultaneously with high school, is considered an early entry student. Complete the application form found at www.NDSCS.edu/Apply. Visit with your high school official before beginning this process.

HOME EDUCATED STUDENT

A student who has been home educated must submit: a) a transcript listing classes completed, performance or grade with a key in each class in grades nine through twelve, which must be verified by the parent or other instructor; or b) a state's equivalent of a high school diploma.

TRANSFER STUDENT

You are a transfer student if you have attended one or more postsecondary institutions after high school graduation other than NDSCS. **If you have earned college credit(s) while in high school, you are considered a first year student and are required to send in coursework from ALL colleges.

Refer to admission procedures for completing your admission/registration requirements.

RETURNING STUDENT

You are a returning student if you have previously applied for admission or taken classes at NDSCS. Any returning student who was placed on academic warning, probation or suspension should refer to the Academic Warning, Probation, Suspension and Re-Admission Policy in the *NDSCS Catalog* or online at www.NDSCS.edu/Catalog. Applicants will be contacted by the Enrollment Services office for further instruction. Refer to admission procedures for completing your admission/registration requirements.

NON-DEGREE SEEKING STUDENT

A non-degree student is any student who is not pursuing a degree or vocational program or is wishing to enroll in a limited number of credits (12) at NDSCS. Non-degree students are not eligible to receive financial aid. Refer to Step 1 and 2 of admission procedures.

Ability to Benefit (ATB)

This option allows postsecondary seeking students without a high school diploma or equivalency the option of obtaining a GED or ACCUPLACER testing for entering an eligible career pathway program. Contact Admissions at 701-671-2225 for guidance and/or next steps.

PERMANENT RESIDENT/REFUGEE

Admission requirements for permanent residents and refugees.

1. Refer to admission procedures for completing your admission/registration requirements.
2. Submit a photocopy of I-94, I-551.
3. Copy of English proficiency.

Students whose native language is not English must submit proof of English proficiency in one of the following ways:

- At least two years of study, in good standing, at a U.S. high school or regionally accredited U.S. college/university.
- A U.S. General Education Diploma (GED) administered in English.

- College Composition I and College Composition II, or equivalent courses, with a grade of “A” or “B” from a regionally accredited U.S., postsecondary college and/or university.
- Any of the placement scores on the ACT, SAT and/or ACCUPLACER for English:
 - ACT English sub test of 18 or higher
 - SAT writing of 430 or higher
 - ACCUPLACER WritePlacer of 5 or higher
 - The Test of English as a Foreign Language (TOEFL), with a minimum TOEFL internet-based test score of 70. Request your results at www.toefl.org, NDSCS’s code is 6476.

INTERNATIONAL STUDENTS

Applicants are encouraged to begin the application process well in advance of posted deadlines to ensure all required admission materials arrive in a timely manner. The I-20 immigration form will not be issued until the admission file is complete.

Application deadlines:

- Summer Semester (begins in June) – April 15
- Fall Semester (begins in August) – July 1
- Spring Semester (begins in January) – November 15

1. Complete the application for admission found at www.NDSCS.edu/Apply. Submit \$35 non-refundable application fee.
2. Submit Official High School (Secondary School) Transcript
International high school credentials must be evaluated through an approved evaluation service. The evaluation service is the sole responsibility of the applicant, and it must be performed by Foreign Credential Services of America (FCSA), a member of the National Association of Credential Evaluation Services (NACES) or the Association of International Credential Evaluators (AICE). NDSCS recommends using World Education Services (WES) or SpanTran. Exemptions to this policy may be granted if you have completed an associate, bachelor, or doctoral degree that has been evaluated through an approved evaluation service or from an institution in the United States.
3. Submit Official College or Post-Secondary Transcript(s)
College transcripts from outside the United States must be evaluated through an approved evaluation service. The evaluation service is the sole responsibility of the applicant, and it must be performed by Foreign Credential Services of America (FCSA), a member of the National Association of Credential Evaluation Services (NACES) or the Association of International Credential Evaluators (AICE). NDSCS recommends using World Education Services (WES) or SpanTran. There is no guarantee that the credits will transfer.
4. Submit test scores.
If you are applying for an associate in applied science, diploma or certificate program, you will need to obtain minimum entrance scores in order to meet the program admission requirements for your selected program. Approved exams include the ACT, SAT and ACCUPLACER. Go to www.NDSCS.edu/Requirements for more information on the required scores for your selected program.
5. English proficiency.
Students whose native language is not English must submit proof of English proficiency in accordance with NDUS procedure 402.9 Admissions Procedure - New Applicants with International Coursework.
6. Submit the Financial Responsibility Statement.
Submit the Financial Responsibility Statement providing evidence of financial support for one year of all anticipated educational and living expenses for study in the United States.

Go to www.NDSCS.edu/International-Students to download the Financial Responsibility Statement form.

7. Submit proof of immunization.

Send medical records with proof of two MMR immunizations (measles, mumps and rubella) and proof of meningitis immunization. Go to www.NDSCS.edu/Immunizations for more information.

Questions? Email NDSCS.Admissions@ndscs.edu or call 701-671-2521.

ADMISSION PROCEDURES

Step 1. Complete the application for admission found at www.NDSCS.edu/Apply.

Step 2. Submit \$35 non-refundable application fee.

Step 3. Submit high school and/or college transcripts or GED test scores.

Current high school student:

- Submit an official high school transcript. An in-progress high school transcript is required prior to attending any registration sessions. An official high school transcript with final grades and graduation date is required upon completion of high school.
- High school students currently taking college coursework, including dual credit, PSEO, etc., need to request an official in-progress college transcript(s). Final, official college transcript(s) will be required once all course work has been completed.

Transfer student:

- Submit an official final high school transcript, GED or authorized high school equivalent.
- Submit official, in-progress college transcript(s).
- Submit official, final college transcript(s) after grades/graduation details have been posted from ALL colleges previously attended (include college credits earned while in high school).

Returning student:

- Submit official, final college transcript(s) for ALL colleges if you have attended other institutions after leaving NDSCS and other official documents, if not previously submitted.

NDSCS does not accept faxed or emailed transcripts. To be considered official, all transcripts must arrive at NDSCS directly from the issuing institution. NDSCS reserves the right to verify student's high school completion. If documents appear tampered, altered or unofficial further confirmation or documentation will be requested from issuing institution.

North Dakota State College of Science reviews for all prior schools attended from colleges reporting attendance through the National Student Clearinghouse (NSC). Official transcripts will be required from all students reported on the NSC as well as institutions self-identified on the NDSCS application. If a student has not attended an institution that reports enrollment a letter confirming non-attendance must be obtained.

NDSCS reserves the right to verify student's high school completion. If documents appear tampered, altered or unofficial further confirmation or documentation will be requested from issuing institution.

Step 4. Submit test scores.

If you are applying for an associate in applied science, diploma or certificate program, you will need to obtain minimum entrance scores in order to meet the program admission requirements for your selected program. Approved exams include the ACT, SAT and ACCUPLACER. For more information, including the required scores for your selected program, visit www.NDSCS.edu/Academics.

NOTE: As of February 25, 2021 required submission of test scores are waived through Summer 2023. For more information contact NDSCS Office of Admission.

Step 5. Submit Proof of Immunization.

Submit medical records with proof of two MMR immunizations (measles, mumps and rubella) and proof of meningitis immunization. Go to www.NDSCS.edu/Immunizations for more information.

All official, final transcripts must be submitted before the first day of class. Failure to comply may result in cancelled registration.

Selective & Limited Admission Programs

Admission to a number of academic programs is selective and/or limited. Admission to the College does not guarantee entrance to a specific program. For a complete list of programs and admission criteria visit www.NDSCS.edu/Requirements.

Criminal Background Check Requirements

1. NDSCS applicants are required to respond to the following safety and security questions (NDUS Procedures 511). An affirmative response to any of these questions will not automatically prevent admission, but you will be asked to provide additional information.
 - a) Within the past seven (7) years, have you pled guilty (or no contest) to or otherwise been convicted of a crime involving violence or the threat of violence or of a sex offense. Crimes of violence refer to an offense in which physical force was used, attempted or threatened against the person or property of another. Examples of crimes of violence include, but are not limited to, abuse, arson, assault (including domestic violence), battery, breaking and entering, burglary, criminal mischief or vandalism, harassment, homicide, menacing, reckless endangerment, stalking, terrorizing and unlawful restraint or imprisonment. Sex offenses include, but are not limited to, rape, sexual assault, sexual battery, gross sexual imposition, trafficking, and the possession or distribution of child pornography
 - b) Are you currently required to register as a sex offender in any State?
 - c) Have you been dismissed or suspended from a college or university for disciplinary reasons within the last seven (7) years (“Dismissed for disciplinary reasons” means a permanent separation from an institution due to conduct or behavior. “Suspended for disciplinary reasons” means a sanction imposed for disciplinary reasons that results in a student leaving school for a fixed period but not permanently.)
2. Those students who indicate “yes” to any of the above, will receive a letter stating that they must complete a background check and provide a personal narrative explaining the details of their criminal history.
3. All documentation (criminal history checks and letters or documentations) must be received 15 days prior to the start of the term for the applicant to be considered for admission. If a student does not choose to attend after being admitted, and then wishes to be reconsidered for admission for a following term, the applicant may be required to complete a current background check. If a student is admitted, the documentation will be attached to the admission file, and kept until the file is purged as per the document retention schedule.
4. The Behavioral Intervention Team will determine if a student will be admitted to NDSCS and/or determine if any conditions will be imposed. This team meets regularly, pending need. Participation of over 50 percent of the membership is required to meet quorum, the co-chairs are voting members, and the administrative liaison does not participate in meeting discussions or voting.
5. If the student is admitted, an addendum to the letter of admission will be sent to the student and placed in the student’s admission file. The addendum will note conditions under which the student will be admitted, and the student may be required to meet with the designated College official by a scheduled date prior to starting classes.
6. If the student is not admitted, the student will be informed via letter.
7. A student who is denied admission, or chooses to appeal the conditions under which admission is allowed, may appeal by providing a written statement to the Vice President for Student Affairs within five working days of receiving the team’s decision; the vice president’s decision is final.
8. Copies of the student’s criminal history check and letters or documentation cannot be shared with other non-NDSCS agencies, offices or departments.
9. Many academic programs require various types of criminal background checks. Prospective students are strongly encouraged to discuss these with the NDSCS Admissions office for further information and guidance.

English & Mathematics Course Placement

Placement of students in courses that most closely match their abilities results in a greater likelihood that these students will be successful in pursuing and completing their programs. Following North Dakota University System Policy and Procedure 402.1.2, students are placed into appropriate English and Math courses based on qualifying exam scores. While ACT and SAT scores are not required for admission purposes, they can still be used for placement purposes. If a student does not have ACT, SAT, or NDUS qualifying exam scores, they will be encouraged to take the ACCUPLACER exam. If a student has multiple scores, the highest score will be used for placement.

Financial Obligation Agreement

Prior to registering each semester, students will need to complete a Financial Obligation Agreement (FOA) through CampusConnection. By completing the FOA, the student acknowledges that they are aware of the financial responsibilities associated with enrolling for classes at the institution(s) they will be registering at. For more information, go to www.NDSCS.edu/CC-Help or contact the Business Affairs office.

Full-time or Part-time Status

A full-time student is one who enrolls for 12 or more semester credits during fall or spring term. The normal load for full-time students is 12 to 18 semester credits, depending on the program, not including activity credit. Students must have special permission to enroll in excess of 20 credit hours except where more than 20 hours are required in a specific curriculum. A student desiring to have 12 or more semester credits recorded in a given semester will be considered a full-time student. A full-time student cannot, by taking examinations for credit, cause a reduction of status to a part-time student.

- A part-time student is one who enrolls for less than 12 semester credits during fall or spring term.
- A full-time student for summer term is one who enrolls in six or more semester credits. Since the summer is the equivalent of half a regular semester, a reasonable student load is no more than nine semester credits.

Academic Advisement

Upon enrollment, each student at NDSCS is assigned an academic advisor in the student's instructional area.

The primary purposes of the academic advising program are to:

- Assist students in the development of meaningful education and career plans, which are compatible with their life goals;
- Help students accept responsibility for their own education;
- Aid students' professional development by providing guidance in curricular and professional choices; and
- Provide accurate information about NDSCS policies, procedures, resources and programs.

An academic requirements report is available in your CampusConnection – Degree Progress/Graduation to assist you in meeting your program requirements.

The ultimate responsibility for making informed decisions about life goals and educational plans rests with the individual student. An academic advisor assists by helping to identify and assess alternatives and consequences of decisions.

STUDENT RESPONSIBILITIES

- Clarify personal values, interests, abilities and career goals. For assistance in the process of career exploration and planning, students should schedule an appointment with a division academic counselor.
- Become knowledgeable and adhere to NDSCS policies, procedures and curriculum requirements.
- Make an appointment and meet with the academic advisor during each registration period for schedule planning purposes and at other times as needed or required by college policy.
- Prepare for advising sessions and bring appropriate resources and materials.
- Follow through on actions identified during each advising session.

- Notify academic advisor and course instructors of difficulties in completing course work and seek their assistance in resolving issues.
- Be diligent in attending class and meeting class objectives and assignments.
- If special academic accommodations are needed due to a documented disability, students must inform their advisors and course instructors in order to receive assistance. To receive assistance, students must document their disability with the Accessibility Support office located in Old Main and request assistance. Students who have a disability are strongly encouraged to contact the Accessibility Support office to inquire about available services.
- Accept final responsibility for all decisions.

ADVISOR RESPONSIBILITIES

Although students have the primary responsibility for planning their programs, an academic advisor's responsibilities include:

- Helping students define education and career goals;
- Providing accurate information about NDSCS policies, resources and programs;
- Helping students select courses for degree requirements;
- Assisting students who are academically at risk;
- Offering advice;
- Encouraging student involvement;
- Making referrals to campus support services; and
- Maintaining confidentiality standards.

Together, the student and advisor can make well-informed decisions to ensure a student's success at NDSCS.

TUITION & FEES

NDSCS is on the semester system. This means the student will pay major expenses just after the start of each semester – September, January and June.

2022-2023 Tuition & Fees

STUDENTS PAY TUITION & PER CREDIT FEES AT THE FOLLOWING RATES:

RESIDENCY ¹	TUITION RATE
North Dakota Resident	\$156.11 per credit
Minnesota Reciprocity	\$174.84 per credit
U.S. Resident, Manitoba & Saskatchewan	\$187.33 per credit
International	\$273.19 per credit
Early Entry - Subsidized	\$83.89 per credit
Early Entry - Unsubsidized	\$148.42 per credit

¹ Residencies:

- ND Resident - students that have graduated from a ND high school, or have been a legal resident of ND for the 12 months prior to the first term of enrollment, or other approved groups as outlined in ND Century Code 15-10-19.1.
- MN Reciprocity - students that have graduated from a MN high school within the 12 month period prior to the first semester of enrollment at NDSCS, or have submitted the MN Reciprocity Application and have been approved.
- U.S. Resident - students that are U.S. citizens and have not been approved for a ND Resident or MN Reciprocity rate; students from Manitoba and Saskatchewan.
- International - students that are citizens of another country (excluding the Canadian provinces of Manitoba and Saskatchewan) and have not been approved for a ND Resident, MN Reciprocity or U.S. Resident rate.
- Early Entry - students enrolled in dual-credit classes between NDSCS and their High School; how and where the classes are taught will determine a subsidized or unsubsidized rate.

PER-CREDIT FEES

Based on class location; help to support such things as classroom technology, job placement, on-campus student activities, University System software, etc. **Mandatory Fees cap at 12 credits per semester. Online Access Fee does not cap.**

CLASS LOCATION	FEE
Wahpeton Mandatory Fees ²	\$36.85 per credit
Fargo Mandatory Fees ²	\$24.61 per credit
Online Mandatory Fees ²	\$17.33 per credit
Online Access Fee	\$38.00 per credit (does not cap)
Early Entry Mandatory Fees ²	\$5.54 per credit

² Mandatory Fees:

- Wahpeton Classes - Student Activity \$19.52, ConnectND \$5.50, Technology \$9.79, Assessment \$1.00, Placement \$1.00, NDSA \$.04
- Fargo Classes - Student Activity \$7.28, ConnectND \$5.50, Technology \$9.79, Assessment \$1.00, Placement \$1.00, NDSA \$.04
- Online Classes - ConnectND \$5.50, Technology \$9.79, Assessment \$1.00, Placement \$1.00, NDSA \$.04
- Early Entry Fees: ConnectND \$5.50, NDSA \$.04

Instructional Fees

Instructional Fees help to fund the unique needs tied to the classes/subjects a student is enrolled in. Based on the prefixes for each class, Instructional Fees are charged per-credit at the following rates:

CLASS PREFIX	FEE CODE	INSTRUCTIONAL FEE
ASC, CJ, COMM, ECON, ENGL, FYE, HIST, HUM, MATH, MUSC, NUTR, PHIL, POLS, PSYC, RELS, SOC, SWK, THEA	#1	\$12/credit
BIOL, CHEM, HPER, MICR, PHYS	#2	\$17/credit
ARCT, BCT, CAD, CMT, CT, UAS	#3	\$10/credit
AGEC, AGRI, ANSC, PLSC, SOIL	#4	\$11/credit
ABOD, AUTO, CIH, DCAT, DTEC, JDAT, KMTS, PST, TECH	#5	\$15/credit
ACCT, BADM, BOTE, BUSN, CIS, CSCI, CULA	#6	\$19/credit
ECAL, ELEC, MSYS, PLMB, REFG	#7	\$29/credit
AST, ENGR, MATL, MFGT, RAMT, WELD	#8	\$33/credit
DAST, DHYG, HIT, OTA, PRMT	#9	\$40/credit
EMS, NURS, PHRM	#10	\$95/credit

Out-of-state Discount for Living on Campus

NDSCS offers out-of-state students a substantial discount on their tuition when they live on campus and subscribe to a 160 Dining Plan or larger from Dining Services. Under this plan, students from other states and countries pay the same tuition rate as North Dakota residents.

For more information about the out-of-state tuition discount, contact the Business Affairs office.

Laptop Computers

NDSCS requires notebook computers in some of the academic programs. The costs vary from one program to another. For financial aid purposes, an allowance of \$2,100 is budgeted for the first year in a program that requires a computer.

Application & Other Special Fees

In addition to the regular costs described, the following fees are assessed when and as they apply:

APPLICATION FEE: \$35

When an applicant files an application to enroll at NDSCS, it must be accompanied by \$35, a non-refundable fee.

REGISTRATION/ORIENTATION FEE: \$48

AUDITING FEE (PER SEMESTER HOUR):

50 percent of the tuition rate, plus applicable fees.

CREDIT BY CHALLENGE EXAM FEE:

50 percent of the tuition rate, additional fee will apply for a challenged online class

PARKING FEE: \$74 PER YEAR**Residency for Tuition Purposes**

1. NDCC Section 15-10-19.1 governs determination of residency for tuition purposes. Pursuant to section 15-10-19.1, a resident student for tuition purposes means:
 - a) I am a dependent child whose parent, custodial parent, or guardian has been a legal resident of North Dakota for 12 months immediately prior to the beginning of the academic term or resides in the state with the intent to establish residency in the state for a period of years within the last 12 months immediately prior to the beginning of the academic term.
 - b) I am 18 years of age or older and have been a legal resident of North Dakota after reaching the age of 18 for 12 months immediately prior to the beginning of the academic term.
 - c) I graduated from a North Dakota high school.
 - d) I am a full-time active duty member of the armed forces, a member of a North Dakota National Guard unit, a member of the armed forces reserve component stationed in North Dakota, or a veteran as defined in NDCC Section 37-01-40.
 - e) I am a spouse or a dependent of a full-time active duty member of the armed forces, a member of a North Dakota National Guard unit, or a member of the armed forces reserve component stationed in North Dakota.
 - f) I am a spouse or dependent of a veteran as defined in NDCC Section 37-01-40 who is eligible to transfer entitlement under the Post 9-11 Veterans Education Assistance Act of 2008.
 - g) I am a benefited employee of the North Dakota University System, or the spouse or dependent thereof.
 - h) I am married to a person who is a resident for tuition purposes.
 - i) I was a legal resident of this state for at least three consecutive years within six years prior to the beginning of the academic term. (NOTE: Select this option only if you do not qualify under one of the other scenarios.)
 - j) I am a child, spouse, widow, or widower of a veteran as defined in NDCC Section 37-01-40, who was killed in action or died from wounds or other service-connected causes, was totally disabled as a result of service-connected cause, died from service-connected disabilities, was a prisoner of war, or was declared missing in action.
2. Definitions.
 - a) "Dependent" means only a person claimed as a dependent on the most recent federal tax return.
 - b) "Member of the armed forces" means only full-time active duty members of the armed forces, and not National Guard or reserve members.
 - c) "Spouse" means both parties to a marriage recognized by the state of North Dakota including those subject to an order of legal separation, but not divorced persons.
3. NDCC Section 54-01-26 governs determination of legal residency. Legal residence must be based on an actual physical residence in North Dakota plus an intent to consider this state as a home and legal residence for a substantial period of time. Physical residence in the state for only the special or temporary purpose of attending an institution of higher education, without any assumption of the general responsibilities of legal residency, does not qualify one for legal residency. Nevertheless, a student attending a North Dakota institution of higher education is not precluded from proving legal residency simply because that is the student's primary or exclusive pursuit for a period of time. It is not necessary to show gainful employment or an off-campus residency to prove legal residency, although they may be helpful; what is more important is a showing that some of the significant responsibilities or rights of legal residency enumerated in subsection 4 have been assumed or exercised, or even more importantly, that they have not been countered during a period of legal residency claimed in North Dakota by express acts indicating a legal residency in another state. Generally, because making false statements in a residency application is a crime, an applicant's signature is sufficient guarantee that information in the application is accurate. However, university system employees may, at their discretion, require additional documentation.

4. Legal residence in the State of North Dakota includes, but is not necessarily limited to the following responsibilities and rights:
 - a) To vote in general or special elections in the State after 30 days of residence in the precinct (and assuming U.S. citizenship). See NDCC Section 16-01-03;
 - b) To obtain a North Dakota driver's license before operating any motor vehicle in this State after more than 60 days of residency. See NDCC Section 39-06-02;
 - c) To obtain a North Dakota license for any motor vehicle owned or operated after beginning residency in this State. See NDCC Section 39-04-18;
 - d) To file a North Dakota resident's income tax return with the State Tax Department reporting any income derived from within this State. See NDCC Sections 57-38-01-(10) and 57-38-31;
 - e) To obtain a North Dakota resident game or fishing license after 6 months of residency in the State. See NDCC Sections 20.1-01-02(4) and 20.1-03-05.
5. Given the academic tradition of recess or vacation periods for holidays, between terms and during the summer, a student's visits to other states during these periods are not indicative of a lack of legal residency in North Dakota; in fact, NDCC Section 54-01-26 expressly allows absences for "special or temporary purposes." A student's return from North Dakota to a former state of residence for a period of several months (such as an entire summer), however, when combined with the abandonment of a place of residency in this State indicates abandonment of legal residency in North Dakota. Proof of either the retention of a place of residence in North Dakota during the absence (e.g., by rent receipts), or of a special or temporary purpose for the absence, is required in the event of such a prolonged absence. For example, participation in an internship experience or an exchange program in a state of origin that was an acceptable part of the student's academic program at a North Dakota institution of higher education is considered a special or temporary purpose.
6. International Students.
 - a) To qualify as a North Dakota resident, international students who are not refugees must have an Alien Registration Receipt Card (Green Card) proving permanent residency or immigrant status and must meet all other North Dakota residency requirements for tuition purposes.
 - b) Refugees holding I-94 visas bearing endorsement by the Immigration and Naturalization Service and showing they have been paroled indefinitely, or have been granted indefinite voluntary departure or conditional entry, shall be treated as residents of the United States when applying for North Dakota residency for tuition purposes. In all other respects they must meet the requirements of NDCC Section 15-10-19.1. Time spent in North Dakota prior to being granted I-94 status shall not be counted towards the one year requirement for residency status for in state tuition.

Non-Resident Students Seeking Resident Status

Non-resident students seeking to declare residence for tuition fee purposes must complete the Application for ND Resident Student Status and provide the Enrollment Services office with supporting documentation.

Students must apply for residency change within 30 days of the first class of the semester. If student applies for residency after the first 30 days of the semester and before the 60th day of the semester, a student can petition to have residency reviewed by notifying the director of admissions. After the 60th day of the semester, no reviews/appeals will be considered.

Reciprocity for Minnesota Residents

Action by the Minnesota and North Dakota legislatures allows residents of either state to attend state-supported institutions of higher education and have most of the non-resident tuition waived. Approval by the authorized agency of the student's home state is required. Minnesota residents may obtain the Application for Reciprocity form by accessing the website www.ohe.state.mn.us. Students can print an approved letter and retain it for their records.

Reciprocity is granted to a student for a one-year period ending each July and is automatically granted for the remaining years unless the student withdraws from college. In that case, the student would have to re-apply.

NOTE: Students who have graduated from a Minnesota high school within a 12-month period prior to the first term of enrollment are not required to complete a reciprocity application.

Payment Due Dates

Students incur new costs for each semester they enroll in at NDSCS. The due date for payment is the 12th day of each semester (September, January, June). All charges related to tuition, fees, Bookstore, housing, dining plans, etc. are due in full by each semester's due date. These dates can be found at www.NDSCS.edu/Payment.

The student's current balance is available 24 hours a day by going to www.NDSCS.edu/CampusConnection. All billing notifications are sent electronically to the student's NDSCS email address at the beginning of each month. Since students can make changes that affect their balance up to and after the 12th day of the semester, electronic statement notifications will not be sent again on the semester's due date; instead, students should access their up-to-date balance at www.NDSCS.edu/CampusConnection.

Registration may be cancelled if payment is not received by the 12th semester day unless signed arrangements have previously been made with the Business Affairs office. All financial aid files must be complete and accepted prior to the 12th semester day in order for the funds to be considered towards the student's balance when determining the cancellation of their registration. Students will not be allowed to enroll in subsequent semesters and transcripts will not be released until all financial obligations to the college have been paid in full.

Outstanding Bills

If the student does not pay in full by the semester due dates, a late fee may be assessed for each month that the charges are past due (per section 830.1 of the SBHE Policy manual).

If acceptable arrangements are not made with the Business Affairs office regarding an outstanding bill, the account may eventually be forwarded to a collection agency. Costs incurred in the collection process will be the responsibility of the student. The unsatisfied obligation may also be reported to a credit bureau.

For additional information go to www.NDSCS.edu/Payment.

Refunding of Tuition & Fees

(per SBHE Policy 830.2-Refund Policy)

FINANCIAL IMPACTS OF DROPPING OR WITHDRAWING

NDSCS is required to follow the ND State Board of Higher Education Policy and Procedure 830.2 regarding class drops and/or withdrawals from college.

- Refund eligibility is based on the date on which the drop/withdrawal is effective. See the NDSCS Drop/Withdrawal/Refund Schedule found at www.NDSCS.edu/Refund.
- Any cost adjustments to a student's original charges will first be applied to the semester's outstanding NDSCS balance before a refund is issued to the student (if applicable).
- A class that is dropped prior to the completion of 9 percent of the class session will receive a 100 percent refund of tuition and fees for the number of credits related to the dropped class. After 9 percent of the class session, no refund or tuition and fees will be received.

Financial Aid Recipients - All or a portion of financial aid may be returned to the funding source, based on the remaining number of credits for the semester and/or the date of withdrawal. This return of funds will be charged to the student's NDSCS account, which may result in a balance owed to NDSCS. The balance will be the student's responsibility to pay. Students who withdraw may be ineligible for federal student aid at NDSCS in the future.

Veterans Benefits & Transition Act of 2018 Compliance Policy

(per United States Code section 3679 of title 38)

In compliance with the Veterans Benefits and Transition Act of 2018, section 3679 of title 38, NDSCS will permit any covered individual to attend or participate in the course of education during the period beginning on the date on which the individual provides to the educational institution a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 (a "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' (VA) website – eBenefits, or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

1. The date on which payment from VA is made to the institution.
2. 90 days after the date the institution certified tuition and fees following the receipt of the Certificate of Eligibility (COE).

NOTE: A covered individual is any individual who is entitled to educational assistance under chapter 31, Vocational Rehabilitation and Employment, or chapter 33, Post-9/11 GI Bill™ benefits.

NDSCS will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement funding from VA under chapter 31 or 33.

NDSCS requires payment for the amount that is the difference between the amount of the student's financial obligation and the amount of the VA education benefit disbursement. If NDSCS has not received the VA education benefit disbursement prior to the start of the subsequent semester, enrollment may be delayed until payment is received.

FINANCIAL AID

NDSCS is a state-supported college. This state support covers a portion of all instructional costs to the student and is the largest form of financial support. To help students pay their costs for tuition and fees, room, board, books and supplies, students and/or parents receive financial aid. Approximately 94 percent of NDSCS students receive some type of financial aid. Four different types of financial aid are offered: (1) grants, (2) loans, (3) employment, and (4) scholarships.

Students attending NDSCS must apply for admission to be considered for financial aid. All aid applicants are expected to submit the Free Application for Federal Student Assistance (FAFSA). To be considered for the maximum number of financial aid sources, the FAFSA should be submitted by April 1 to meet the priority deadline date of April 15. Students are encouraged to complete the FAFSA online at www.studentaid.gov. Once application is made, please allow 6-8 weeks for processing. Official financial aid awards are emailed to students in June.

More information, policies and applications on financial aid can be found under the Paying for College section at www.NDSCS.edu.

2022-2023 Estimated Average Annual Budget

These amounts are estimates used for financial aid budgets and are based on 2022-2023 anticipated costs. The amounts are estimates and are subject to change. Actual expenses will vary depending on student program, credits, and living arrangements. If you have unusual costs, please contact the Financial Aid Office at 1-800-342-4325.

The average annual amount for fees is \$884 for all states (excluding campus-approved fees). The remainder is tuition for an average of 16 credits per semester.

ON-CAMPUS WITH MEAL PLAN

Residents of all states and countries will be charged in-state tuition if living on-campus with meal plan of 225 meals or greater.

RESIDENCY	TUITION/FEES*	ROOM/BOARD**	BOOKS/SUPPLIES	PERSONAL***	TOTAL
All States/Countries	\$5,880	\$6,870	\$1,000	\$3,400	\$17,150

OFF-CAMPUS OR ON-CAMPUS WITHOUT MEAL PLAN

RESIDENCY	NORTH DAKOTA	MINNESOTA WITH RECIPROCIITY	U.S. RESIDENT, MANITOBA & SASKATCHEWAN ¹	INTERNATIONAL ²
Tuition/Fees*	\$5,880	\$6,479	\$6,879	\$9,626
Room/Board**	\$6,870	\$6,870	\$6,870	\$6,870
Books/Supplies	\$1,000	\$1,000	\$1,000	\$1,000
Personal***	\$3,400	\$3,401	\$3,401	\$3,404
TOTAL	\$17,150	\$17,750	\$18,150	\$20,900

AT HOME (LIVING WITH PARENTS)

RESIDENCY	NORTH DAKOTA	MINNESOTA WITH RECIPROCITY	U.S. RESIDENT, MANITOBA & SASKATCHEWAN ¹
Tuition/Fees*	\$5,880	\$6,479	\$6,879
Room/Board	\$3,435	\$3,435	\$3,435
Books/Supplies	\$1,000	\$1,000	\$1,000
Personal***	\$3,400	\$3,401	\$3,401
TOTAL	\$13,715	\$14,315	\$14,715

¹ U.S. Resident: U.S. citizens or citizens of the Canadian provinces of Manitoba and Saskatchewan

² International: Citizens of another country excluding Canadian provinces of Manitoba and Saskatchewan

**Room/board amount is the total of a double room (\$3,186) and a 225 meal plan (\$3,684). All rates are for two semesters.

*****PERSONAL EXPENSES**

Medical/Dental	(\$84/Mo.) \$756
Clothing	(\$60/Mo.) \$540
Toiletries	(\$45/Mo.) \$405
Entertainment/Misc.	(\$55/Mo.) \$501
Transportation	(\$127/Mo.) \$1,150
Loan Fees	\$54

Additional Costs by Program

Students in a number of academic programs should plan for additional expenses as part of their education. These added expenses include professional-quality tools and equipment such as laptop computers, required supplies such as uniforms and special books. For more information about specific program costs, visit www.NDSCS.edu/Paying-for-College.

Students enrolled in the following programs should add the corresponding amounts to their estimated expenses. The (1) indicates the first year of a program, and a (2) indicates the second year.

Agriculture (1)	\$1,718	Construction Management Technology (1)	\$2,672
Agriculture (2)	\$358	Construction Management Technology (2)	\$404
Architectural Modeling & Design Technology (1)	\$2,644	Culinary Arts (1)	\$1,142
Architectural Modeling & Design Technology (2)	\$382	Culinary Arts (2)	\$726
Auto Body Repair & Refinishing Technology (1)	\$6,970	Dental Assisting (1)	\$4,634
Auto Body Repair & Refinishing Technology (2)	\$1,000	Dental Hygiene (1)	\$7,466
Automotive Technology (1)	\$11,472	Dental Hygiene (2)	\$4,706
Automotive Technology (2)	\$1,060	Diesel Technology (1)	\$10,340
Autonomous System Technician	\$1,608	Diesel Technology (2)	\$1,004
Building Construction (1)	\$3,466	Diesel Technology - Case IH (1)	\$10,424
Building Construction (2)	\$388	Diesel Technology - Case IH (2)	\$1,076
Business (1)	\$1,756	Diesel Technology - Komatsu (1)	\$10,374
Business (2)	\$562	Diesel Technology - Komatsu (2)	\$1,046
Caterpillar Dealer Service Technician (1)	\$10,360	Electrical Technology (1)	\$2,990
Caterpillar Dealer Service Technician (2)	\$1,090	Electrical Technology (2)	\$964

EMS - Paramedic (EMT) (1)	\$1,364	Occupational Therapy Assistant (2)	\$1,200
EMS - Paramedic (EMT) (2)	\$4,160	Pathway - At Home	\$4,270
EMS - Paramedic (Certificate) (1)	\$4,514	Pathway - On Campus	\$6,010
Emergency Medical Technician (Certificate)	\$4,160	Pharmacy Technician (1)	\$472
Health Information Technician (1)	\$1,072	Pharmacy Technician (2)	\$1,424
Health Information Technician (2)	\$910	Pharmacy Technician (Certificate)	\$1,592
Health Information Technician - Medical Coding	\$1,132	Plumbing	\$1,842
HVAC/R (1)	\$5,844	Powersports Technology (1)	\$8,808
HVAC/R (2)	\$1,110	Powersports Technology (2)	\$1,038
Information & Communication Technology (1)	\$3,122	Practical Nursing (1)	\$2,362
Information & Communication Technology (2)	\$570	Practical Nursing (2)	\$4,554
John Deere Technology (1)	\$10,316	Precision Machining Technology (1)	\$5,948
John Deere Technology (2)	\$962	Precision Machining Technology (2)	\$900
Land Surveying & Civil Engineering Technology (1)	\$2,682	Registered Nursing (AAS) (1)	\$2,344
Land Surveying & Civil Engineering Technology (2)	\$816	Registered Nursing (AAS) (2)	\$5,024
Liberal Arts (1)	\$398	Registered Nursing (ASN) (1)	\$3,370
Liberal Arts (2)	\$434	Robotics Automation & Mechatronics Technology (1)	\$2,652
Meat Processing	\$1,562	Robotics Automation & Mechatronics Technology (2)	\$908
Mechanical Systems (1)	\$884	Unmanned Aircraft Systems	\$1,336
Mechanical Systems (2)	\$760	Welding Technology (1)	\$4,240
Occupational Therapy Assistant (1)	\$1,046	Welding Technology (2)	\$976

For a complete list of tools and supplies, contact the Bookstore. Estimates for laptop computer leases are based on rates from a vendor. Students retain the option of buying any books, tools and supplies — including laptop computers — from vendors other than the Bookstore or those recommended by NDSCS.

Dropping Out of College & Repaying Financial Aid

NDSCS RETURN OF TITLE IV FUNDS POLICY

Federal Financial Aid (Title IV Funds) are awarded to students under the assumption that the student will attend school for the entire period (semester) for which aid was awarded. Students who wish to withdraw from all courses must contact an Academic Counselor to begin the withdrawal process. Following is an overview of the communication between offices and the overall process. *GEN-04-03*

Procedure for Term Withdrawals

1. Student wishes to withdraw to zero credits for the semester. (Term)
2. Student contacts an Academic Counselor (Student Success Division) in person, by phone, or e-mail.
3. The Academic Counselor and student will complete a Term Withdrawal form.
4. If the student is on campus, they will bring the Term Withdrawal form to all offices affected by the withdrawal for signatures.
 - a) Academic Counselor
 - b) Financial Aid
 - c) Business Affairs
 - d) Department Chair
 - e) Library
 - f) Bookstore
 - g) Mailroom
 - h) Residential Life

5. If the student is off campus the Academic Counselor will take the intent to withdraw information via phone or e-mail and proceed to complete the process.
6. The completed form will be returned to the Academic Counselor or the Student Success office.
7. The Student Success office sends a notification e-mail to all parties affected including instructors.
8. An updated spreadsheet is e-mailed out weekly to all applicable offices of all Term Withdrawals for the semester.

Policies for Term Withdrawals

1. A Term Withdrawal is processed only when a student withdraws from all classes to zero credits.
2. If a student has completed at least one class within the payment period or period of enrollment but drops other classes a change of enrollment status is processed NOT a term withdrawal. *GEN-00-24*
3. The official withdrawal date used is the first communication by the student to the Academic Counselor communicating their intent to withdraw to zero credits for the term.
4. Administrative withdrawals are determined by our Academic Counselors based on information from departments and distance learning staff. The date is determined from last date of educational activity.
5. Federal Title IV funds are returned when it is determined that the student has not earned 60% of funds disbursed and does not qualify for an exemption.
6. Exceptions to the 60% would be Graduation, Half-time enrollment, 49% of Payment Period for those programs offered in modules.
 - a) Withdrawal exemption for graduates/completers
 - A student who completes all the requirements for graduation from his or her program before completing the days or hours in the period that he or she was scheduled to complete is not considered to have withdrawn.
 - This exemption applies to all types of programs (including those with or without modules).
 - b) Withdrawal exemptions for programs offered in modules
 - A student is not considered to have withdrawn if the student successfully completes one module that includes 49 percent or more of the number of days in the payment period, excluding scheduled breaks of five or more consecutive days and all days between modules
 - A student is not considered to have withdrawn if the student successfully completes a combination of modules that when combined contain 49 percent or more of the number of days in the payment period, excluding scheduled breaks of five or more consecutive days and all days between modules
 - A student is not considered to have withdrawn if the student successfully completes coursework equal to or greater than the coursework required for the institution's definition of a half-time student under 34 CFR 668.2(b) for the payment period. NDSCS a successful completion would be an A, B, C, D or S.

Procedure for Calculating

1. Upon notification of a student's official withdrawal the financial aid office would perform the calculation of Return of Funds when student does not qualify for an R2T4 exemption.
 - a) The withdrawal date used for calculations will be the date that an Academic Counselor at NDSCS was first notified by the student of their intent to withdraw. The intent to withdraw could take place in person, in writing, or by phone
2. The following formula is used:
 - a) The percent earned is equal to the number of calendar days completed up to the withdrawal date, divided by the total calendar days in the payment period. (Less scheduled breaks that are at least 5 days long.)
 - b) The percent unearned is equal to 100% minus the percent earned.
 - c) Determine the amount of a post-withdrawal disbursement by subtracting disbursed aid from earned aid.
3. This is an automated process using PeopleSoft software.
4. Manual spot check calculations are done using the return of funds worksheet provided by the Department of Education.

Policies for Funds Returned

1. If it is determined that the student has attended to the 60% point of the payment period or period of enrollment the student has earned 100% of the Title IV funds they were scheduled to receive.
2. If it is determined that the student has not attended to the 60% point of the payment period or period of enrollment Title IV must be returned if received.
3. Order of return for unearned funds:
 - a) Loans
 - Unsubsidized Federal Direct Stafford Loans
 - Subsidized Federal Direct Stafford Loans
 - Federal Direct PLUS received on behalf of the student
 - b) Remaining Funds – If unearned funds remain to be returned after repayment of all outstanding loan amounts, the remaining funds are to be returned in the following order:
 - Federal Pell Grants
 - Iraq and Afghanistan Service Grants
 - FSEOG
4. Responsibility for repayment of Title IV funds will be shared by NDSCS and the student based on calculations from the R2T4 worksheet.
 - a) The school must return the lesser of the amount of Title IV funds that the student does not earn (box K) or the amount of institutional charges that the student incurred for the payment period multiplied by the percentage of funds that was not earned (box N)
 - b) The student is responsible for unearned Title IV aid that the school is not required to return. The unearned aid due from the student (Box Q) is determined by subtracting the amount returned by the school (Box O) from the total unearned (Box K) (Note: a student is not responsible for returning funds to any program to which the student owes \$50 or less)
 - Repayment of student loans that remain outstanding (Box R) consist of the loans disbursed to the student (Box B) minus any loans the school repaid (Box P). These outstanding loans are repaid by the student according to the terms of the student's promissory note.
 - The student must repay Title IV Grant Funds the amount by which the original overpayment amount exceeds 50% of the total grant funds disbursed to or that could have been disbursed to the student for the payment period.
 - Within 30 days of determining that a student must repay Grant Funds the student will be notified
5. NDSCS must return the amount of title IV funds for which it is responsible no later than 45 days after the withdrawal date as determined by the institution.
6. If a student is determined to have a credit balance after Title IV funds are returned, a new 14-day deadline begins on the date the school performs the return calculation for the release of those funds to the student.
7. Federal Work-Study funds paid to students will not be included in the calculation of earned/unearned Title IV aid.
8. A letter is sent to the student notifying them of the Return Title IV Funds.
9. The student is placed on Federal Financial Aid Disqualification.

Policies for Post Withdrawal

1. Any undisbursed aid for the period for which the R2T4 calculation is performed is counted as aid that could have been disbursed if the following conditions were met before the date the student became ineligible:
 - a) For all programs, an Institutional Student Information Record (ISIR) with an official expected family contribution (EFC) for the student was processed.
 - b) For an FSEOG, the institution made the award to the student.
 - c) For a Direct Loan, NDSCS originated the loan in PeopleSoft
2. If a post-withdrawal disbursement is due, determine the sources from which it will be funded and credit any grant portion towards allowable unpaid charges. A post-withdrawal disbursement must be made from available grant funds before available loan funds.

3. If outstanding charges exist on student's account, we will first credit the account up to the amount of outstanding charges in the following order:
 - a) Grant funds
 - a) Loan funds – after obtaining confirmation from student. Offer must be made within 30 days and allowing student at least 14 days to accept or decline.
4. When a Post Withdrawal creates a credit balance a disbursement directly to the student will be made as soon as possible, but no later than 14 days after the calculation of Return of Title IV.

Policy & Procedures for Unofficial Withdrawals

1. At the conclusion of each semester an Unofficial Withdrawal Report is run.
NDU Applications > NDU Financial Aid > Report > NDU Unofficial Withdrawal
2. Report is reviewed for students who received all F's or U's and did not attend past 60% of the term.
 - a) FN or UN – reported by instructor along with date of last attendance if student stopped attending during the term.
 - b) FNN or UNN – report by instructor if student never attended or performed an academic related activity.
3. Calculation of return of funds will be done on our software of PeopleSoft. The date of last attendance reported by the instructor will be used as the withdrawal date or the 50% point.
4. A letter is sent to the Registrar to transcript unofficial date of withdrawal.
5. An unofficial withdrawal letter will be mailed to the student to notify them of their obligation.
6. Student is placed on Financial Aid Disqualification.

Satisfactory Progress

Federal regulations require that schools participating in federal financial aid programs determine if students, whether they are receiving financial aid or not, are progressing through their programs of study in a satisfactory qualitative academic manner, and at a satisfactory quantitative rate of progress. If a student does not maintain Satisfactory Progress according to the guidelines defined below, the student will be placed on Financial Aid Warning. Students on Financial Aid Warning have access to any aid which they are eligible for during that semester. If the Satisfactory Progress guidelines defined below are not met during the warning period, a student will then be placed on Financial Aid Disqualification, which terminates eligibility. The student will be notified by email if they are placed on Financial Aid Warning or Disqualification.

QUALITATIVE ACADEMIC STANDARD

In accordance with the North Dakota State College of Science Academic Standards, students are expected to maintain a grade point average that is equal to or greater than the college's minimum requirements as stated in the College Catalog. At the conclusion of each semester, including the summer semester, the current and cumulative grade point average including all transfer credits will be evaluated for all students at North Dakota State College of Science. Special GPA, including transfer credits, must be at least 1.5 after one semester, 1.75 after two semesters, 1.86 after three semesters and 2.0 thereafter.

QUANTITATIVE RATE OF PROGRESS

Maximum Time Frame: Students must complete their program within 150 percent of the published length of the program.
Minimum percentage of completed hours: Students are required to successfully complete 67 percent of their attempted credit hours. At the conclusion of each semester, including the summer semester, this percentage will be calculated for both cumulative (including all transfer credits) and current credits. Credit hours attempted per term will be determined by the registered number of credits on the census date (8th class day) including course repeats. Credit hours completed per term will mean those credits for classes in which a student received a passing grade of A, B, C, D or S. Credit hours not completed include classes with Grades of F, I, U, W, AU or NR. Once a student has registered, it is especially important to evaluate any decision to drop credits. NOTE: Academic Warning, Probation or Suspension are not the same as Financial Aid Warning, Probation or Disqualification.

CRITERIA FOR RE-ESTABLISHING ELIGIBILITY

Students who have been determined ineligible for Federal Financial Aid due to satisfactory progress may re-establish satisfactory progress and regain eligibility by satisfying one of the following conditions:

- Complete one semester of at least 6 credits with a minimum of 2.0 GPA and 100% completion without financial aid. Student would then need to file an appeal to request reinstatement of financial aid.
- Complete course work to remove "Incomplete" from the transcript if all other Satisfactory Progress requirements are met. Student would then need to file an appeal to request reinstatement of financial aid.
- Students may re-establish eligibility following a three-year (3) period of non-enrollment at the State College of Science. Student would need to file an appeal to request reinstatement.
- Students may appeal to re-establish financial aid eligibility on the basis of extenuating medical or emotional circumstances. Examples of situations that would be acceptable include hospitalization, illness, depression, and death in family. Situations that are not acceptable include working too many hours, changing majors, or dislike course material or instructor. Such appeals will be dealt with on a case-by-case basis. If an appeal is approved, the students eligibility for financial aid will be reinstated.
- Students may appeal to establish eligibility for exceeding 150% length of program due to change of program or transfer credits that do not apply to current program.

Students who re-establish eligibility for financial aid will receive that aid on a plan of study status hereafter. The Satisfactory Progress requirements must be met each semester after appeal in order to remain eligible.

EXCEPTIONS TO THE SUSPENSION POLICY

Any student who received a term GPA 0.00 (F or I in all courses attempted) will automatically be placed on Financial Aid Disqualification and will not receive a Financial Aid Warning period. Any student whose enrollment is canceled administratively due to non-attendance, or withdraws from all classes in a semester will automatically be placed on Financial Aid Disqualification. Any student who does not meet a cumulative 2.0 Grade Point Average at the conclusion of their fourth semester and thereafter will be placed on Financial Aid Disqualification, without a Financial Aid Warning period.

APPEAL PROCESS

If placed on Financial Aid Disqualification, an appeal form is available at the Financial Aid Office. The appeal must be submitted along with supporting documentation to be considered. Appeals without supporting documentation will be returned to student. An appeal for reinstatement of eligibility should be submitted as soon as possible to insure financial aid availability at the time of fee payment.

ACADEMIC INFORMATION

Classification of Students

A full-time student carries 12 or more semester credits. A part-time student carries fewer than 12 semester credits. Students who have earned fewer than 30 semester credits either in transfer or on campus are classified as freshmen.

Semester System

- NDSCS operates under the semester system with two 16-week semesters and a summer session.
- Fall and spring term schedules provide specific information regarding the term calendar; course offerings, fees and meeting times; final exam schedule; guidelines for changes in registration; and instructions for using CampusConnection, the online registration system.
- A summer session schedule provides specific information regarding the summer term calendar; course offerings, fees and meeting times; enrollment procedures; and instructions for using CampusConnection.

Unit of Credit

In accordance with federal guidelines, academic credit hours for a course are determined by the amount of work represented in intended learning outcomes.

The NDSCS established equivalency for courses bearing academic credit reasonably approximates, and is not less than:

1. One semester hour of credit is awarded for 750 minutes of classroom or direct faculty instruction and a minimum of 1800 minutes of out-of-class student work.
 - a) Over a sixteen week semester this is equivalent to one 50 minute period of direct instruction and two hours of out-of-class work each week for 15 weeks plus a final exam period.
 - b) Classes scheduled as shorter sessions will meet the equivalent amount of class time per credit as full semester length classes.
2. At least one equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practicum, studio work, and other academic work leading to the award of credit hours.
 - a) For laboratories, a minimum of 100 minutes per week plus one out of class hour for 15 weeks is equivalent to one credit.
 - b) For shop practices, a minimum of 150 minutes per week for 15 weeks is equivalent to one credit.
 - c) One semester credit of field experience/internship/cooperative education/clinical/supervised occupational experience/etc. requires a minimum of 40 hours of direct experience. The unique nature of some disciplines may require additional and/or alternative means of meeting credit and content requirements.
 - d) Cooperative Education credits and limits are determined by the respective academic department in consultation with NDSCS Career Services.
3. For online, independent study or hybrid courses, which do not meet the faculty contact requirements, credit is awarded based on the equivalent face-to-face course or by assessing the required amount of student learning time commitment.

Early Entry (Dual Credit)

In 1997, the North Dakota Legislature passed a law allowing high school juniors and seniors to take college classes for both college and high school credit simultaneously. In 2009, this was expanded to include tenth grade high school students. Early Entry (Dual Credit) provides high school students with a more challenging curriculum option and the ability to earn both high school and college credit for a course completed while a high school student. Early Entry (Dual Credit) students can complete courses on their high school campus, on the NDSCS-Wahpeton campus, NDSCS-Fargo, online or through ITV/IVN classes. For more information, please contact the Director of Dual Credit at 701-671-2406 or 800-342-4325 ext. 2406.

Pathway Program

NDSCS-Fargo also offers the Pathway Program, which is a collaborative program between North Dakota State University and North Dakota State College of Science that prepares students for the academic rigors of college-level coursework. Students not fully admitted to NDSU may be invited to participate in the Pathway Program. This program is structured so students can enroll in academic readiness courses and a limited number of general education classes at NDSU and NDSCS-Fargo, located adjacent to the NDSU campus. Pathway students have access to all student services and activities at NDSU. Please contact the Admissions office at NDSU for additional information.

Advanced Standing

NDSCS recognizes off-campus learning experiences and translates these experiences into college credit where appropriate. Application for advanced standing should be made to the Registrar's office. Advanced standing may be obtained through the following methods:

CREDITS RECEIVED AT OTHER RECOGNIZED EDUCATIONAL INSTITUTIONS

Credits earned at regionally accredited colleges are accepted in transfer. Courses will be applied to program requirements as appropriate. An official, final transcript from the institution(s) attended must be presented.

A decision concerning the acceptance of transfer credits will not be made until an official transcript has been received from the institution the student previously attended.

Please refer to www.NDSCS.edu for further explanation regarding the transfer of credits to NDSCS. Search for transfer to NDSCS and click on the NDSCS TES button.

NDSCS will transcript all undergraduate coursework from regionally accredited colleges and universities including equivalent for international institutions previously attended. Graduate level coursework is not transcribed and will only be used to meet undergraduate requirements in unique situations. Such instances require the approval of the Vice President for Academic Affairs. The student's grade point average at NDSCS is an institutional grade point average for all residential credits only.

Transfer students must meet assessment criteria unless previous college records indicate satisfactory completion of first-year college English and math courses.

CREDIT BY ARTICULATION AGREEMENT

Students enrolled in secondary schools that have an articulation agreement with NDSCS may utilize the processes to receive college credit. The grade earned may be recorded on the transcript as an articulated course with either a satisfactory or a letter grade. Articulation agreements provide an opportunity for post-secondary credit based on competencies acquired while in high school. For further information, contact Enrollment Services.

Students scoring satisfactorily on the subject examinations of the College-Level Examinations Program (CLEP) may receive college credit as adopted according to SBHE Policy 403.7(3)(d).

MILITARY SERVICE EXPERIENCES

Admitted enrolled students who have earned additional or college level work for credit in a United States Armed Forces Institute program may request their scores be presented to the Enrollment Services office. The credit will be evaluated by the registrar using the Guide to the Evaluation of Educational Experiences in the Armed Services. Credit will be allowed only for those courses equivalent to those offered at NDSCS. Credits may also be earned from military experience and/or through challenge exams with departmental approval. The Enrollment Services office will be responsible for credit entry.

No cost is assessed for this service.

Credit for Life & Work Experience

CREDIT FOR PRIOR LEARNING PROGRAM

This program is designed to offer the adult learner an opportunity to apply learning earned through life and work experiences toward graduation. Individuals may receive college credit for prior learning experiences from a variety of work, military, volunteer, and other activities. These non-college activities must be evaluated to determine if college credit may be granted. The process may require students to enroll in the ASC 180 Prior Learning Assessment portfolio course. For specific questions, contact an academic counselor.

CREDIT FOR APPRENTICESHIP TRAINING

Individuals who have completed a United States Department of Labor (USDOL) approved apprenticeship training program of at least 6,000 hours, including a minimum of 400 related study hours, qualify for advanced standing in the Technical Studies-Journeyworker Track program. This flexible program provides students the opportunity to earn an Associate in Applied Science degree by receiving 32 college credits for their apprenticeship training and completing 32 additional credits in general education and technical/business emphasis. Students will work with an advisor to design their own plan of study based on their personal career goals. For further information, see the Technical Studies – Journeyworker information in the curriculum section of this catalog and contact 1-800-342-4325, ext. 3-2257.

Challenge Examinations

A student may seek credit by challenging a course if available by department. Students intending to challenge courses are strongly encouraged to do so the semester prior to when the class would normally be taken. This allowance does not apply to (a) courses for which nationally standardized examinations exist and are accepted by system wide agreements or (b) courses covered by articulation agreements with secondary schools. Students may not challenge a course in which they are actively enrolled or have previously earned a grade. The course challenge fee is 50 percent of the regular tuition charge, must be paid in advance of taking the challenge exam, and is nonrefundable. Students challenging online classes will be charged an additional online access fee.

Successful challenge grades must be a “C” or better and will be posted to the student’s transcript as test credits. Students should be aware that challenge grades may not be accepted in transfer by some other colleges. Unsuccessful challenges are not recorded.

The Challenge Exam Request form and Challenge Exam Policy and Procedure are available by contacting the Student Success Center.

Transfer of NDSCS Credit

Transfer of credits is always determined by the institution to which the student plans to transfer. Students planning to transfer should take the Liberal Arts transfer curriculum plan, which consists of courses most commonly required for preparation to another college or university. For specific bachelor’s degree requirements, students should consult the catalog of the campus to which they intend to transfer.

Excess Load

To enroll for more than 20 credits during any semester, a student must have a grade-point average of 3.0 or better and file a request for excess load at the Student Success Center in Old Main, except where more than 20 hours are required in a specific curriculum.

A request for excess load must be approved by both the student's advisor and an academic counselor.

Developmental Education

(ASC) COURSES: DEVELOPMENTAL READING, WRITING, MATHEMATICS

Based on ACT, ACCUPLACER, or other approved placement scores, students are required to enroll in and satisfactorily complete ASC course sequences prior to registering for college level English and math courses.

ESL/ELL COURSES: ENGLISH AS A SECOND LANGUAGE & ENGLISH LANGUAGE & GRAMMAR SKILLS

These classes are designed to teach grammar, punctuation, spelling, and to help students develop language and speaking skills. Students are placed in these courses based on their need, TOEFL, ACT, ACCUPLACER, or other approved placement scores. These courses are strongly recommended for non-English speaking students.

Library Resources

The Mildred Johnson Library enhances learning and success by providing information services to support both academic goals and lifelong learning for students, faculty and campus community members. In this modern age, the Library seeks to serve students in all venues, from brick and mortar to online. The Library's collection includes numerous computer and electronic resources, DVDs, CDs, board games, 3-D models, magazines, academic journals, newspapers and print books. The Library also has quiet study rooms and collaborative workstations.

Additional information is available in the Student Services section of this catalog, at www.NDSCS.edu/Library or by calling the Customer Service Desk at 1-800-342-4325, Ext. 3-2618 or the direct number 701-671-2618, or by emailing NDSCS.Library@ndscs.edu.

Final Examination Policy

End-of-term examinations are held according to the published examination schedule. If a student has more than two exams scheduled the same day, the student may contact his or her instructor(s) to establish a mutually acceptable time to reschedule one or more of the exams.

Grading System

A letter grade is used to indicate the quality of a student's work in a course. Grade points are assigned for each letter grade so a grade-point average can be calculated. The system is as follows:

Grade	Grade Points Explanation	Per Credit
A	Excellent	4.0
B	Good	3.0
C	Average	2.0
D	Poor	1.0
F	Failure	0.0
Au	Audit	
S	Satisfactory	
U	Unsatisfactory	

I	Incomplete
W	Withdrawal
WV	Waive
X	In Progress
NR	Not Reported

- The grade of “Incomplete” must be removed no later than the end of the mid-term examination week in the next college term, excluding the summer sessions. If the “Incomplete” is not removed by this time, it will automatically be changed to “F” or “U” by the Enrollment Services office.
- The grade of “Incomplete” is given at the instructor’s discretion and is dependent on missing work and attendance.
- The summer session is not considered in determining the time allowed for make-up of “I” grades.
- It is the student’s responsibility to see that “I” grades are made up.
- The term “Withdrew” is to be used when a student officially drops a course.

Satisfactory/Unsatisfactory

Students must perform a minimum of average work (at the discretion of the instructor) in order to receive a “Satisfactory.” Anything less is considered “Unsatisfactory.”

Semester Grades

Grades are available to students as soon as possible after the close of a semester. Grades will be available to the student via the NDSCS website, the CampusConnection link. Students making a 3.5 GPA or higher and completing at least 12 credits with letter grades will be listed on the President’s Honor Roll for the semester. Courses with S/U grades do not count in academic standing. Students making less than a 2.0 GPA may be placed on academic warning, probation or suspension.

Grade Transcripts

Students may request their official transcript through Parchment which can be found at www.parchment.com or through their CampusConnection account. Students will be charged a fee to have a transcript sent.

Grade Change

In the event a grade is recorded incorrectly, a change must be made by the instructor no later than the conclusion of the semester immediately following the semester in which the grade was issued, excluding the summer sessions.

Repeating Courses

When a course in which a student has previously received a grade is repeated, both grades show on the permanent record, but only the last grade received is used in the grade-point average.

Dropping or Adding Courses/Changing Curriculums

Students desiring to drop or add classes or change curriculums are strongly encouraged to visit with their instructor, advisor or academic counselor. Appropriate forms are available with the academic counselor in the Student Success Center.

Students should review the current academic calendar for specific drop and add dates.

A grade of “F” will be recorded for any course not formally dropped.

A change in registration may affect your tuition charges and/or your financial aid. In order to fulfill financial aid requirements, a student must successfully complete 67 percent of the attempted courses. Check with the Financial Aid office for any changes resulting in a change of schedule or dropping to the status of part-time student. Information regarding refunding of tuition and fees for withdrawing from college or dropping individual classes may be found in the tuition and fees section of this catalog.

Auditing Courses

A student may wish to take a course for no credit. This is completed by auditing the course. A student who wishes to enroll in a course as an “audit” must seek prior consent from the instructor. To earn an audit, the student is not required to complete daily assignments or take examinations; however, is expected to maintain satisfactory attendance in order to have an “AU” recorded on the transcript. While a student cannot fail an audit course, an instructor may file a “W” (withdrawn) for non-attendance. A student may not later establish credit in an audited course by taking a special examination; the course must be repeated in residence to earn credits. Additionally, auditing a course will not be used to satisfy a prerequisite for another course. A course initially registered as an audit will be charged 50 percent of tuition, plus applicable fees.

A student may drop a graded course and add it as an audit. This must be completed by the last day to add a course for the session attributable to the course.

Financial aid is not awarded for audited course work for either a full or part-time status.

Academic Warning, Probation, Suspension & Reinstatement Policy

The academic warning, probation and suspension policy is designed to give a student every possible opportunity to be successful in a college program.

The student is expected to maintain the following cumulative grade-point average:

GPA Units	Institutional GPA
9-16	1.50
17-33	1.75
34-50	1.85
51+	2.00

ACADEMIC WARNING

Failure to maintain the indicated grade point average will result in the student being placed on academic warning. Students and their advisors are notified in writing that the quality of the student’s work has fallen below acceptable standards and should this unsatisfactory condition continue during the subsequent semester, the student may be placed on academic probation.

ACADEMIC PROBATION

After one semester on academic warning, students may be placed on academic probation if their cumulative grade-point averages are not within the limits previously stated.

If the student achieves at least a 2.0 GPA during the subsequent semester(s) of enrollment but still does not achieve the required cumulative grade point average, he/she continues on probation until that requirement is satisfied. (Summer session is equivalent to one semester.)

Any student who is on academic probation and transfers from one program to another will continue to be on probation in the new program until the probationary terms are met.

ACADEMIC SUSPENSION

Students who fail to achieve at least a 2.0 grade point average for each of the subsequent semesters while on probation will be placed on academic suspension. Students who are suspended will not be readmitted until a lapse of one regular semester (fall or spring) has occurred and are not eligible to return during a summer semester due to the condensed format of courses.

Students who choose to appeal their academic suspension may do so by following the Academic Reinstatement Process listed below.

ACADEMIC REINSTATEMENT PROCESS

A student placed on academic suspension may appeal the suspension by completing the Appeal for Academic Reinstatement Form and filing it with the Enrollment Services office by the date stated in the Notification of Suspension. Students appealing their suspension must provide supporting documentation explaining the compelling circumstances they wish to have considered. Examples of compelling evidence may include: documented medical conditions, death of a family member, divorce and/or dependent support issues, legal problems and other extenuating circumstances that have affected the student's ability to meet required academic standards. This form is available through the Registrar's office, Haverty Hall, Room 101, by calling 701-671-2521, or online at www.NDSCS.edu/Reinstatement. If a reinstatement is granted and the student does not meet the required GPA the semester they are reinstated, the student will be suspended for one academic year with no option for appeal. Students who are suspended are not eligible to enroll in courses during a summer semester. Students are eligible for reinstatement during fall and spring semesters only.

The registrar or other designated academic official will gather the appeal request and academic information from the student. The Academic Review Committee will review provided documentation, meet with the student and make a decision to lift or uphold the suspension.

If the suspension is upheld, the student may advance a written appeal to the vice president for instructional affairs within five business days of the response. The vice president or their designee shall review the appeal and other relevant information and inform the student of the decision within five business days. The decision of the vice president is final.

If the student chooses to appeal an academic suspension decision, he/she is allowed to register and attend classes pending a resolution of the appeal. The student is responsible for any charges (tuition, fees, housing, dining services, tools, etc.) incurred during the review process. The student must adhere to the *NDSCS Student Rights and Responsibilities: A Code of Conduct*.

All students have the right to present an appeal in accordance to the steps outlined in this policy and are assured freedom from discrimination, coercion, restraint or reprisal in presenting appeal.

For additional information regarding academic support resources, please visit www.NDSCS.edu/AcademicStanding.

Academic Forgiveness for NDSCS Courses

STUDENTS CURRENTLY ENROLLED AT NDSCS

Upon successful completion of one semester (12 credits of 2.00 GPA), students may request academic forgiveness for previously taken courses that do not apply to their (new) currently-enrolled program. All requests must be in writing to the NDSCS Registrar. Courses that are assigned academic forgiveness may not be used to meet graduation requirements in a current or future program. Courses will remain on the student's academic transcript but will not be calculated as a part of the cumulative grade point average. Academic forgiveness cannot be requested for courses that have been used to meet graduation requirements in another curriculum.

STUDENTS ENROLLED AT ANOTHER INSTITUTION

NDSCS does not provide academic forgiveness for students who are enrolled at another institution. NDSCS respects the right of the receiving institution to award academic forgiveness if they deem it to be appropriate.

Student Eligibility to Participate in Student Clubs, Organizations or Leadership Programs

To participate in music or drama, a student must meet established NDSCS standards of academic progress. Eligibility for participation in intercollegiate athletics is established by the National Junior College Athletic Association.

Only students not on probation (academic or disciplinary) are permitted to hold student leadership positions in college recognized clubs, organizations or programs. Student leadership program eligibility requirements may vary. Please consult program advisor(s) for more information and eligibility criteria.

A student must have a 2.0 GPA in the semester preceding election or appointment and must have a cumulative average of 2.0 (some programs may have higher standards) to hold a leadership position in a recognized college organization or program.

Should a student fail to maintain a 2.0 GPA for any given semester, they may be required to step down from their position.

Absences

Students are required to regularly attend all classes labs, clinical and other educational experiences for which they are scheduled. In general, absences are excused only when due to illness or official representation of the College. For more detailed information concerning this matter, the student should consult the general regulations which will be found in the *NDSCS Student Rights and Responsibilities: A Code of Conduct* or department policies. For more information see Attendance Policy in the Academic and College Policies and Procedures section of the *NDSCS Catalog*.

Procedures for Dropping or Withdrawing

Students who are enrolled for the current semester and will no longer be attending classes for the remainder of the semester, need to initiate that drop/withdraw request through Student Success. Student Success will determine if the request qualifies as a "Drop of Remaining Credits" or a "Term Withdrawal". The effective date is the date of notification to Student Success. Failure to initiate the request within the designated time-frame will result in final earned grade(s). Note: A final grade is considered "earned" after the last day to drop the class. For more information contact Student Success at 701-671-3000.

Petition for Graduation

Graduation procedures are as follows:

1. Formal application for graduation should be made by the candidates prior to the semester during which they expect to complete requirements for graduation.
2. Petition for Graduation forms are located on the NDSCS website at www.NDSCS.edu/Graduation.
3. The award will be sent to the graduate.
4. Students are requested to participate in graduation exercises in order to have their degrees, diplomas or certificates conferred.

Graduation Requirements

Students enrolled at the North Dakota State College of Science become candidates for a graduation award when it is determined they have or will have successfully completed the requirements for graduation.

All program requirements must be completed as outlined in the official *NDSCS Catalog* for the year in which the applicant matriculated. Any exceptions to this requirement must have written approval of the department.

If the NDSCS graduation requirements change during a student's period of enrollment at NDSCS, the following will apply.

1. Students who are enrolled continuously will follow the graduation requirements in effect at the time of their initial enrollment.
2. Students who are not enrolled as a continuous student will follow the graduation requirements in effect during the academic year they reinitiate enrollment.
3. At least 16 of the final 24 credits of the curriculum must be taken through NDSCS.

The applicant's record must show an institutional grade-point average of at least 2.0 for all work completed that applies to the curriculum from which the applicant is graduating.

Students returning to NDSCS to complete a program that they were previously enrolled in will follow the guidelines of the program when they re-enroll. Additional documentation may be required for proof of current skills, employment and certifications.

All students who have completed 90 days or more of active military service are excused from the wellness requirements. These requirements will be waived. Proof of military service must be filed in the Enrollment Services office to waive the requirement. This will be a waiver of the course requirement only and no credits will be awarded. Students must still earn the minimum credits required for graduation for an associate degree, diploma or certificate.

Courses or credits that are waived by NDSCS are an institutional waiver only and may not be recognized at other colleges.

The requirements for graduation are as follows:

ASSOCIATE IN ARTS DEGREE

The Associate in Arts degree is conferred upon recommendation of the faculty and satisfactory completion of the following requirements:

1. The student must have completed a curriculum with a minimum of 64 credits, or more, if specified in the specific curriculum, with a minimum cumulative GPA of 2.0 (C) or higher.
2. The student must have completed the following minimum general education requirements:
 - a) six credits in ND:ENGL
 - b) three credits in ND:COMM
 - c) six credits in ND:HUM or ND:HIST (must have courses from two prefixes)
 - d) 13 credits in ND:MATH, ND:LABSC, ND:COMPSC or ND:SCI
 - i. All students must complete one lab science (ND:LABSC), one mathematics course (ND:MATH) and one ND:COMPSC
 - e) eight credits in ND:SS (must have courses from two prefixes)
 - f) two credits in wellness
 - g) remaining credits will emphasize arts, humanities and social sciences
 - h) attendance at designated campus and/or community activities that support the general education learning outcomes
 - i) GERTA requirements, 36 credits

In planning a program to meet these requirements, a student upon advisor approval, may substitute general education courses in order to meet requirements of the institution to which the student plans to transfer.

ASSOCIATE IN SCIENCE DEGREE

The Associate in Science degree is conferred on recommendation of the faculty upon satisfactory completion of the following requirements:

1. The student must have completed a curriculum with a minimum of 64 credits, or more, if specified in the specific curriculum, with a minimum cumulative GPA of 2.0 (C) or better.
2. The student must have completed the following minimum general education requirements:
 - a) six credits in ND:ENGL
 - b) three credits in ND:COMM
 - c) six credits in ND:HUM or ND:HIST (must have courses from two prefixes)
 - d) 13 credits in ND:MATH, ND:LABSC, ND:COMPSC or ND:SCI
 - i. All students must complete one lab science (ND:LABSC), one mathematics course (ND:MATH) and one ND:COMPSC
 - e) eight credits in ND:SS (must have courses from two prefixes)
 - f) two credits in wellness
 - g) remaining credits will emphasize business, science and/or mathematics transfer courses
 - h) attendance at designated campus and/or community activities that support the general education learning outcomes
 - i) GERTA requirements, 36 credits

In planning a program to meet these requirements, a student, upon advisory approval, may substitute general education courses in order to meet requirements of the institution to which the student plans to transfer.

ASSOCIATE IN APPLIED SCIENCE DEGREE

The Associate in Applied Science degree is conferred upon recommendation of the faculty and satisfactory completion of the following requirements:

1. The student must have completed a curriculum with a minimum of 64 credits, or more, if specified in the specific curriculum, with a minimum cumulative 2.0 (C) GPA or higher.
2. The student must complete the following minimum general education requirements:
 - a) six credits in English and/or communication (with a minimum of 3 credits in English composition)
 - b) three credits in mathematics and/or science
 - c) four credits in social and behavioral sciences, humanities, history and/or computer
 - d) two credits in wellness
 - e) three elective credits in general education, and
 - f) attendance at designated campus and/or community activities that support the general education learning outcomes

Total General Education requirements, 18 credits.

ASSOCIATE IN SCIENCE IN NURSING DEGREE

The Associate in Science in Nursing Degree is conferred on recommendation of the faculty upon satisfactory completion of the following requirements:

1. The student must have completed the specified curriculum with a minimum of 72 credits, with a minimum cumulative grade-point average of 2.0 (C) or better, and completed all required program courses with a "C" or higher grade.
2. The student must have completed the following minimum general education requirements:
 - a) six credits in ND:ENGL
 - b) three credits in ND:COMM
 - c) six credits in ND:HUM or ND:HIST (must have courses from two prefixes)

- d) 13 credits in ND:MATH, ND:LABSC, ND:COMPSC or ND:SCI. All students must complete one lab science (ND:LABSC), one mathematics course (ND:MATH) and one ND:COMPSC
- e) eight credits in ND:SS (must have courses from two prefixes)
- f) two credits in wellness
- g) remaining credits will emphasize nursing
- h) attendance at designated campus and/or community activities that support the general education learning outcomes
- i) GERTA requirements, 43 credits

DIPLOMA

The diploma is conferred upon recommendation of the faculty and satisfactory completion of the following requirements:

1. The student must have completed a curriculum with a minimum of 37 credits, or more if specified in the specific curriculum, with a minimum cumulative GPA of 2.0 (C) or higher.
2. The student must have completed the following minimum general education requirements:
 - a) three credits in English or communication
 - b) three credits in mathematics and/or science
 - c) four credits in social and behavioral sciences, humanities, history and/or computer
 - d) one credit in wellness
 - e) one elective credit in general education
 - f) attendance at designated campus and/or community activities that support the general education learning outcomes

Total General Education requirements, 12 credits.

CERTIFICATE

A certificate is awarded to qualified students who successfully complete an approved program of study between 9 and 36 credits. If a summer semester is included, a maximum of eight additional credits may be required.

1. The student must have completed a curriculum with a minimum of 9 credits with a minimum cumulative GPA of 2.0 (C) or higher.
2. The student must have completed the following minimum general education requirements:
 - a) three credits of general education in certificate programs of 16-23 credits, or
 - b) five credits of general education in at least two disciplines for programs of 24-36 credits or more, and
 - c) attendance at designated campus and/or community activities that support the general education learning outcomes

Certificate programs of 24 credits or greater must also have general education student outcomes embedded in the curriculum.

CERTIFICATE OF COMPLETION

A certificate of completion is awarded to qualified students who successfully complete an approved program of less than 9 credit hours or an approved non-credit course of study. There are no general education requirements.

NOTE: See the General Education and GERTA Course Matrix for a list of courses accepted in the various disciplines.

Posthumous Degree Award Procedure

The North Dakota State College of Science may award degrees posthumously under the following conditions:

1. A request must be received on behalf of the deceased student;
2. The student must have been in good academic standing with the institution at the time of death;
3. The student must have satisfied the institution's requirements for earned credits in residence;
4. The student must have substantially completed the degree requirements as determined by the institution.

General Education Outcomes

DEFINITION

General education is defined as a set of educational experiences that forms a core of common knowledge, skills and attitudes fundamental to all curriculums of substantial length (24 credits or more).

The NDSCS general education component is offered to address the following needs:

1. The employment market requires technically competent graduates who communicate effectively, practice teamwork skills and adapt to changing situations.
2. Today's dynamic society requires skills which will foster continuing formal and informal education and lifelong learning.
3. Personal growth requires exposure to diverse culture and value systems, expansion of critical thinking and development of personal life management skills.

PHILOSOPHY

The goal of general education at NDSCS is to assist students in meeting the above needs. To meet this goal, students are provided with a variety of credit and non-credit educational experiences, both inside and outside the classroom.

Involvement of students in campus and/or community life is a part of the general education philosophy of the college. There exists a wide spectrum of extracurricular campus-life situations in which all students are urged to actively participate. Research tells us that students who are involved in campus activities are more satisfied with their college experience and more likely to complete their college goals. Examples of activities NDSCS provides include instrumental and vocal musical groups, intramural and intercollegiate athletic programs, social events, student clubs, lectures, lyceums, dramatic productions, residence hall/apartment living and student government.

OBJECTIVES

- To develop skills necessary for creative problem-solving, critical thinking and analysis of values.
- To develop communication skills necessary for effective listening, speaking, reading and writing.
- To strengthen students' interpersonal and personal life management skills.
- To prepare students with skills and attitudes necessary for the pursuit of lifelong learning in a changing society.
- To provide opportunities for cultural enrichment and a developing awareness of a culturally diverse society.
- To provide a campus environment that promotes a lifestyle of mental and physical wellness.

STUDENT LEARNING OUTCOMES

1. Communication: Students will demonstrate effective communication skills.
2. Information Technology: Students will be able to utilize information using existing technologies.
3. Social and Cultural Awareness: Students will gain knowledge of diverse cultures and value systems.
4. Wellness: Students will gain skills in mental and physical wellness and leisure activities.
5. Problem-Solving/Critical Thinking: Students will be able to use reasoning skills to analyze and solve applied problems.

General Education Transfer Agreement (GERTA)

General education courses in the areas of communications, arts and humanities, social sciences, mathematics, science and technology taken at any North Dakota University System institution or any other participating colleges/universities count upon transfer toward the general education requirements at all NDUS institutions in one of the following two ways:

1. If the general education coursework includes courses from each of these areas totaling at least 36 semester credits and completes the general education requirements of the institution from which the student transfers, then the student is deemed to have completed the lower division general education requirements of the institution to which the courses are transferred.
2. In all other cases the general education courses from the indicated areas are applicable to an appropriate general education requirement of the institution to which they are transferred. In these cases the number of credits required to complete the general education requirement in each area is determined by the policies of the institution to which the courses are transferred.

Within the stipulated areas each institution shall indicate in its catalog and other student advisement materials its courses which are approved for general education. NDUS institutions may establish program/institution specific requirements. A student should consult the institution to which he or she intends to transfer relative to these program/institution requirements.

NDSCS GERTA REQUIREMENTS

The following NDSCS requirements have been approved by the North Dakota University System for the purposes of meeting general education requirements for transfer to other NDUS institutions:

1. Communication (nine credits: six credits English and three credits communications): Any course marked ND:ENGL may apply to the six credits English requirement. Any course marked ND:COMM may apply to the speech requirement.
2. Humanities/history (six credits): From two different prefixes within the categories marked ND:HUM or ND:HIST.
3. Social and behavioral sciences (eight credits): From two or more prefixes within the category marked ND:SS.
4. Math, science and computer information systems (13 credits): Any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI. All students must complete one lab science (ND:LABSC) course, one mathematics (ND:MATH) course and one CIS (ND:COMPSC) course.

NOTE: NDSCS also has a wellness requirement. Please consult specific transfer degree programs for more information.

The NDSCS courses listed in the GERTA column in the General Education and GERTA Course Matrix have been approved by NDUS to meet general education requirements in certain categories.

Liberal Arts Transfer Program Purposes

Within the Liberal Arts transfer curriculum plans, students can choose from numerous emphases areas and receive an associate in science or associate in arts degree in Liberal Arts.

Depending on the emphasis selected, students will receive either an associate in science or associate in arts degree upon completion of the required curriculum.

The purposes of the Liberal Arts transfer curriculum plans are:

1. To provide two-year programs of general education for students who will transfer to a senior college or university.
2. To provide courses that meet established professional, accrediting, NDUS standards for two-year colleges.
3. To provide two-year programs for those students who are undecided about their choice of a career.
4. To provide general education courses for personal enrichment.

Curriculums for each emphasis are presented in the Academic Program section of the *NDSCS Catalog*.

GENERAL EDUCATION & GERTA COURSE MATRIX

COURSE		CREDITS	GERTA (NDUS)	DEGREE	
				AA/AS	AAS/Dipl./Cert.
COMPUTER TECHNOLOGY					
CIS 101	Computer Literacy	2	ND:COMPSC	X	X
CSCI 101	Introduction to Computers	3	ND:COMPSC	X	X
CSCI 116	Business Use of Computers	3-4	ND:COMPSC	X	X
CSCI 122	Visual Basic	3	ND:COMPSC	X	X
CSCI 125	Beginning COBOL (II)	3	ND:COMPSC	X	X
CSCI 160	Computer Science I	4	ND:COMPSC	X	X
CSCI 161	Computer Science II (Java)	4	ND:COMPSC	X	X
ENGLISH COMPOSITION					
ENGL 105	Technical Communications	3			X
ENGL 110	College Composition I	3	ND:ENGL	X	X
ENGL 120	College Composition II	3	ND:ENGL	X	X
ENGL 125	Introduction to Professional Writing	3	ND:ENGL	X	X
FINE ARTS ACTIVITIES					
THEA 201	Theatre Practicum	1	ND:FA	X	X
THEA 270	Stagecraft	1	ND:FA	X	X
HISTORY					
HIST 101	Western Civilization I	3	ND:HIST	X	X
HIST 102	Western Civilization II	3	ND:HIST	X	X
HIST 103	United States History to 1877	3	ND:HIST	X	X
HIST 104	United States History Since 1877	3	ND:HIST	X	X
HIST 207	United States and Current World Affairs	3	ND:HIST	X	X
HIST 220	North Dakota History	3	ND:HIST	X	X
HIST 260	Women in America	3	ND:HIST	X	X
HUMANITIES					
ENGL 207	Language Studies: Conversational English and American Studies	3		X	X
ENGL 211	Introduction to Creative Writing	3	ND:HUM	X	X
ENGL 220	Introduction to Literature	3	ND:HUM	X	X
ENGL 232	Mythology	2-3	ND:HUM	X	X
ENGL 238	Children's Literature	3	ND:HUM	X	X
ENGL 240	World Literature Masterpieces	3	ND:HUM	X	X
HUM 211	Integrated Cultural Excursion: Regional and Cultural Studies	1-3	ND:HUM	X	X
HUM 250	Norwegian Cultural Studies	3	ND:HUM	X	
MUSC 100	Music Appreciation	3	ND:HUM	X	X
MUSC 101	Fundamentals of Music	3	ND:HUM	X	X
MUSC 207	History of Rock and Roll Music	3	ND:HUM	X	X
PHIL 210	Ethics	3	ND:HUM	X	X
PHIL 213	Societal and Ethical Implications of Technology	3			X
SPAN 101	First Year Spanish I	4	ND:HUM	X	X
SPAN 102	First Year Spanish II	4	ND:HUM	X	X

COURSE		CREDITS	GERTA (NDUS)	DEGREE	
				AA/AS	AAS/Dipl./Cert.
LABORATORY SCIENCE					
BIOL 111/L	Concepts of Biology/Lab	3/1	ND:LABSC	X	X
BIOL 115/L	Concepts of Anatomy and Physiology/Lab	3/1	ND:LABSC	X	X
BIOL 124/L	Environmental Science/Lab	3/1	ND:LABSC	X	X
BIOL 150/L	General Biology I/Lab	3/1	ND:LABSC	X	X
BIOL 151/L	General Biology II/Lab	3/1	ND:LABSC	X	X
BIOL 170/L	General Zoology/Lab	3/1	ND:LABSC	X	X
BIOL 213	General Pathology	3		X	X
BIOL 220/L	Anatomy and Physiology I/Lab	3/1	ND:LABSC	X	X
BIOL 221/L	Anatomy and Physiology II/Lab	3/1	ND:LABSC	X	X
CHEM 115/L	Introductory Chemistry/Lab	3/1	ND:LABSC	X	X
CHEM 116/L	Introduction to Organic and Biochemistry/Lab	3/1	ND:LABSC	X	X
CHEM 121/L	General Chemistry I/Lab	4/1	ND:LABSC	X	X
CHEM 122/L	General Chemistry II/Lab	4/1	ND:LABSC	X	X
CHEM 241/L	Organic Chemistry I/Lab	4/1	ND:LABSC	X	X
CHEM 242/L	Organic Chemistry II/Lab	4/1	ND:LABSC	X	X
MICR 202/L	Introductory Microbiology/Lab	3/1	ND:LABSC	X	X
PHYS 211/L	College Physics I/Lab	3/1	ND:LABSC	X	X
PHYS 212/L	College Physics II/Lab	3/1	ND:LABSC	X	X
PHYS 251/L	University Physics I/Lab	4/1	ND:LABSC	X	X
PHYS 252/L	University Physics II/Lab	4/1	ND:LABSC	X	X
MATHEMATICS					
BOTE 108	Business Mathematics	3			X
MATH 102	Intermediate Algebra	3			X
MATH 103	College Algebra	3	ND:MATH	X	X
MATH 104	Finite Mathematics	3	ND:MATH	X	X
MATH 105	Trigonometry	2	ND:MATH	X	X
MATH 107	Pre-Calculus	4	ND:MATH	X	X
MATH 120	Basic Mathematics I	2			X
MATH 123	Basic Mathematics II	2			X
MATH 125	Basic Mathematics III	2			X
MATH 130	Technical Mathematics	2			X
MATH 132	Technical Algebra I	2			X
MATH 134	Technical Algebra II	2			X
MATH 136	Technical Trigonometry	2			X
MATH 137	Applied Algebra	3			X
MATH 146	Applied Calculus I	4	ND:MATH	X	X
MATH 147	Applied Calculus II	4	ND:MATH	X	X
MATH 165	Calculus I	4	ND:MATH	X	X
MATH 166	Calculus II	4	ND:MATH	X	X
MATH 210	Elementary Statistics	3	ND:MATH	X	X
MATH 227	Applied Linear Algebra	3		X	X
MATH 265	Calculus III	4	ND:MATH	X	X
MATH 266	Introduction to Differential Equations	3	ND:MATH	X	X
SCIENCE AND TECHNOLOGY					
PLSC 110	World Food Crops	3	ND:SCI	X	X
SOIL 210	Introduction to Soil Science	3	ND:SCI	X	X

COURSE		CREDITS	GERTA (NDUS)	DEGREE	
				AA/AS	AAS/Dipl./Cert.
SOCIAL SCIENCE					
CJ 160	The Legal System	4		X	X
CJ 201	Introduction to Criminal Justice	3	ND:SS	X	X
CJ 232	Administration of Justice	3		X	X
COMM 112	Understanding Media and Social Change	3	ND:SS	X	X
COMM 216	Intercultural Communication	3	ND:SS	X	X
ECON 105	Elements of Economics	3	ND:SS	X	X
ECON 201	Principles of Microeconomics	3	ND:SS	X	X
ECON 202	Principles of Macroeconomics	3	ND:SS	X	X
POLS 115	American Government	3	ND:SS	X	X
POLS 116	State and Local Government	3	ND:SS	X	X
POLS 236	The American Constitution – Civil Liberties	3	ND:SS	X	X
PSYC 100	Human Relations in Organizations	2	ND:SS	X	X
PSYC 111	Introduction to Psychology	3	ND:SS	X	X
POLS 225	Comparative Politics I	3	ND:SS	X	X
PSYC 230	Educational Psychology	3	ND:SS	X	X
PSYC 240	Industrial/Organizational Psychology	3	ND:SS	X	X
PSYC 250	Developmental Psychology	3	ND:SS	X	X
PSYC 255	Child and Adolescent Psychology	3	ND:SS	X	X
PSYC 270	Abnormal Psychology	3	ND:SS	X	X
SOC 110	Introduction to Sociology	3	ND:SS	X	X
SOC 115	Social Problems	3	ND:SS	X	X
SOC 220	Family	3	ND:SS	X	X
SOC 221	Minority Relations	3	ND:SS	X	X
SWK 255	Social Work in a Modern Society	3		X	X
SWK 256	Development of Social Welfare	3	ND:SS	X	X
SPEECH					
COMM 110	Fundamentals of Public Speaking	3	ND:COMM	X	X
COMM 212	Interpersonal Communication	3		X	X
WELLNESS					
EMS 100	Emergency Medical Responder (EMR)	2		X	X
HPER 100	Concepts of Fitness and Wellness	2		X	X
HPER 101	Activity: Intro Level	1		X	X
HPER 110	Sports Officiating	2		X	X
HPER 150/250	Athletic Participation	2		X	X
HPER 151/251	Athletic Participation	2		X	X
HPER 200	Introduction to Parks and Recreation	2		X	X
HPER 201	Introduction to Coaching	2		X	X
HPER 207	Prevention and Care of Injuries	3		X	X
HPER 208	Introduction to Physical Education	2		X	X
HPER 210	First Aid and CPR (Professional/Community)	2		X	X
HPER 217	Personal and Community Health	3		X	X
MUSC 115	Concert Band	1		X	X
MUSC 117	Concert Choir	1		X	X
MUSC 138	Jazz Band	1		X	X
MUSC 157	Pop-Swing Choir	1		X	X
NUTR 240	Principles of Nutrition (and Diet Therapy)	3		X	X
NUTR 255	Eating Disorders	1		X	X

Rev. 3/16/2022

ACADEMIC & COLLEGE POLICIES & PROCEDURES

The North Dakota State College of Science is committed to the principle that the affairs of the college shall be conducted in an orderly fashion to ensure the well-being of students and other constituent groups in pursuit of learning and academic achievement. This section contains complete and/or introductory statements for key policies and procedures necessary for the administration of learning and academic programming. It also contains information on where to locate complete and/or other relevant policies and procedures.

The *NDSCS Student Rights and Responsibilities: A Code of Conduct* is a comprehensive guide to many of the official academic and college policies and procedures related to student rights and responsibilities of importance to NDSCS students and employees. Please refer to it for a complete overview of these policies and procedures. It also includes procedures for addressing student sanctions, judicial actions and student complaint, appeal and grievance issues.

The *NDSCS Student Rights and Responsibilities: A Code of Conduct* can be found at www.NDSCS.edu/Student-Rights.

Respect for the NDSCS Community

All NDSCS stakeholders have a responsibility to respect the NDSCS community. It is vital for all individuals to conduct themselves in a manner that does not negatively affect the educational mission of the College or the welfare of themselves or others. This includes promoting an environment conducive to learning and fostering a sense of shared and mutual community responsibility. Community responsibility also involves awareness of how personal decisions affect others.

A community respecting the protection of rights of others is necessary to provide a positive and enriching educational environment. Conduct that inhibits the educational process is of concern, whether it occurs on or off College premises.

All NDSCS students have identified rights within the Code and as afforded by due process. The College will work with students in an educational and fair manner to assist them in reflecting upon and growing from their personal experiences.

Community Expectations

All students are expected to observe the College standards published in *NDSCS Student Rights and Responsibilities: A Code of Conduct*, and those outlined in any other College policies, procedures, contracts or license contracts published elsewhere (College catalog and website, formal College notices and communications). In addition, students are expected to observe all community, state, federal and international laws (when touring and/or studying abroad).

The College reserves the right to address any conduct occurring on or off campus that may be construed as potential or alleged violations of local, state or federal laws. For a complete list of prohibited conduct, see the *NDSCS Student Rights and Responsibilities: A Code of Conduct*.

Sanctions & Conditions

A sanction is a consequence placed upon any student for violations of specified College policies. Sanctions help define the student's relationship with the College in the context of current and potential future conduct, including a notice that further violations may lead to more severe conduct sanctions.

Please see the *NDSCS Student Rights and Responsibilities: A Code of Conduct* for a complete description of the Code of Conduct resolution process.

Student Alcohol/Other Drug Policy

Regardless of a person's age, the manufacture, sale, transfer, purchase, transportation, possession, use or consumption of alcohol (in any form), and/or possession or display of empty alcohol beverage containers anywhere on NDSCS owned or controlled property and/or sponsored or supervised events is prohibited.

Possession, consumption, being under the influence, or transport of illegal drugs or any other controlled substances not prescribed to you is prohibited. The manufacture, exchange, distribution, purchase or sale of illegal drugs or controlled substance is prohibited. The possession of drug paraphernalia for illegal drug use is prohibited.

Students may face sanctions under this code for alcohol related incidents occurring off college property. Such incidents include, but are not limited to: minor in possession/consumption/under the influence of alcohol, driving under the influence of alcohol or other drugs, public consumption of alcohol or other drugs, and providing alcohol to a minor.

In addition to prohibiting active participation in alcohol consumption, the NDSCS Code prohibits **passive participation**, which is defined as being present and having reasonable knowledge that a code violation is taking place.

In addition to prohibiting active participation in alcohol consumption, the NDSCS Code prohibits passive participation, which is defined as being present while a violation is occurring, actively encouraging a violation to occur, or failing to report an alleged conduct violation.

Students are expected to make decisions that align with the Code, and those decisions include:

- Leaving the situation immediately,
- Encouraging individuals to cease the behavior,
- Leaving the situation immediately and reporting the alleged violation(s), or
- Staying and being charged with a violation of the Code.

Passive participants may be sanctioned to the same extent as if they had committed the prohibited act. Students are accountable for their guests' conduct and may be sanctioned under this provision as if they had committed the violations themselves.

Parents or guardians of students under the age of 21 may be contacted by an NDSCS administrator following alcohol and/or other drug related policy violations.

Please see the *NDSCS Student Rights and Responsibilities: A Code of Conduct* for information related to sanctions. More information can be found at www.NDSCS.edu/Alcohol-Drug/Policies.

Tobacco Free College Policy

NDSCS prohibits the use of all tobacco products on College property including off property, College-sponsored events/activities. This prohibition includes indoors, outdoors, College vehicles, and/or personal vehicles while on College property. NDSCS prohibits the use and possession of all electronic nicotine delivery devices in College-owned residential buildings.

For more information and to view the full NDSCS Tobacco Free Environment Policy, visit www.NDSCS.edu/Tobacco and the *NDSCS Student Rights and Responsibilities: A Code of Conduct* for sanctions.

Weapons/Firearms/Explosives

Unauthorized and/or illegal possession, display or use of firearms, explosives or other weapons is prohibited.

Possession, display or storage of weapons in College-owned buildings is prohibited. **All firearms must be registered with NDSCS Police upon arrival to NDSCS.**

- Firearms and weapons include, but are not limited to, airsoft guns, BB guns, dart guns, handguns, paint ball guns, pellet guns, rifles, shotguns, stun guns or similar device designed to deliver an electric shock.
- Explosives include, but are not limited to, bombs, explosives, fireworks and other incendiary devices. Incendiary devices are defined as any flammable substance enclosed in a readily breakable container that can be equipped with an igniter of any type.

- Other weapons include, but are not limited to, martial arts implements, dangerous fuels and chemicals, daggers, knives, sabers, swords, and bows and arrows. Any object may be considered a weapon when used to inflict or threaten infliction of bodily injury or property damage.
- Throwing or casting any object into, upon, or against any building, structure, motor vehicle or at any person is prohibited.

This policy shall not prohibit individuals or student organizations from possessing, storing or using weapons at approved locations for the purpose of meeting requirements of educational programs and/or approved activities being conducted by a student group recognized by the College. For authorization, contact the NDSCS Police Department at 701-671-2233.

NDSCS Police provides storage for students to store sporting arms, such as those used for hunting and other shooting sports. An officer must be present for check-in/check-out. Contact the NDSCS Police Department at 701-671-2233 to make arrangements for weapons storage.

Non-Discrimination Statement

North Dakota State College of Science does not discriminate on the basis of age, color, gender identity/expression, genetic information, marital status, national or ethnic origin, mental or physical disability, public assistance status, race, religion, sex, sexual orientation, familial or parental status, status as a U.S. veteran/service member, or participation in lawful activity off the employer's premises during nonworking hours which is not in direct conflict with the essential business related interests of the employer. This non-discrimination statement applies to all phases of NDSCS's employment process, admissions, financial aid programs, and all other aspects of its educational programs and activities.

Furthermore, this non-discrimination statement applies to sexual harassment and sexual violence (forms of sexual discrimination) if such conduct has a negative effect on an individual's educational or work environment, regardless if such conduct occurs on or off campus.

Equal Opportunity Policy

The North Dakota State College of Science is an equal opportunity employer and equal opportunity educator. NDSCS is fully committed to equal opportunity in employment decisions and educational programs and activities. All practices are in compliance with all applicable federal and state laws, for all individuals without regard to age, color, gender identity/expression, genetic information, marital status, national or ethnic origin, physical and mental ability status, public assistance status, race, religion, sex, sexual orientation, familial or parental status, status as a U.S. veteran/service member, or participation in lawful activity off the employer's premises during nonworking hours which is not in direct conflict with the essential business related interests of the employer.

Inquiries regarding non-discrimination policies at NDSCS should be directed to: Student Concerns and Comments page at www.NDSCS.edu/Concern or the Executive Director of Human Resources, Haverty Hall 136, North Dakota State College of Science, 800 Sixth St. North, Wahpeton, ND 58076-0002, 701-671-2904.

Sexual Misconduct & Title IX Compliance Policy

Title IX of the Educational Amendments of 1972 provides: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity receiving federal financial assistance."

In accordance with Title IX, NDSCS does not tolerate sex or gender discrimination, including sexual misconduct such as sexual harassment and sexual assault, stalking, and intimate partner violence in NDSCS's education program and activities. Also prohibited under Title IX is any rule violated on the basis of the recipient of the behavior's sex and/or gender, which is severe enough to cause discriminatory effect. For more information on the NDSCS Sexual Misconduct and Title IX Compliance Policy visit www.NDSCS.edu/Title9 or contact the Title IX Coordinator:

Sandi Gilbertson

NDSCS – Haverty Hall 120
 800 6th St. N.
 Wahpeton, ND 58076
 Sandi.Gilbertson@ndscs.edu
 701-671-2904

Academic Integrity Policy Statement

Acts of academic dishonesty, including but not limited to cheating, plagiarism, falsifying research data or results, or assisting others to do the same will be cause for sanction up to and including a reduction in grade, failure of the course, or removal from class.

Academic Integrity Procedure

PURPOSE

To ensure academic honesty and integrity in the classroom, regardless of modality.

ACADEMIC MISCONDUCT

Academic misconduct consists of, but is not limited to the following:

1. Cheating on an examination, clinical, or the preparation of academic work. Any student who engages in any of the following shall be deemed to have engaged in cheating:
 - a. Copying from another student's test paper, laboratory report, report, computer files, data, listings, and/or programs;
 - b. Using, during a test, materials not authorized by the instructor (including when taking tests at a NDSCS Test Center);
 - c. Conspiring with another person, without authorization, during an examination, clinical, or in preparing academic work;
 - d. Contributing to or facilitating academic misconduct with others ;
 - e. Knowingly and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possession in whole or in part, the contents of coursework, an examination or quiz;
 - f. Substituting for another student, or permitting another student to substitute for oneself in taking an examination, clinical, or preparing academic work;
 - g. Bribing another person to obtain an examination or information about an examination;
 - h. Individual alteration or attempting to bribe any faculty/staff/student to alter a grade.
2. Plagiarizing or appropriating another work or idea without properly acknowledging incorporation of that work or idea into one's own work offered for credit.
3. Any forgery, alteration, or misuse of academic documents, forms, or records.
4. Fabrication including the intentional falsification or invention of any information.
5. Working with another student(s) to participate in academic misconduct.
6. Violating requirement or agreements associated with academic work or guided work experiences.
7. Sharing passwords, login information, or access to online course content.

OUTCOMES OF ACADEMIC MISCONDUCT

When an instructor has convincing evidence of academic misconduct, outcomes may include, but are not limited to:

- A reduced or failing grade may be assigned for the course, academic work, or activity.
- The student may be required to re-submit the assignment.
- The student may be required to submit an alternative assignment that meets the same learning outcomes.
- Additional action may be taken in certain academic programs (refer to academic program guidelines/expectations)

ACADEMIC CONDUCT PROCEDURE

The instructor will provide notice to the student(s) via their official NDSCS email account. The notice will include the alleged academic misconduct and potential outcome(s) based on the instructor's stated policies and those of the academic program or institution.

INFORMAL RESOLUTION

The student may request a meeting within five (5) business days with the instructor to discuss the alleged academic misconduct and the potential outcome.

If a meeting is requested, the instructor will:

- Explain the alleged academic misconduct;
- Detail any related evidence; and
- Provide the student the opportunity to respond to the allegation of academic misconduct.

Informal resolution is reached where:

- The student and the instructor agree academic misconduct did not occur; or
- The student agrees to the alleged academic misconduct and agrees to the proposed outcome, waiving all appeal rights.
- Instructor completes the Academic Misconduct Reporting Form which is routed to the Student Conduct Office to document student acknowledgement of the outcome.

If informal resolution is not achieved at the individual or departmental level, the student should contact the department chair, director, or academic dean with administrative responsibility for the department or individual involved. These individuals may be able to provide assistance in resolving the issue in an informal manner at the individual or department level. If an informal resolution is not successful, the instructor or administrator will inform the student of the formal grievance process.

FORMAL RESOLUTION

Formal resolution will follow the established Academic Grievance Process.

FILING A FORMAL ACADEMIC GRIEVANCE

Step 1. Students wishing to file a formal academic grievance shall do so to the department chair, director, or academic dean with responsibility for the department or individual involved by submitting the grievance in writing. The grievance shall be submitted within five (5) business days of the departmental decision or determination by the administrator that informal resolution is not possible.

Step 2. The department chair, director, or academic dean, either alone or in consultation with appropriate faculty, staff and students will initiate the resolution process by investigating the complaint. An alternate resolution or decision will be reached within ten (10) business days of receipt of the grievance and communicated to the student in writing. The department chair, director, or academic dean will submit an **Academic Misconduct Reporting Form** documenting the outcome of the grievance process. If there is no appeal, the decision of the department chair, director, or academic dean is final.

FILING AN APPEAL OF AN ACADEMIC GRIEVANCE DECISION

If the student is not satisfied with the resolution or decision, a written appeal may be submitted to the vice president for instructional affairs office (via email or delivered to Haverty Hall 123) within five (5) business days of the decision. The appeal must be based on one or more of the following factors:

- the established procedures were not properly followed; or
- an adequate opportunity to present evidence was not allowed; or
- additional information exists that was not available or considered at the time of the decision; or
- the evidence was not substantial enough to justify the decision.

The vice president for instructional affairs shall assemble a Student Academic Grievance Committee within ten (10) business days of receipt of the written appeal. The Student Academic Grievance Committee shall be composed of two students designated by the Student Senate, two faculty members designated by the Faculty Senate and the vice president for instructional affairs or their designee. A member with a conflict of interest may be removed or may voluntarily withdraw from the committee if the situation warrants such action.

The vice president for instructional affairs or their designee shall inform the student and Student Academic Grievance Committee of the specific time and place of the meeting. The committee shall review the written appeal provided by the student and the record made by the department chair, director or academic dean, and reach a decision based upon these documents. The committee may, in its sole discretion, receive additional testimony or other evidence and make that information part of its record. Upon reaching a decision, the vice president for instructional affairs or their representative shall, if possible, orally communicate the committee's decision to the student followed by a written decision within two business days. The vice president of instructional affairs, or their representative, will submit an **Academic Misconduct Reporting Form** documenting the outcome of the appeal process. The decision of the Student Academic Grievance Committee is final.

All references to business days shall be actual days that College offices are open.

All students have the right to present grievances in accordance to the steps outlined in this policy and are assured freedom from discrimination, coercion, restraint, or reprisal in presenting grievances.

If a student chooses to appeal an academic grievance decision, he/she is allowed to register and attend classes pending a resolution of the appeal. The student is responsible for any charges (tuition, fees, housing, dining services, tools, etc.) incurred during the review process. The student must adhere to the NDSCS Student Rights and Responsibilities: A Code of Conduct. Students engaging in dangerous, unlawful, or ongoing disruptive behavior may be denied from attending classes.

ACADEMIC REPORTING FORM

The **Academic Misconduct Reporting Form** is available through Starfish and will be submitted by the final decision-maker for each student found responsible. Forms will be monitored by the lead student conduct officer and tracked through Maxient.

Students will receive an email via Maxient documenting receipt of the notice of outcome.

STUDENT CONDUCT

Academic Misconduct Reporting Forms will be monitored by the lead student conduct officer. The student conduct officer will notify the appropriate department chair and dean of instructional affairs when a student(s) is found responsible for multiple incidents of academic misconduct. Students responsible for multiple incidents of academic misconduct may be referred to the student conduct process.

RESPONSIBLE ADMINISTRATOR

The Vice President for Instructional Affairs, or designee, is responsible for annual and ad hoc review of this policy and procedure.

Student Academic Complaints and Grievances

GENERAL

A complaint or grievance exists when an enrolled student is dissatisfied with a decision or an aspect of his or her academic college experience over which the student has no control and on which remedial action is desired.

RESOLVING STUDENT ACADEMIC COMPLAINTS OR GRIEVANCES

Initially, the student should attempt to resolve the concern directly with the appropriate department chair, supervisor, faculty member, staff member or student. If the student is not satisfied, or is unwilling to address the issue at the individual or departmental level, the student should contact the department chair, director or academic dean with

administrative responsibility for the department or individual involved. These individuals may be able to provide assistance in resolving the issue in an informal manner at the individual or department level. If informal resolution is not successful or is deemed unrealistic, the administrator will inform the student of the formal grievance process.

FILING A FORMAL ACADEMIC GRIEVANCE

Step 1. Students wishing to file a formal academic grievance shall do so to the department chair, director or academic dean with responsibility for the department or individual involved by submitting the grievance in writing. The grievance shall be submitted within five business days of the departmental decision or determination by the administrator that informal resolution is not possible.

Step 2. The department chair, director, or academic dean, either alone or in consultation with appropriate faculty, staff and students, will initiate the resolution process by investigating the complaint. An alternate resolution or decision will be reached within 10 business days of receipt of the grievance and communicated to the student in writing. If there is no appeal, the decision of the department chair, director or academic administrator is final.

FILING AN APPEAL OF AN ACADEMIC GRIEVANCE DECISION

If the student is not satisfied with the resolution or decision, a written appeal may be submitted to the vice president for instructional affairs office (via email or delivered to Haverty Hall 123) within five business days of the decision. The appeal must be based on one or more of the following factors:

- the established procedures were not properly followed; or
- an adequate opportunity to present evidence was not allowed; or
- additional information exists that was not available or considered at the time of the decision; or
- the evidence was not substantial enough to justify the decision.

The vice president for instructional affairs shall assemble a Student Academic Grievance Committee within 10 business days of receipt of the written appeal. The Student Academic Grievance Committee shall be composed of two students designated by the Student Senate, two faculty members designated by the Faculty Senate and the vice president for instructional affairs or his/her designee. A member with a conflict of interest may be removed or may voluntarily withdraw from the committee if the situation warrants such action.

The vice president for instructional affairs or his/her designee shall inform the student and Student Academic Grievance Committee of the specific time and place of the meeting. The committee shall review the written appeal provided by the student and the record made by the department chair, director or academic dean, and reach a decision based upon these documents. The committee may, in its sole discretion, receive additional testimony or other evidence and make that information part of its record. Upon reaching a decision, the vice president for instructional affairs or their representative shall, if possible, orally communicate the committee's decision to the student followed by a written decision within two business days. The decision of the Student Academic Grievance Committee is final.

All references to business days shall be actual days that College offices are open.

All students have the right to present grievances in accordance to the steps outlined in this policy and are assured freedom from discrimination, coercion, restraint or reprisal in presenting grievances. If a student chooses to appeal an academic grievance decision, they are allowed to register and attend classes pending a resolution of the appeal. The student is responsible for any charges (tuition, fees, housing, dining services, tools, etc.) incurred during the review process. The student must adhere to the *NDSCS Student Rights and Responsibilities: A Code of Conduct*. Students engaging in dangerous, unlawful or ongoing disruptive behavior may be denied from attending classes.

Attendance Policy

GENERAL

Regular attendance, promptness and participation in classes, laboratories and/or shops is expected of each student.

If a student must be absent for an extenuating circumstance, such must be communicated to the instructor(s). Individual departments and/or instructors may develop attendance policies to meet specific program or course needs.

It is the responsibility of the instructor to enforce the attendance policy as specified in the course syllabi and/or student handbook. The instructor shall refer to the Student Success Center for any case of absenteeism that might require special attention.

An online student who does not submit class work for seven consecutive calendar days may be dropped from the course. Efforts to contact inactive students are attempted as soon as each semester begins; however, if there is no response from the student and inactivity continues, an administrative drop will be enacted.

The following action may be taken regarding irregular attendance:

1. Administrative drop from a course or program;
2. Course grade may be lowered;
3. Termination of financial aid assistance;
4. Cancellation of registration;
5. Restriction from extra-curricular activities; or
6. Any other judgments deemed necessary.

Attendance is especially critical in technical programs at NDSCS because learning environments are specialized. Because of the special equipment and facilities needed to provide students with a quality education, it is often impossible to make up work missed due to absences from class.

Therefore, many technical programs have instituted an attendance policy that applies to all courses. The policy is as follows:

1. Any student absent more than 10 percent of a course's total contact hours automatically will have one letter grade deducted from his or her current grade;
2. Any student absent more than 14 percent of a course's total contact hours will have an additional letter grade deducted from his or her current course grade; or
3. Any student absent more than 18 percent of a course's total contact hours will be dropped from the course if that rate is reached before the last day to drop classes. If the 18 percent absence rate is reached after the drop date, the student will receive an "F."

Excused absences are allowed only for the following circumstances:

- Serious illness verified by a medical provider
- Participation in school-sponsored activities which are documented on official college field trip forms and/or notifications
- Mandatory military duty (verified by the campus Veteran Certifying Official)
- Verified family emergencies (verified by the Student Success Center)

Inclement winter weather that does not result in classes being canceled, but still provides hazardous driving conditions for commuters in certain areas, will be dealt with on a case-by-case basis;

Individual departments within the division have the option to impose stricter attendance policies than the above. The division policy sets a minimum standard for the departments to follow or adjust; or

Students are to be referred to the Student Success Center after three consecutive absences.

Students receiving sanctions as a result of this policy can file a written appeal with the Student Success Center. The appeal will be reviewed by the student's advisor, the appropriate department chair (or his or her designee), and the academic counselor.

North Dakota University System Computer & Network Usage Policy

See NDUS policy 1901.2 – Computing Facilities: www.ndus.edu/sbhe-overview/sbhe-policies for information related to acceptable use of college technology at NDSCS. For additional information, call ITS Service Desk at 701-671-3333 or email NDSCS.ServiceDesk@ndscs.edu.

The following is a partial list of unacceptable uses of the NDSCS electronic resources:

- Unauthorized use, sharing, lending or borrowing of an account;
- Using computer services or facilities for purposes other than those for which the account was issued;
- Copying, altering, or destroying the files of another individual without the express permission of that individual;
- Altering system software or hardware configuration, or disrupting or interfering with the delivery or administration of computer resources;
- Misrepresenting oneself as another individual or entity in electronic communications;
- Using the College's network system to download copyright-protected media without permission including, but not limited to, books, music, movies, television programs and games;
- Exceeding college bandwidth limits;
- Sharing or distributing copyright-protected media without authorization of the content owner;
- Abusing or misusing the computer facilities so as to cause damage, to disturb or harass others;
- Using the College's network system to enter obscene material into college-owned computers or send obscene material through the Internet or any other electronic system; and/or
- Any other violation of NDSCS policies governing electronic communications.

Consumer Information

The U.S. Department of Education has mandated that schools must provide currently enrolled students and/or prospective students a list of the information that must be disclosed with instructions for obtaining the full disclosure. The list must be provided annually. The schools are required to list all information that must be disclosed, briefly describe the disclosure information, and explain how students may obtain the disclosure information. Schools must promptly make the information available to any student upon request.

Please see the *NDSCS Student Rights and Responsibilities: A Code of Conduct* for a complete copy of the NDSCS statement regarding the disclosure of U.S. Department of Education mandated Consumer Information.

Grievance Process for Out-of-State Online Students

The North Dakota State College of Science desires to resolve student grievances, complaints and concerns in an expeditious, fair and amicable manner. Students residing outside of the State of North Dakota while attending NDSCS who desire to resolve a grievance should follow the college's Student Complaints and Grievances procedure as found in the *NDSCS Student Rights and Responsibilities: A Code of Conduct* and the *NDSCS Catalog*. However, if an issue cannot be resolved internally, you may file a complaint with your state. The Student Grievance Contact Information for Individual States provides phone numbers, emails and/or links to state education agencies. North Dakota State College of Science is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools.

Role of the North Dakota University System Regarding Grievances

The North Dakota State Board of Higher Education has delegated to North Dakota University System (NDUS) college and university officials the authority and responsibility to resolve student and other complaints. Absent applicable law or policy establishing another remedy, the first step in resolving student or other complaints or grievances is to attempt to resolve the matter directly with the administration of the involved institution under established institution complaint or grievance procedures. Every NDUS institution is required to establish, publish, and enforce policies related to redress of

complaints and grievances. With limited exceptions, a student or other person who contacts the NDUS office regarding complaints regarding NDUS institutions will be referred to college or university officials responsible for resolving those matters.

With the exception of reporting fraud, waste or abuse as noted in NDUS Procedure 513, the NDUS does not review anonymous complaints or matters that are or have been in litigation. Further, matters concerning an individual's grades or examination results are the prerogative of the college/university faculty.

Please see NDUS Procedure 513 at www.ndus.edu/makers/procedures/ndus for a complete copy of this information.

Family Educational Rights & Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) is a federal law designed to protect the privacy of your educational records, to establish the rights you have as a student to inspect and review your education records, and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings.

In accordance with FERPA, NDSCS is notifying you of your rights to:

- be informed about their educational records;
- inspect their educational records;
- request an amendment to their educational records;
- challenge the accuracy of their educational records;
- prevent unauthorized disclosure of their educational records;
- complain to DOE about a violation of FERPA; and
- waive these rights in writing.

Under FERPA, some information in a student's record is considered public (directory information) and may be released without the student's written permission. This information includes: (a) name (all names on record); (b) address (all addresses on record); (c) e-mail address (all electronic addresses on record); (d) phone number (all phone numbers on record); (e) height, weight and photos of athletic team members; (f) major field of study (all declared majors); (g) class level; (h) dates of attendance; (i) enrollment status (full-time or part-time); (j) names of previous institutions attended; (k) participation in officially recognized activities and sports; (l) honors/awards received; (m) degree earned (all degrees earned); (n) date degree earned (dates of all degrees earned); (o) photographic, video or electronic images of students taken and maintained by the institution. Everything else is generally considered to be confidential.

Students have the right to suppress/restrict the release of directory information. When a student chooses to suppress the release of information, that information will not be released to any source, including publications such as telephone directories or other institutional publications that may include President's Honor Roll, enrollment/degree information, etc. To suppress information please contact the Registrar at 701-671-2204 or email NDSCS.StudentRecords@ndscs.edu.

NDSCS may receive inquiries for "directory information" from a variety of sources including, but not limited to prospective employers, other colleges and universities, graduate schools, licensing agencies, government agencies, media, parents, friends and relatives. Students should consider very carefully the consequences of their decision to withhold release of any or all directory information items. NDSCS has no responsibility to contact students for subsequent permission to release directory information after it is restricted. NDSCS will honor student requests to withhold directory information until the student specifically and officially requests the lift of these restrictions.

Educational records are those records which are directly related to a student and maintained by this institution or by a party acting for this institution. These records include any information from which students can be individually identified, and have not been previously defined as public directory information.

Under the laws of FERPA, NDSCS may not disclose information about current or former students nor permit inspection of their educational records without the expressed, written consent of the student. Deceased students' records will also be protected under NDUS Policy 1912. Records of deceased students may be released or disclosed only at the request of a parent, personal representative, or other qualified representative of the student's estate, or pursuant to a court order or subpoena.

Current and former students will be permitted to inspect and review their own educational records, to the exclusion of their parents and/or guardians. This applies to all students enrolled at NDSCS, regardless of age. Specific exemptions do apply to the release of educational records.

These exemptions include the situations that follow:

- Parents of students who are dependents, as defined under tax code, must be permitted to inspect and review the educational records of the student.
- Educational records must be disclosed pursuant to lawfully issued subpoenas or court orders.
- Educational records may be disclosed if knowledge of personal information contained in these education records is, in fact, deemed necessary by institutional personnel to protect the health or safety of the student or other person.
- Upon request, NDSCS discloses educational records without consent to officials of another North Dakota University System institution in which a student seeks or intends to enroll.
- The disclosure is made to College officials with a legitimate educational interest. A College official is a person employed by the College or the North Dakota University System in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company supervising an educational experience (student teaching, clinical experience, practicum, internship, etc.); a person or organization related to credentialing or licensing a student; a person or company with whom the College or North Dakota University System has contracted (such as an attorney, auditor, or collection agent); employees of the North Dakota Attorney General's Office providing legal representation to the College; a person serving on the Board of Higher Education; or a student serving on an official committee, such as a disciplinary or grievance Committee, or assisting another College/University or University System official in performing his or her tasks. A College/University official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.

Additional information regarding FERPA may be found on the NDSCS website (www.NDSCS.edu/FERPA), or contact the Registrar, at 701-671-2204 or via e-mail at NDSCS.StudentRecords@ndscs.edu.

A student may choose to suppress their directory information. If they choose to do so, they may also use the contact number/email address for further information and required documentation.

Students can file complaints with the US Department of Education, Student Privacy Policy Office's complaint process at studentprivacy.ed.gov/file-a-complaint.

DISTANCE EDUCATION

General Information

Distance Education at NDSCS utilizes technology and innovative delivery methods to support faculty and students to ensure robust distance learning online. Online courses appear in course listings alongside courses offered in at NDSCS in Wahpeton and at NDSCS-Fargo.

NDSCS-Fargo

NDSCS provides on-site delivery of the following academic options at NDSCS-Fargo.

- Business Management (certificate, A.A.S. degree)
 - Administration and Finance (A.A.S. degree)
 - Entrepreneurship (certificate)
 - Finance (certificate)
 - Management/Supervision (certificate)
 - Marketing, Sales and Hospitality Services (A.A.S. degree)
 - Restaurant Management (third-year option) A.A.S. degree)
 - Sales (certificate)
- Emergency Medical Services (EMS) (certificate, A.A.S. degree)
 - Emergency Medical Technician (EMT) (certificate)**
 - Paramedic Technology (certificate, A.A.S. degree)**
- Information and Communications Technology (certificate, A.A.S. degree)
 - Information Technology Support (certificate, A.A.S. degree)
 - Information Systems Administrator (A.A.S. degree)
 - IT Forensics and Security (certificate)
 - Software Coding (certificate)
 - Software Engineering (A.A.S. degree)
 - Web Design (certificate)
 - Web Developer (A.A.S. degree)
- Liberal Arts (A.A., A.S. degree)
 - Business Transfer (A.A. degree)
 - Computer Science Transfer (A.S. degree)
 - Criminal Justice - Transfer (A.A. degree)
 - Education Transfer (A.A. degree)
 - General Liberal Arts (A.A., A.S. degree)
 - Management Information Systems Transfer (A.S. degree)
 - Paralegal Transfer (A.A. degree)
- Practical Nursing (A.A.S. degree)***
- Technical Studies (certificate, diploma, A.A.S. degree)
 - Journeyworker Track (certificate, diploma, A.A.S. degree)
- Welding Technology (certificate, diploma, A.A.S. degree)

See the Academic Programs section of the *NDSCS Catalog* for more information on NDSCS-Fargo based academic options.

*NDSCS-Fargo is located at 1305 19th Avenue North in Fargo, just north of the FargoDome and one mile east of Hector International Airport and Interstate 29. This classroom facility includes a test center, computer labs, science labs and general classrooms. NDSCS partners with North Dakota State University (NDSU) to allow NDSCS-Fargo students (taking at least six credits) to live on campus at NDSU. The NDSCS-Fargo telephone number is 701-231-6900. More information can be found at www.NDSCS.edu.

**NDSCS partners with Sanford Health EMS Education/F-M Ambulance Service to offer Emergency Medical Services (EMS) degrees. Both certificate and A.A.S. degrees are available.

***Practical Nursing cohorts are offered on a periodic basis depending on funding, student interest, and needs of area facilities.

NDSCS Online & Remote Delivery

NDSCS offers the following academic emphases that can be completed entirely by internet-based delivery.

- Business Management (A.A.S. degree)
 - Business Technology Management (A.A.S. degree) (third-year option)
 - Marketing, Sales and Hospitality Services (A.A.S. degree)
- General Liberal Arts (A.A. degree)
- Health Information (certificate, A.A.S. degree)
 - Health Information Technician (A.A.S. degree)
 - Medical Coding (certificate)
- Information and Communications Technology (certificate, A.A.S. degree)
 - Software Coding (certificate)
 - Software Engineering (A.A.S. degree)
 - Web Design (certificate)
 - Web Developer (A.A.S. degree)
- Pharmacy Technician (certificate, A.A.S. degree) (some classes have face-to-face components)
Note for online students: Specific meeting days and times are required for remote students to attend online.

For more information on these academic options, please see the *NDSCS Catalog* or visit the website at www.NDSCS.edu.

For additional information about online and other remote delivery programs and courses, co-/prerequisites, course descriptions, technical requirements or college services, visit www.NDSCS.edu or call the Distance Education office at 1-800-342-4325, ext. 3-2347.

Registering for Online Courses

Registration can be completed entirely online by logging into CampusConnection at www.NDSCS.edu. Students having any problems registering should call Student Success at 701-671-3000.

Tuition & Fees for Online Courses

In addition to the regular tuition and fees, online courses are charged an Online Access Fee per credit. Please see the **Tuitions and Fees** section of this catalog for amounts.

Buying Textbooks

Required books for online courses may be purchased from the NDSCS Bookstore at www.NDSCSbookstore.com.

Online Attendance

Regular online attendance is expected of each student. Attendance is evidenced by weekly completion of assignments and/or participation in online discussions. An online student who does not regularly attend online classes for a period of seven consecutive days may be dropped from the course. Efforts to contact inactive students are attempted; however, if there is no response from the student and inactivity continues, a drop will be enacted. See the complete **Attendance Policy** in the Policies and Procedures section of the *NDSCS Catalog*.

State Authorization for Out-of-State Students

State authorization requirements vary from state to state. To determine if NDSCS is authorized to offer courses in a particular state, please go to www.NDSCS.edu/Online and click on Out-of-State Students.

Institutional Registration in Other States

Selected states may require registration by various government entities within their state. Such states often require disclosure of the status within their state.

DIVISION FOR WORKFORCE AFFAIRS

General Information

The NDSCS Division for Workforce Affairs is focused on providing comprehensive solutions to meet the workforce needs of both North Dakota and the Red River Valley. We provide customized training for business and organizations, as well as open-enrollment training for individuals. We also offer apprenticeship programs and skills classes for the under/unemployed and New American populations. The three areas that make up the Division for Workforce Affairs include TrainND, ApprenticeshipND and SkillsND.

TrainND

TrainND SE offers courses and customized programs for many industries. More importantly, we make our training fit your organization and your needs.

We will:

- **Train** at NDSCS-Wahpeton, NDSCS-Fargo, at your site or virtually.
- **Customize** every program to address your specific challenges and deliver exactly the experience your employees need.
- **Tailor** courseware to deliver only topics you select.
- **Maximize** cost effectiveness by training on multiple topics in a single program.
- **Deliver** private training on any of the topics we regularly offer.

Our open enrollment option is ideal for individual(s) seeking training regardless if they are representing a company/organization, self-employed or an individual seeking skills for their personal benefit.

As a member of the TrainND statewide workforce training system, the Division for Workforce Affairs can link you to state and region-wide networks of professionals and resources for the exact training you need to become more competitive.

For a comprehensive list of our course offerings, visit our website www.NDSCS.edu/Training.

ApprenticeshipND

ApprenticeshipND provides opportunities for workers seeking high-skilled jobs with competitive salaries, and employers seeking to build a highly qualified workforce. Registered apprenticeship programs are a proven solution for preparing workers for in-demand occupations and meeting the business needs for a highly skilled workforce that is innovative and adaptive. ApprenticeshipND currently offers Registered Apprenticeship Programs in Emergency Medical Services, Operating Engineer, Diesel Mechanic Automotive Technician, Certified Medication Aide, Certified Nurse Aide and Construction Equipment Mechanics, with more programs currently under development. ApprenticeshipND provides related technical instruction to apprentices throughout the United States for more than 100 courses in the fields of skilled trades, and pharmacy technician.

ApprenticeshipND has its main office at NDSCS-Fargo and an office at NDSCS-Wahpeton. For more information, please visit www.NDSCS.edu/ApprenticeshipND.

SkillsND

The purpose of SkillsND is to provide job skills training to under/unemployed and New Americans for full-time jobs in nursing assistant or skilled trades-construction and manufacturing. Located at NDSCS-Fargo, SkillsND serves low income, working adults needing a shorter-term program that can lead to immediate improvement in quality of life. Job skills training emphasizes language and vocabulary of the workplace combined with communication, job search training, and workforce expectations. Participants in the program earn higher wages and have increased math and English scores. Funded through the generous support of local, state and regional public and private agencies, SkillsND has operated since 2002 and trained over a 1,000 people. SkillsND helps contribute to a strong workforce. For more information, please visit www.NDSCS.edu/SkillsND.

STUDENT SERVICES

Library Resources & Services

The Mildred Johnson Library offers a plethora of resources available online 24/7. The Library offers a supportive environment with collaborative workstations, study rooms, FitDesks, cozy couches and many other amenities to serve our students on their collegiate path.

The Library lends books, DVDs, CDs, 3-D models and board games to current NDSCS campus community members. If an item of interest is not owned by the Library, a request can be made to purchase the material.

In addition to the Library's own collection, we can submit interlibrary loan requests for most books, DVDs and articles from other North Dakota academic libraries.

Computers, printers and scanners are available for in-house use. In addition, wireless access is available for those who bring their own laptops or other devices.

Access to thousands of eBooks and hundreds of thousands of articles from magazines, journals and newspapers are provided through electronic resources found on the Library's RESOURCES web page. These resources are available to current students, faculty and staff while on- and off-campus.

Faculty may request library orientation sessions to prepare students for library research specific to their curriculum and students can expect to attend an orientation session at some point during their academic career. Faculty and staff members are also welcome to request NDSCS archive collection services to bring the history of the College to life.

Complete Library information is available at www.NDSCS.edu/Library, calling 701-671-2618, or by emailing NDSCS.Library@ndscs.edu. You can also call the Customer Service Desk ext. 3-2618.

Student Success Center

The Student Success Center is a one-stop place for students to go for assistance or concerns with a variety of academic resources to support our students as they work to achieve their academic goals.

ACCESSIBILITY SERVICES

Accessibility Services office provides access to accommodations based on a student's documented disability. Individuals with physical disabilities, hearing or visual impairments, speech or language impairments, learning disabilities or other health-related impairments may be eligible for accommodations.

To receive services, a student with a disability must contact the accessibility support office coordinator to:

- Self-disclose disability;
- Fill out the Application for Services and Release of Information forms;
- Provide appropriate documentation regarding disability; and
- Request services and/or accommodations.

The accessibility coordinator will determine eligibility for accommodations and send an eligibility notice to students. If a student with a disability visits campus and has access needs, contact the accessibility coordinator. The accessibility services coordinator works with Academic Services, counseling services, housing, dining services and instructors to ensure equal access to academic programs and student life.

ACADEMIC GUIDANCE & SUPPORT

- Provide guidance in choosing a major and/or career path
- Help with planning a class schedule and course registration
- Provide current information about course requirements (prerequisites, assessment exams, and deadlines)
- Follow-up and support students needing/requesting assistance or are struggling academically
- Refer students to additional campus and community services
- Administration of Career Ready Internship program

CAREER SERVICES

- Assistance with creating connections with employers
- Annual Career Fair (for all NDSCS students, 200+ employers visit campus)
- Help with job search skills (mock interviews, resume writing, etc.)
- Facilitation of Cooperative Education program
- Exclusive access to online job-posting site
- Coordination of student sponsorship programs

CAREER EXPLORATION & COUNSELING

Assist students with exploring occupations and selecting an academic program that best fits with their strengths and abilities.

NEW STUDENT ORIENTATION

Orientation may be face-to-face or online, depending on where you are taking the majority of your classes. Orientation is mandatory for all new students.

TEST CENTER

The Test Center provides proctoring for online testing, ACCUPLACER placement testing, and an alternative testing site for students who qualify. More information can be found at www.NDSCS.edu/TestCenter.

TUTORING

- Free tutoring to all NDSCS students
- Individual and small group study sessions
- Tutor schedules are online at www.NDSCS.edu/Tutoring

Wahpeton

Tutoring is located in the Student Success Center in Old Main 130.

Fargo

Tutoring is located in Room 147A.

Requests for Tutors

Requests for tutors in areas not currently offered, should be directed to the student support coordinator at 701-671-2278. Students wishing to gain employment as a tutor should contact the student support coordinator. Tutoring requests are welcome, but not guaranteed and are based on student need, ability to find qualified tutors, and scheduling considerations.

Online

SMARTHINKING provides live, web-based tutoring in a variety of subjects. This service supplements our existing academic support services by offering real-time online tutoring and homework help for core courses and skills up to 24 hours a day, seven days a week. Students can access SMARTHINKING through their NDSCS Online account.

VETERANS AFFAIRS (VA SCHOOL CERTIFYING OFFICIAL)

- Directs students to VA education application information
- Certifies and updates student enrollment with the VA
- Serves as a liaison to the VA (related to education benefits)

Student Activities, Organizations & Volunteer Opportunities

Students are encouraged to participate in activities outside the classroom. Choosing to become involved early can greatly enhance your college experience. Students can participate in entertainment events like FREE movie nights, dances, special celebratory meals and more. Students can also attend educational and artistic events such as FREE paint nights, concerts, and special speakers. NDSCS also has intramurals, student leadership opportunities and over 30 clubs and organizations to choose from. To learn about your involvement opportunities, visit www.NDSCS.edu/StudentLife.

ATHLETICS

- **Intercollegiate Athletics** – Intercollegiate athletic competition for women includes volleyball, basketball, and softball. Intercollegiate competition for men includes football, basketball, and baseball.
- **Intramurals** – The Intramurals program for all interested students offers competition in various activities, such as basketball, softball, flag football, volleyball, and dodge ball etc.
- **Clair T. Blikre Activities Center** – Student are able to access the health and wellness activities/facilities within the Blikre Activities Center for free. Activities include swimming, racquetball, jogging, weightlifting, basketball and volleyball.

CLUBS & ORGANIZATIONS

There are over 30 student run clubs and organizations. Go to www.NDSCS.edu/Clubs for a complete listing of clubs and advisors.

- **Social Life** – Social life includes movies, dances, seasonal activities, plays, educational speakers, concerts, organization events, department clubs and various other special events. Students are able to start clubs/organizations - consult with NDSCS Student Life for more information.

STUDENT LEADERSHIP

- **Campus Activities Board** – Students serving on the Campus Activities Board (CAB) gain valuable leadership skills by planning events and activities to enrich the student experience at NDSCS. With a welcoming and enthusiastic approach, CAB members seek to create new engagement opportunities while also celebrating longstanding traditions, where students meet new people and have fun.

Campus Activities Board responsibilities:

- Meet weekly during the academic year to plan and discuss campus activities
- Brainstorm and share event ideas with fellow CAB members
- Implement event planning and promotional tasks
- Introduce professional acts, such as comedians, hypnotists and musicians
- Track student attendance at events
- Communicate event information with students
- Have the opportunity to take on additional leadership responsibilities within CAB

- **NDSCS Ambassadors** – NDSCS Ambassadors help foster a caring community for our students, faculty and staff while serving as a resource and familiar contact for visitors who come to campus for both NDSCS sponsored and non-NDSCS sponsored events.

Ambassador responsibilities:

- Monthly meetings
- Assist with various events and activities during Homecoming Week
- Assist with implementation and communication during the Career Fair
- Attend and participate in activities involved in the success of the annual the DREAMS Auction

- **Student Senate** – The Student Senate represents and serves the student body to enhance students' college experience through the empowerment of all students. Student Senate is responsible for chartering new student clubs, awarding discretionary funding to student clubs and organizations, assisting with funding and hosting student programs and events, and representing student interests across campus.

Student Senate responsibilities:

- Meets weekly during the academic year to discuss college updates and weigh in on important decisions regarding students and the institution
- Participates and serves on a variety of NDSCS and Student Senate committees that can improve the student experience such as Parking Committee, Diversity and Equity Team, and more
- Plans and implements the annual Agawase Day picnic
- Consistently communicates with fellow students and shares new initiatives and ideas with the Senate
- Actively participates in the North Dakota Student Association (NDSA)

- **Resident Assistants** – Resident Assistants (RAs) are student employees who support NDSCS living and learning communities by fostering welcoming and cooperative environments that contributes to student academic success and personal growth. Resident Assistants provide educational and recreational programming, information, guidance and support.

Resident Assistant responsibilities:

- Support fellow students by assisting students with questions
- Develop community through a variety of methods
- Serve as residential hall on-duty staff to meet the immediate needs of the community
- Plan building-wide events
- Assist with safety and security
- Perform administrative tasks

- **Wildcat Welcome Team** – Wildcat Welcome Team (WWT) members serve as resources and familiar contacts for new students who are making the transition to the diverse academic and social culture of NDSCS. WWT members are some of the first contacts incoming students and their families will have at NDSCS and will assist in creating a positive experience as an introduction to becoming a Wildcat.

Wildcat Welcome Team responsibilities:

- 9-day commitment in August
- 3 days of training
- Welcome Week events/activities (Saturday-Thursday)

To learn more about any of the above student leadership opportunities, please visit www.NDSCS.edu/StudentLeadership.

SPIRITUAL ORGANIZATIONS

- **Churches** – Churches of various denominations are represented in Wahpeton and Breckenridge. All students are welcome to attend the denominations of their choice.
- **Faith Focused Club** – Campus Crusade for Christ (CRU) is a faith-focused club offering spiritual support for students.

To learn more, visit www.NDSCS.edu/Clubs.

FINE ARTS

- **Instrumental Music** – Students interested may join the Concert Band with the option of auditioning for the Jazz Band. Students will participate in various ensembles and have performance and touring opportunities throughout the year. Students may join either Fall or Spring semesters. NDSCS has many school instruments that can be borrowed. Private Lessons are also available on all band instruments, piano, and guitar. A wellness credit is awarded for each group and scholarships are available.
- **Vocal Music** – Students interested may join the Concert Choir with the option of auditioning for the Wildcat Singers. Students will participate in various ensembles and have performance touring opportunities throughout the year. Students may join either Fall or Spring semesters. Private individual lessons and class voice for ensembles are also available for a credit. A wellness credit is awarded for each group and scholarships are available.
- **Drama** – Students may enroll in theater classes at NDSCS. The Art of Stagecraft would include building and painting set as well as working back stage on productions. The Theater Practicum class would allow a student to gain experience on stage in various situations and perform in a play. A wellness credit is awarded for each class.

COMMUNITY

- **Volunteer Internship Course (PSYC 290 and 291)** – NDSCS students have the opportunity to volunteer in agencies, organizations, healthcare facilities, and/or educational institutions to gain experience in civic duty, volunteerism, and the assistance of those in need. Students may also volunteer at a career-related site to evaluate and validate their vocational choice. The internship site may be in the Wahpeton-Breckenridge area, or in another community of the student's choice. All NDSCS students are eligible to participate and receive academic credit. Contact the Social and Behavioral Sciences Department chair at 701-671-2364 for more information.
- **Service Learning Opportunities** – For a full list of regularly updated opportunities in the area to serve the community, go to www.NDSCS.edu/Volunteer.

Campus Activity Facilities

MUSIC, DRAMA & ALUMNI – ELLA STERN & HARRY STERN CULTURAL CENTER FACILITIES

The privately-funded Ella Stern and Harry Stern Cultural Center has been designed specifically for the practice, performance and enjoyment of the fine arts. As a part of the full collegiate atmosphere, these music and drama facilities are centrally located at NDSCS Wahpeton. The 35,000 sq. ft. building features a 500 seat, semi-circular open theater auditorium using the latest sound and lighting technology. Public performances of college and community music and drama events often draw large audiences from the campus and community.

ATHLETIC & RECREATION FACILITIES – CLAIR T. BLIKRE ACTIVITIES CENTER (BAC)

The Clair T. Blikre Activities Center houses the Ed Werre Arena, home for men's and women's basketball teams and women's volleyball. Other facilities include Beck Gym, Shorma Family Gym/Weight Room, wellness center, classrooms, swimming pool, two racquetball courts, and an indoor eight-lane track.

Staff offices for intramural, varsity athletics and physical education are also located in the building. Located adjacent to the Blikre Activities Center is the Gayle Miller softball complex and the Frank Vertin football complex along with recreation athletic facilities offering a lighted football field, one softball diamond and four practice football fields.

Recreation and intramural athletics are among the most popular activities for students. Varsity athletic teams compete within the National Junior College Athletic Association and qualify for national tournaments through NJCAA Region XIII competition.

On-Campus Living Policy

All first-year students are **REQUIRED** to live on campus, unless the student meets one of the following criteria:

- Is transferring in with 24 or more college credits. Dual credits, PSEO or AP credits completed while in high school do not qualify.
- Is 21 years of age or older.
- Will be enrolled in nine or fewer credit hours during both the fall and spring semesters of the academic year.
- Lives with a parent or legal guardian within a 50 mile radius of NDSCS.
- Is married or has primary custody of a minor child.
- Is enrolled in online classes only.
- Has extenuating circumstances.

Please see www.NDSCS.edu/Residential-Life for more information regarding the on-campus living policy.

On-Campus Living Facilities

Campus living is available at the NDSCS-Wahpeton campus. NDSCS has six residence halls that offer a variety of supportive and engaging living environments.

The campus apartments and townhomes include options for family, roommates and single student living. Students must meet specific eligibility requirements to live in the campus apartments. Students who transition from renting with a roommate to renting as a single, will assume responsibility for the full rental rate.

Please visit www.NDSCS.edu/Residential-Life for photos, videos, rates and a detailed list of amenities for each hall and apartment complex.

Campus Community Facilities

HEKTNER STUDENT CENTER

The Hektner Student Center is the community center for NDSCS, hosting the major portion of social activities and numerous recreational activities, in addition to student government and organizations. The facility includes the Student Life/Customer Service Desk, reception and lounge areas, Wild Grounds Café (coffee shop and café), Flickertail Dining Room, a computer lab, TV lounge, eSports, meeting rooms, a game room including pool tables, The Alley (a student-sponsored venue), Information Technology Services, NDSCS Police, the Bookstore and Mail Center, and vending machines.

BOOKSTORE

The Bookstore follows the latest textbook trends to reduce course material costs for students by offering new, used, rental, e-books, and inclusive access materials. Textbook buyback is offered at the end of each term in-store and online. Through partnerships, the Bookstore sells high-quality, name-brand tools at a discounted price. Additionally, the NDSCS Bookstore sells Wildcat apparel, school supplies, and giftware.

Mail and shipping services are also provided within the Bookstore. Services include mailboxes, daily incoming and outgoing USPS mail, package delivery, and access to FedEx, UPS, and USPS shipping services.

The Bookstore is located in the Hektner Student Center on the Wahpeton Campus, and NDSCS-Fargo in Room 155, or shop online at anytime at www.NDSCSbookstore.com.

CUSTOMER SERVICE DESK & STUDENT LIFE

The Customer Service Desk located in Hektner Student Center serves students, faculty, and staff as our College's central information center and Student Life office. For more information on services offered, visit www.NDSCS.edu/CustomerService and www.NDSCS.edu/StudentLife.

DINING SERVICES

Flickertail Dining Room – Located on the second floor of the Hektner Student Center.

- Open seven days a week (except November Holiday break, Winter break, Spring Break, April Holiday break)
- All you care to eat, unlimited entry (must scan each time you enter)
- Offer hot entrees, salad bar, deli bar, waffles, ice cream, dessert, cereal, beverages, specialty bar
- Accepts dining plan, Wildcat Bucks, Dining Dollars, credit card and cash

Wild Grounds Café and Coffee Shop

- Open Monday-Friday
- Quick service restaurant and coffee shop
- Daily luncheon special (dining plan can be used)
- Grab-n-go options (dining plan can be used)
- Accepts Wildcat Bucks, Dining Dollars, credit card and cash

Dining Services is completely self-funded with the income remaining within NDSCS. Additional information may be found at www.NDSCS.edu/Dining.

NDSCS-Fargo is served by the Wild Grounds Coffee Shop.

INFORMATION TECHNOLOGY SERVICES (ITS)

The walk-up ITS Service Desk is located in the computer lab near the bookstore in the north end of the Hektner Student Center. The ITS Service Desk provides assistance with passwords, email, Wi-Fi access and Microsoft Office support/download. During business hours students can call the ITS Service Desk at 701-671-3333 (3-3333 from a campus phone) or email NDSCS.ServiceDesk@ndscs.edu. After hours assistance is available for password changes and a limited range of technical issues from the North Dakota University System Help Desk at 866-457-6387.

PARKING

Students are required to register vehicles with either the NDSCS Police Department on the Wahpeton campus or in Room 183H at the Fargo location to obtain a parking permit. A current and valid NDSCS parking permit must be purchased and appropriately displayed on all vehicles parked anywhere on the Wahpeton and Fargo NDSCS locations. Parking rules and permit information can be found on the NDSCS website at www.NDSCS.edu/Parking. All questions relating to vehicles and parking should be directed to NDSCS police at 701-671-2233.

COMMUNITY CHILD CARE OPTIONS

For students or families that may be seeking child care, please see the community child care options below:

- Child Care Aware of North Dakota: www.ndchildcare.org
- Parent Aware (Minnesota): www.parentaware.org

ACADEMIC PROGRAM MATRIX

Academic Programs	AA	AS	AAS	ASN	Diploma	Certificate
Agriculture			X			X
Ag Business			*			
Agronomy			*			
Animal Science			*			
Farm Management			*			
Meat Processing (Certificate in Technical Studies)						*
Precision Agriculture			*			
Ranch Management			*			
Architectural Drafting and Estimating Technology			X			
Auto Body Repair and Refinishing Technology			X		X	
Automotive Technology			X		X	
Automotive and Diesel Master Technician (third-year option)			X			
Autonomous Systems Technology (AST)						X
Building Construction Technology			X			
Business Management			X			X
Administration and Finance			*			
Business Technology Management (third-year option)			*			
Marketing, Sales and Hospitality Services			*			
Restaurant Management (third-year option)			*			
Business Management - Entrepreneurship - Finance - Management/Supervision - Sales						* * * *
Caterpillar Dealer Service Technician			X			
Construction Management Technology			X			
Culinary Arts			X		X	
Chef Training and Management Technology			*		*	
Restaurant Management (third-year option)			*			
Dental Assisting			X			X
Dental Hygiene			X			
Diesel Technology			X		X	
General Diesel			*		*	
Case IH			*			
Komatsu			*			
Automotive and Diesel Master Technician (third-year option)			X			

Academic Programs	AA	AS	AAS	ASN	Diploma	Certificate
Electrical Technology			X			
Electrical Construction			*			
Industrial Electrical			*			
Electrical Master Technician (third-year option)			*			
Emergency Medical Services (EMS)			X			X
Emergency Medical Technician						*
Paramedic Technology			*			*
Health Information			X			X
Health Information Technician			*			
Medical Coding						*
Heating, Ventilating, Air Conditioning and Refrigeration Technology			X			X
Information and Communications Technology			X			X
Information Systems Administrator			*			
Information Technology Support						*
IT Forensics and Security						*
Software Coding ¹						*
Software Engineering			*			
Web Design						*
Web Developer			*			
John Deere Tech			X			
Land Surveying and Civil Engineering Technology			X			
Liberal Arts Transfer Curriculum Plans	X	X				
Agriculture		*				
Biotechnology		*				
Business	*					
Chemistry		*				
Chiropractic		*				
Clinical Laboratory Science		*				
Computer Science		*				
Criminal Justice - Transfer	*					
Dental		*				
Early Childhood Education	*					
Education	*					
Elementary Education	*					
Engineering		*				
General Liberal Arts	*	*				
General Studies		*				
Health, Physical Education and Recreation	*					

Academic Programs	AA	AS	AAS	ASN	Diploma	Certificate
Law	*					
Management Information Systems		*				
Mathematics		*				
Medical		*				
Music	*					
Natural Science		*				
Nursing		*				
Optometry		*				
Paralegal	*					
Pharmacy		*				
Physical Science		*				
Psychology	*					
Social Work	*					
Wildlife Management		*				
Mechanical Systems			X			
Nursing						
Practical Nursing (LPN)			X			
Registered Nursing (A.S.N.-RN)				X		
Registered Nursing (A.A.S.-RN)			X			
Occupational Therapy Assistant			X			
Pharmacy Technician			X			X
Plumbing						X
Powersports Technology			X		X	
Precision Machining Technology			X		X	X
Robotics, Automation and Mechatronics Technology						
RAMT-General Technician			X			
RAMT-Mechatronics Engineering Technology			X			
Technical Studies			X		X	X
Journeyworker Track			*			
Meat Processing (Certificate in Technical Studies)						*
Unmanned Aircraft Systems (UAS)						X
Welding Technology			X		X	X

X = degree or award * = emphasis areas

¹This curriculum is currently pending approval for Title IV (Financial Aid) funding by the U.S. Department of Education.

5/27/21

Agriculture

Ag Business

► Contact Information

Craig Zimprich, department chair
 Craig.A.Zimprich@ndscs.edu
 701-671-2249
 Tech Center 49

► Delivery Methods

Face-to-Face: Wahpeton

Students who enroll in the Ag Business option in the Agriculture Department may pursue careers in agriculture sales, management, USDA, banking, and other careers. Students will find many challenging courses. Course work will include basic accounting principles, agriculture economics, management, sales, and fundamental agriculture courses.

Students will have the opportunity to apply concepts learned through hands-on activities at the NDSCS Kosel Family Agriculture Land Lab and other classroom and laboratory activities. The Land Lab is a 90-acre demonstration farm operated by the Agriculture Department, students, and industry partners.

Spring semester concludes mid-April each year to allow students to begin their internship experience. Students enrolled in this option will complete a 400-hour paid internship at a career related training facility during the summer between their first and second year of instruction.

Our philosophy statement is: "The Agriculture Department provides education for the present and future by incorporating leadership and career development, best management practices in crop and livestock production, technology, natural resources, problem solving, internships, and communication through a diverse program."

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Craig Zimprich, department chair, at 701-671-2249.

Course Code	Course Title	Credits
ACCT 102	Fundamentals of Accounting	3
ACCT 118	Applied Accounting	3
AGEC 142	Agribusiness Internship Orientation I	1
AGEC 143	Agribusiness Internship Orientation II	1
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
AGEC 246	Introduction to Agricultural Finance	3
AGEC 248	Introduction to Risk Management and Insurance	3
AGEC 250	Agribusiness Sales	3
AGRI 135	Applied Math	2
AGRI 197	Internship	3
AGRI 297	Internship	1
BOTE 108	Business Mathematics	3
PAG 275	Introduction to Precision Agriculture	3
PLSC 225	Principles of Crop Production	3
Agriculture and Business Electives		10
(1 course must have an ANSC prefix)		

Related/General Education Courses

COMM 110	Fundamentals of Public Speaking	3
ECON 201	Principles of Microeconomics	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
PLSC 110	World Food Crops	3
SOIL 210	Introduction to Soil Science	3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives (non ECON)		2

Total Required Credits

69

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer science, and English. Courses that develop communication skills are important.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Agriculture with an emphasis in Ag Business.

Revised: May 2022



Agriculture

Agronomy

► Contact Information

Dr. Anissa Hoffman, associate professor
Anissa.Hoffman@ndscs.edu
701-671-2252
Tech Center 46

► Delivery Methods

Face-to-Face: Wahpeton

The Agronomy curriculum is designed to provide instruction in crop production, soils, agriculture sales, field crop scouting, and business management. Cutting edge agricultural technology is infused into this curriculum wherever possible.

Students will have the opportunity to apply concepts learned through hands-on activities at the NDSCS Kosel Family Agriculture Land Lab and other classroom and laboratory activities. The Land Lab is a 90-acre demonstration farm operated by the Agriculture Department, students, and industry partners.

Spring semester concludes mid-April each year to allow students to begin their internship experience. Students enrolled in this option will complete a 400-hour paid internship at a career related training facility during the summer between their first and second year of instruction.

Students graduating in Agronomy are prepared to find employment in seed sales, fertilizer sales, plant protection, crop consulting or other agronomic careers. The regional employment outlook continues to be very positive for graduates.

Our philosophy statement is: "The Agriculture Department provides education for the present and future by incorporating leadership and career development, best management practices in crop and livestock production, technology, natural resources, problem solving, internships, and communication through a diverse program."

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Craig Zimprich, department chair, at 701-671-2249.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer science, and English. Courses that develop communication skills are important.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Agriculture with an emphasis in Agronomy.

Course Code	Course Title	Credits
AGEC 142	Agribusiness Internship Orientation I	1
AGEC 143	Agribusiness Internship Orientation II	1
AGEC 242	Introduction to Agricultural Management	4
AGEC 250	Agribusiness Sales	3
AGRI 197	Internship	3
AGRI 297	Internship	1
PAG 275	Introduction to Precision Agriculture	3
PLSC 115	Crop Technologies	2
PLSC 138	Agronomic Technologies	3
PLSC 215	Weed Identification	1
PLSC 224	Introduction to Crop Protection	3
PLSC 225	Principles of Crop Production	3
PLSC 235	Field Scouting Techniques	3
PLSC 235L	Field Scouting Techniques Lab	1
SOIL 222	Soil Fertility and Fertilizers	3
Any Agriculture Electives		11
(1 course must be an ANSC prefix)		

Related/General Education Courses

AGRI 135	Applied Math	2
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
MATH 120	Basic Mathematics I	2
PLSC 110	World Food Crops	3
SOIL 210	Introduction to Soil Science	3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4

Total Required Credits **69**

Revised: May 2022

Agriculture

Animal Science

► Contact Information

Craig Zimprich, department chair
 Craig.A.Zimprich@ndscs.edu
 701-671-2249
 Tech Center 49

► Delivery Methods

Face-to-Face: Wahpeton

Students who enroll in the Animal Science option in the Agriculture Department can choose between careers in diversified crop and livestock production, sales of livestock feed and supplies, and employment in a livestock operation. Students will find many challenging courses. These may include livestock production, feeds and feeding, livestock health management, range management, and advanced production and nutrition courses.

Students will have the opportunity to apply concepts learned through hands-on activities at the NDSCS Kosel Family Agriculture Land Lab and other classroom and laboratory activities. The Land Lab is a 90-acre demonstration farm operated by the Agriculture Department, students, and industry partners.

Spring semester concludes mid-April each year to allow students to begin their internship experience. Students enrolled in this option will complete a 400-hour paid internship at a career related training facility during the summer between their first and second year of instruction.

Our philosophy statement is: "The Agriculture Department provides education for the present and future by incorporating leadership and career development, best management practices in crop and livestock production, mechanics, technology, natural resources, problem solving, internships, and communication through a diverse program."

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Craig Zimprich, department chair, at 701-671-2249.

Course Code	Course Title	Credits
AGEC 142	Agribusiness Internship Orientation I	1
AGEC 143	Agribusiness Internship Orientation II	1
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
AGEC 250	Agribusiness Sales	3
ANSC 114	Introduction to Animal Sciences	3
ANSC 116	Animal Reproduction	3
ANSC 118	Livestock Health Management	3
ANSC 123	Feeds and Feeding	3
ANSC 220	Livestock Production	3
ANSC 224	Applied Livestock Feeding	3
ANSC 236	Introduction to Range Management	2
AGRI 197	Internship	3
AGRI 297	Internship	1
PAG 275	Introduction to Precision Agriculture	3

Related/General Education Courses

AGRI 135	Applied Math	2
MATH 120	Basic Mathematics I	2
ENGL 110	College Composition I	3
English/Communication elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
PLSC 110	World Food Crops	3
SOIL 210	Introduction to Soil Science	3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Agriculture Electives		7

Total Required Credits **69**

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer science, and English. Courses that develop communication skills are important.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Agriculture with an emphasis in Animal Science.

Revised: May 2022



Agriculture

Farm Management

► Contact Information

Sheldon Schmiess, associate professor
Sheldon.Schmiess@ndscs.edu
701-671-2273
Tech Center 44

► Delivery Methods

Face-to-Face: Wahpeton

The Farm Management curriculum is designed to provide the student returning to the family farm or entering a career in production agriculture with the management skills necessary to be successful.

Students will have the opportunity to apply concepts learned through hands-on activities at the NDSCS Kosel Family Agriculture Land Lab and other classroom and laboratory activities. The Land Lab is a 90-acre demonstration farm operated by the Agriculture Department, students, and industry partners.

Classroom curriculum focuses on farm management topics such as financial management, record keeping, commodity marketing, precision agriculture, crop production, plant science, and soil fertility. Courses incorporate current technologies enabling students to acquire the skills necessary to manage and operate today's farms.

Spring semester classes conclude mid-April each year allowing students to return to the home farm to assist with spring planting. During the summer, students will complete a farm record keeping internship for a hypothetical farm similar to their home farm. They will be required to collect data from their home farm such as crop mix, seed, fertilizer, chemical costs, real estate taxes, crop yields, prices received for commodities, and land costs. When they return in the fall, this data will then be plugged into the hypothetical farm and analyzed using computerized software. Each student should then have a good understanding of what a typical year might look like on their home farm.

For students who decide to continue their education, the majority of program credits earned at NDSCS will transfer into a bachelor's degree program.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Craig Zimprich, department chair, at 701-671-2249.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer sciences, and English. Courses that develop communication skills are important.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Agriculture with an emphasis in Farm Management.

Course Code	Course Title	Credits
AGEC 145	Farm Records	3
AGEC 197	Farm and Ranch Management Internship	4
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
AGEC 246	Introduction to Agricultural Finance	3
AGEC 248	Introduction to Risk Management and Insurance	3
AGEC 247	Agricultural Land Resource Acquisition	2
AGEC 297	Farm and Ranch Management Internship	2
PAG 275	Introduction to Precision Agriculture	3
PLSC 225	Principles of Crop Production	3
SOIL 222	Soil Fertility and Fertilizers	3
Any Agriculture Electives		11
(1 course must be an ANSC prefix)		

Related/General Education Courses

AGRI 135	Applied Math	2
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
MATH 120	Basic Mathematics I	2
MFGT 110	Industrial Shop Practices	2
PLSC 110	World Food Crops	3
SOIL 210	Introduction to Soil Science	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4

Total Required Credits **69**

Revised: May 2022

Meat Processing - Certificate

► Contact Information

Craig Zimprich, department chair
 Craig.A.Zimprich@ndscs.edu
 701-671-2249
 Tech Center 49

► Delivery Methods

Face-to-Face: Wahpeton

Students who enroll in the Meat Processing certificate program at NDSCS will have the opportunity to gain skills in a high demand career field. This program will be taught through both North Dakota State College of Science and North Dakota State University in Fargo, ND.

Students will get the chance to develop skills through hands-on training at the NDSU meats lab in Fargo.

Whether a student is adding credentials to a culinary arts degree, has a desire to start their own business or work for an established business the internship program for the meat cutting certificate will help polish the skills learned in classes through training in a paid work setting.

Our philosophy statement is: "The Agriculture Department provides education for the present and future by incorporating leadership and career development, best management practices in crop and livestock production, technology, natural resources, problem solving, internships, and communication through a diverse program."

Course Code	Course Title	Credits
NDSCS Classes		
Technical Credits		9
Choose from the following Prefixes		
ANSC, AGRI, AGECE, ACCT, BADM, BUSN, CULA		
AGRI 197 – Internship		5
NDSU Courses		
ANSC 241	Survey of Meat Science	2
ANSC 243	Slaughter and Processing of Domestic Livestock	4
ANSC 244	Value-added Meats Processing	2
ANSC 245	Hazard Analysis and Critical Control Points (HACCP)	2
Related/General Education Courses		
English/Communication Elective		3
General Education Elective		2
FYE 101	Science of Success	1
Total Required Credits		30

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer science, and English. Courses that develop communication skills are important.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61	<u>NEXT GENERATION</u>
English – 16	Sentence Skills – 20	Reading – 240
	WritePlacer – 5	Writing – 250

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the academic counselor at 701-671-2263 or the Agriculture department chair at 701-671-2249 for strategies to meet the admission requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a Certificate in Agriculture with an emphasis in Meat Processing.

Revised: August 2022



Agriculture

Precision Agriculture

► Contact Information

Chandra Langseth, instructor
Chandra.Langseth@ndscs.edu
701-671-2602
Tech Center 45

► Delivery Methods

Face-to-Face: Wahpeton

Students who enroll in the Precision Agriculture option in the Agriculture Department will pursue careers in crop production, agronomic consulting, equipment calibration, USDA/NRCS, and data management. Students will find many challenging courses. Course work includes: agronomic fundamentals, data collection, data management, sales and hands-on practical application of GPS, and drone/UAV systems.

Students will have the opportunity to apply concepts learned through hands-on activities at the NDSCS Kosel Family Agriculture Land Lab and other classroom and laboratory activities. The Land Lab is a 90-acre demonstration farm operated by the Agriculture Department, students, and industry partners.

Spring semester concludes mid-April each year to allow students to begin their internship experience. Students enrolled in this option will complete a 400-hour paid internship at a career related training facility during the summer between their first and second year of instruction.

Our philosophy statement is: "The Agriculture Department provides education for the present and future by incorporating leadership and career development, best management practices in crop and livestock production, technology, natural resources, problem solving, internships, and communication through a diverse program."

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Craig Zimprich, department chair, at 701-671-2249.

Course Code	Course Title	Credits
AGEC 142	Agribusiness Internship Orientation I	1
AGEC 143	Agribusiness Internship Orientation II	1
AGEC 242	Introduction to Agricultural Management	4
AGEC 250	Agribusiness Sales	3
AGRI 197	Internship	3
AGRI 297	Internship	1
PAG 275	Introduction to Precision Agriculture	3
PAG 276	Data Collection and Management	3
PAG 285	Precision Agriculture Systems Software	3
PAG 286	Advanced Mapping	3
PLSC 110	World Food Crops	3
PLSC 215	Weed Identification	1
PLSC 225	Principles of Crop Production	3
PLSC 235	Field Scouting Techniques	3
PLSC 235L	Field Scouting Techniques Lab	1
SOIL 210	Introduction to Soil Science	3
SOIL 222	Soil Fertility and Fertilizers	3
Any Agriculture Electives		10
(1 course must be an ANSC prefix)		

Related/General Education Courses

AGRI 135	Applied Math	2
MATH 120	Basic Mathematics I	2
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4

Total Required Credits **69**

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer science, and English. Courses that develop communication skills are important.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Agriculture with an emphasis in Precision Agriculture.

Revised: May 2022

Ranch Management

► Contact Information

Sheldon Schmiess, associate professor
Sheldon.Schmiess@ndscs.edu
701-671-2273
Tech Center 44

► Delivery Methods

Face-to-Face: Wahpeton

The Ranch Management curriculum is designed to provide the student returning to the ranch or diversified livestock operation with the management and production skills necessary to be successful.

Students will have the opportunity to apply concepts learned through hands-on activities at the NDSCS Kosel Family Agriculture Land Lab and other classroom and laboratory activities. The Land Lab is a 90-acre demonstration farm operated by the Agriculture Department, students, and industry partners.

Classroom curriculum focuses on ranch management topics such as livestock production, feeds and feeding, livestock health, financial management, record keeping, commodity marketing, precision agriculture, crop production, plant science, and soil fertility. Courses incorporate current technologies enabling students to acquire the skills necessary to manage and operate today's farms.

Spring semester classes conclude mid-April each year allowing students to return to the home farm or ranch to assist with spring activities. During the summer, students will complete a farm record keeping internship for a hypothetical farm similar to their home farm. They will be required to collect data from their home farm such as crop mix, seed, fertilizer, chemical costs, real estate taxes, crop yields, prices received for commodities, and land costs. When they return in the fall, this data will then be plugged into the hypothetical farm and analyzed using computerized software. Each student should then have a good understanding of what a typical year might look like on their home farm.

For students who decide to continue their education, the majority of program credits earned at NDSCS will transfer into a bachelor's degree program.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Craig Zimprich, department chair, at 701-671-2249.

Course Code	Course Title	Credits
AGEC 145	Farm Records	3
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
AGEC 246	Introduction to Agricultural Finance	3
AGEC 247	Agricultural Land Resource Acquisition	2
AGEC 248	Introduction to Risk Management and Insurance	3
AGEC 197	Farm and Ranch Management Internship	4
AGEC 297	Farm and Ranch Management Internship	2
ANSC 114	Introduction to Animal Sciences	3
ANSC 123	Feeds and Feeding	3
ANSC 220	Livestock Production	3
ANSC 236	Introduction to Range Management	2
PAG 275	Introduction to Precision Agriculture	3
	Any Agriculture Electives	8

Related/General Education Courses

AGRI 135	Applied Math	2
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
MATH 120	Basic Mathematics I	2
PLSC 110	World Food Crops	3
SOIL 210	Introduction to Soil Science	3
	English/Communication Elective (choose one)	3
	ENGL 105 Technical Communications	
	ENGL 120 College Composition II	
	ENGL 125 Introduction to Professional Writing	
	COMM 110 Fundamentals of Public Speaking	
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4

Total Required Credits **69**

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are mathematics, physical science, biology, agricultural education, computer sciences, and English. Courses that develop communication skills are important.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Agriculture with an emphasis in Ranch Management.

Revised: May 2022

Architectural Modeling and Design Technology

► Contact Information

Randy Stach, department chair
Randy.Stach@ndscs.edu
701-671-2116
Horton Hall 240

► Delivery Methods

Face-to-Face: Wahpeton
Some Classes Available
Online

The Architectural Modeling and Design Technology program is designed to prepare students for work as technicians in construction-related industries, allowing graduates to work in a broad range of jobs, such as drafting, revit modeling, estimating, sales, construction management and project coordination. General contractors, subcontractors, home builders, architectural and engineering firms, material suppliers, steel fabricators, manufacturers and building centers all have specific areas of employment for graduates of this program.

Students are provided with classroom and laboratory experiences emphasizing computer-aided drafting (CAD) and Building Information Modeling (BIM) utilizing AutoDesk Revit software for residential and commercial buildings, estimating, structural design, mechanical and electrical systems for buildings, presentation techniques and remodeling. Students will take courses in communications, technical mathematics and business, which will provide them with career-advancing skills.

While students are fully employable upon completion of this program, some may wish to return for an additional year and earn a second major in Construction Management Technology. This program also provides transfer options to four-year colleges and universities in related fields.

Green and/or sustainable construction is specifically covered in multiple courses. Leadership in Energy and Environmental Design (LEED) certification is covered extensively. Green/sustainable construction is also discussed across the rest of the curriculum.

NOTE: This program requires a ZBOOK 15 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$2100.00 if purchased through NDSCS. For further information, call Randy Stach, department chair, at 701-671-2116.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Architectural Modeling and Design Technology.

Course Code	Course Title	Credits
ARCT 101	Architectural Modeling I	3
ARCT 102	Architectural Modeling II	4
ARCT 110	Graphic Communications	3
ARCT 121	Revit Architecture	2
ARCT 122	Structural Modeling	2
ARCT 131	Construction Methods and Materials I	3
ARCT 144	Construction Estimating I	3
ARCT 152	MEP Modeling	2
ARCT 162	Construction Experience	1
ARCT 201	Architectural Modeling III	4
ARCT 202	Architectural Modeling IV	4
ARCT 212	Architectural Presentations	2
ARCT 214	Architectural Portfolio	1
ARCT 221	Structural Detailing	3
ARCT 223	Renovation and Design	3
ARCT 231	Construction Methods and Materials II	3
ARCT 120	AutoCAD for Architecture	2
or CAD 120	Introduction to AutoCAD (3)	
ARCT 297	Cooperative Education	2
CMT 225	Mechanical and Electrical Systems	2

Business/Technical Elective (choose one/2 credit minimum)

BADM 240	Sales (3)	
BUSN 120	Fundamentals of Business (3)	
CMT 165	Residential and Project Experience (1)	
CMT 251	Construction Documents and Specifications (3)	
CMT 253	Construction Scheduling (3)	
CMT 265	Residential Project Experience (1)	
UAS 111	Introduction to UAS (2)	
UAS 112	Unmanned Aircraft Systems Certification (2)	

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
Wellness Elective(s)		2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CSCI 116 – Business Use of Computers – 3 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits **70**

Revised: May 2022

Auto Body Repair and Refinishing Technology

► Contact Information

James Erdahl, program coordinator
James.Erdahl@ndscs.edu
701-671-2163
Ballweber Hall 207

► Delivery Methods

Face-to-Face: Wahpeton

The Auto Body Repair and Refinishing Technology curriculum is designed to provide students with the education and training to enter the collision repair industry. The comprehensive program enables students to gain entry-level employment and with additional field experience, they can enjoy lifetime employment in this lucrative industry. Most graduates start in collision repair shops; however, graduates find opportunities in related fields such as equipment and material representatives, insurance adjusters, industry technical trainers and shop managers.

I-CAR, an industry non-profit national training organization, estimates the collision industry is short 50,000 technicians in the United States at this time, providing a wonderful opportunity for graduates. There are usually four employers to each available graduate each year.

Students are trained hands-on with the latest equipment found in the industry. This includes computer estimating, computer measuring systems, computer paint mixing, wheel alignment, refinishing, spot repair and custom painting. All learning takes place primarily on live customer projects, with some classroom activities. Often students will bring their own vehicles to repair adding to their overall experience.

The program is NATEF Certified and accredited through PPG Partners in Education™, an exclusive partnership that assures high standards for curriculum and faculty training.

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the academic counselor at 701-671-2257 or the Auto Body Repair and Refinishing Technology program coordinator at 701-671-2163 for strategies to meet the admission requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a diploma or Associate in Applied Science degree in Auto Body Repair and Refinishing Technology.

Course Code	Course Title	Credits
Diploma and Associate in Applied Science		
ABOD 101	Basic Auto Body Repair Techniques Lab	4
ABOD 102	Basic Auto Body Production Lab I	4
ABOD 103	Basic Auto Body Production Lab II	4
ABOD 104	Basic Auto Body Production Lab III	4
ABOD 113	Basic Auto Body Repair Techniques I	2
ABOD 115	Basic Auto Body Repair Techniques II	2
ABOD 116	Refinishing Equipment/Plastic Repair	2
ABOD 117	Refinishing Materials	2
ABOD 200	Mechanical/Electrical Components	3
ABOD 201	Steering, Suspension and Wheel Alignment	2
ABOD 202	Structural Repair Equipment	2
ABOD 203	Advanced Damage Analysis Lab I	8
ABOD 204	Structural Repair Techniques	2
ABOD 205	Estimating and Job Costing	2
ABOD 206	Advanced Damage Analysis Lab II	8
MFGT 110	Industrial Shop Practices	2

Related/General Education Courses for Diploma

ENGL 105	Technical Communications	3
	or ENGL 110 College Composition I (3)	
	Mathematics and/or Science	3
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
	Recommended:	
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations in Organizations – 2 cr	
	Wellness Elective	1
	General Education Elective	1
FYE 101	Science of Success	1

Total Required Credits for Diploma 66

A student must complete all required Auto Body courses and all general education courses as listed above.

Related/General Education Courses for Associate in Applied Science

ENGL 110	College Composition I	3
	English/Communication Elective (choose one)	3
	ENGL 105 Technical Communications	
	ENGL 120 College Composition II	
	ENGL 125 Introduction to Professional Writing	
	COMM 110 Fundamentals of Public Speaking	
	Mathematics and/or Science	3
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
	Recommended:	
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations in Organizations – 2 cr	
	Wellness Electives	2
	General Education Electives	3
FYE 101	Science of Success	1

Total Required Credits for Associate in Applied Science 72

A student must complete all required Auto Body courses and all general education courses as listed above.

Revised May 2022



Automotive Technology

Automotive Technology

► Contact Information

Terry Marohl, department chair
Terry.Marohl@ndscs.edu
701-671-2308
Bisek Hall 1135

► Delivery Methods

Face-to-Face: Wahpeton

The Automotive Technology curriculum prepares students for employment in the vast and broad automotive technology industry.

Students are provided with experiences emphasizing diagnostic and repair skills with extensive shop time. Students test, diagnose, adjust, and repair automotive systems including automatic transmissions, brakes, driveability, electrical and electronics, engine repair, heating and air conditioning, suspension and steering, and manual drivetrain and axles. Students' abilities in communications, human relations and other aspects of general education are also enhanced through coursework.

Graduates gain employment as automotive repair technicians in automotive dealerships, independent automotive shops, or automotive service centers. Graduates may choose to specialize in automatic transmissions, brakes, driveability, electrical and electronics, engine repair, heating and air conditioning, suspension and steering, or manual drivetrain and axles. Many graduates have advanced from automotive repair technicians to team leaders, service writers, service managers, owners, and automotive vocational teachers.

Students interested in pursuing additional education may return for advanced automotive classes or return for one additional year and earn a second major, Auto and Diesel Master Technician. Students interested in pursuing an advanced degree will find the Associate in Applied Science degree in Automotive Technology provides transfer options to four-year colleges and universities in related fields.

Going Green: With growing concern about environmental pollution, the automotive industry has responded by developing alternative drive and fuel systems such as electric, hybrid. Automotive Technicians will have to have knowledge of these systems to be a viable employee in this field.

This program is accredited by the National Automotive Technicians Education Foundation, Inc. (NATEF) at the Automotive Service Excellence (ASE) Master Automobile Service Technology level.

NOTE: This program requires an EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. For further information, contact Terry Marohl, department chair, at 701-671-2308.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a diploma or Associate in Applied Science degree in Automotive Technology.

Course Code	Course Title	Credits
Diploma and Associate in Applied Science		
AUTO 103	Power Trains/Brakes	3
AUTO 143	Steering, Suspension, and Wheel Alignment	3
AUTO 165	Automotive Electrical and Electronics	5
AUTO 168	Hybrid and Electric Vehicle Systems	1
AUTO 188	Driveability Procedures I	5
AUTO 206	Chassis Repair/Body Electrical	7
AUTO 216	Engine Repair	7
AUTO 226	Automatic Transmission/Transaxles	7
AUTO 286	Driveability Procedures	7
MFGT 110	Industrial Shop Practices	2
TECH 109	Air Conditioning	2

Related/General Education Courses

Diploma

FYE 101	Science of Success	1
ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
Wellness Elective		1

Associate in Applied Science

FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Electives		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
AUTO 297	Cooperative Education - 324 hours	2

Total Required Credits for Diploma	62
Total Required Credits for Associate in Applied Science	70

Revised May 2022

Automotive Technology

Automotive and Diesel Master Technician

Contact Information

Terry Marohl, department chair
Terry.Marohl@ndscs.edu
701-671-2308
Bisek Hall 111

Delivery Methods

Face-to-Face: Wahpeton

This is a third-year option developed for students who complete Automotive Technology or Diesel Technology and want to continue their education and increase their technical and mechanical skills. The dual major will strengthen the marketability of students for employment in automotive, diesel, and related fields of business and industry. This curriculum is for students who complete Automotive Technology and then go to Diesel Technology. Admission into the Automotive and Diesel Master Technician program is dependent on the availability of open seats in each program area. Please check with the Transportation Department Chair for current information.

The Automotive and Diesel Master Technician program prepares students for employment in the vast and broad automotive and diesel industry. Students are provided with experiences emphasizing diagnostic and repair skills with extensive shop time. Students test, diagnose, adjust, and repair all types of drivetrains, engines, hydraulic systems, steering and suspension systems. Students' abilities in communications, human relations, and other aspects of general education will be enhanced.

This practical education will allow graduates to work in dealerships, independent shops, or national service centers. Graduates work as automotive technicians, truck technicians, tractor technicians, heavy equipment technicians or in many related fields. Many graduates have advanced from technicians to team leaders, service writers, service managers, owners, and vocational teachers.

The Automotive Technology program is master certified by the National Institute for Automotive Service Excellence (ASE). The Diesel Technology program is accredited by the AED Foundation.

NOTE: This program requires an EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. For further information, contact Terry Marohl, department chair, at 701-671-2308.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements. Students who complete Automotive Technology with a Diploma will need to complete additional courses to meet the AAS requirements for Automotive and Diesel Master Technician.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the Diesel Technology Department at 701-671-2330 or the academic counselor at 701-671-2257 for strategies to meet the admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

Course Code	Course Title	Credits
AUTO 103	Power Trains/Brakes	3
AUTO 143	Steering, Suspension, and Wheel Alignment	3
AUTO 165	Automotive Electrical and Electronics	5
AUTO 168	Hybrid and Electric Vehicle Systems	1
AUTO 188	Driveability Procedures I	5
AUTO 206	Chassis Repair/Body Electrical	7
AUTO 216	Engine Repair	7
AUTO 226	Automotive Transmission/Transaxles	7
AUTO 286	Driveability Procedures	7
AUTO 297	Cooperative Education (324 hours)	2
MFGT 110	Industrial Shop Practices	2
TECH 109	Air Conditioning	2

Related/General Education Courses

ENGL 110	College Composition I	3
	English/Communication Elective (choose one)	3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
	Wellness Elective(s)	2
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
	Recommended:	
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations in Organizations – 2 cr	
FYE 101	Science of Success	1

Diesel Technology (Minor) Courses

DTEC 110	Diesel Equipment Maintenance <u>or</u>	3
DTEC 125	Introduction to Heavy Duty Drive Systems <u>or</u>	3
DTEC 135	Medium/Heavy Duty Brake Systems	2
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 215	Heavy Duty Diesel Engines	7
DTEC 225	Heavy Duty Drive Systems	7
DTEC 255	Heavy Duty Chassis Electrical Systems	7
DTEC 265	Mobile Hydraulic Systems Diagnostics and Repair	7

Total Required Credits **97**

Throughout the course of the year, students will need to take DTEC 110 or DTEC 125 or DTEC 135, DTEC 164, DTEC 265 **and** two of the following 2nd year courses; DTEC 215, DTEC 225 or DTEC 255.

Students in this emphasis will complete the Automotive curriculum prior to taking Diesel Technology.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Automotive and Diesel Master Technician.

Revised May 2022



Autonomous Systems Technology

Autonomous Systems Technology (Certificate)

► Contact Information

Lonnie Wurst, program coordinator
Lonnie.Wurst@ndscs.edu
701-671-2832
Barnard Hall 206

► Delivery Methods

Face-to-Face: Wahpeton

The Autonomous Systems Technology (AST) program is designed to provide students with the introductory technical knowledge, skills, and abilities necessary to succeed in industries utilizing ground-based autonomous systems.

Students from a wide variety of majors will have the opportunity to earn a certificate by taking specialized courses specific to ground-based autonomous systems. The courses required for the AST certificate will enhance the student's knowledge and skill set regarding autonomous systems and make them more marketable when entering the workforce.

Industries that hire AST graduates with the skill sets obtained in this program include: manufacturing, transportation, defense, and agriculture, among others.

This certificate program is structured to be taken in conjunction with another NDSCS academic program option.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Lonnie Wurst, program coordinator, at 701-671-2832.

Course Code	Course Title	Credits
RAMT 101	Applied DC Theory	4
MFGT 110	Industrial Shop Practices	2
	-OR-	
MFGT 123	Fabrication Methods I	2
AST 101	Ground Systems I	2
AST 102	Ground Systems II	2
AST 103	Autonomous Sensing Systems	2
AST 111	Introduction to Data Science	2
AST 220	Autonomous Systems Capstone	2

Related/General Education Courses

General Education Elective		3
FYE 101	First Year Experience	1

Total Required Credits **20**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate in Autonomous Systems Technology (AST).

Revised: May 2022

Building Construction Technology

Building Construction Technology

► Contact Information

Randy Stach, department chair
Randy.Stach@ndscs.edu
701-671-2116
Horton Hall 240

► Delivery Methods

Face-to-Face: Wahpeton

The Building Construction Technology curriculum prepares students with skills to work in many areas of the construction industry. The program educates and trains the future leaders of the construction industry with a unique blend of education and hands-on training. Graduates can work for builders, general contractors and subcontractors in commercial, industrial and residential construction. Students develop the skills, knowledge and attitudes necessary to function on the construction site with the potential to advance into supervisory positions within the construction industry.

The program provides students with realistic classroom and laboratory experiences emphasizing rough carpentry, exterior finishes, finish carpentry, interior finishes, concrete construction, steel erection, assembly of pre-engineered metal building systems, equipment operation, construction safety, print reading and project supervision. In addition, students take courses in communications, human relations, technical mathematics, and business use of computers to help provide them with career-advancing skills.

Green and/or sustainable construction is specifically covered in multiple courses with an emphasis on energy efficient buildings and sustainable building materials.

While students are fully employable upon completion of this program, some may wish to continue their education by returning for an additional year and earn a second major in Construction Management Technology.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Randy Stach, department chair, at 701-671-2116.

Course Code	Course Title	Credits
ARCT 144	Construction Estimating I	3
BCT 110	Concrete and Sitework	4
BCT 111	Concrete Theory	2
BCT 115	Introduction to Light Commercial Construction	3
BCT 131	Rough Carpentry	3
BCT 132	Exterior Finish Construction	3
BCT 133	Carpentry Fundamentals	2
BCT 140	Intro to Print Reading	2
BCT 201	Supervised Occupational Experience I	6
BCT 202	Construction Seminar	2
BCT 203	Supervised Occupational Experience II	4
BCT 212	Steel Frame Construction	3
BCT 220	Project Supervision	3
BCT 222	Construction Safety	2
BCT 224	Building Layout	2
BCT 231	Interior Finishes	3
BCT 232	Finish Carpentry	3
BCT 233	Commercial Finishes	3
BCT 240	Commercial Print Reading	3
MFGT 120	Basic Welding I	1

Related/General Education Courses

ENGL 110	College Composition I	3
COMM 110	Fundamentals of Public Speaking	3
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4

Recommended:

- CSCI 116 – Business Use of Computers – 3 cr
- PSYC 100 – Human Relations in Organizations – 2 cr

Total Required Credits **76**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Building Construction Technology.

Revised: May 2022



Business Management

Administration and Finance

► Contact Information

Kathy Marquette, associate professor
Kathy.Marquette@ndscs.edu
701-671-2595
Horton Hall 230

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

Students earning an Associate of Applied Science degree (AAS) in Business Management can expect to formulate the knowledge, skills, and attitudes needed for a successful transition to a career-sustaining position or further study in one of several business career pathways.

The Administration and Finance emphasis prepares students towards pathways of:

- Administrative Support
- Business Information
- General Management
- Human Resource Management
- Operations Management
- Accounting
- Banking Services
- Insurance

To be successful, students should be willing to improve on their communication and presentation skills to demonstrate and carry themselves with a sense of professionalism. Students develop and hone these skills through the Business Management student organization Collegiate DECA.

These careers continue to be some of the largest and highest-paying segments of the job market and job prospects continue to be good for workers who stay up-to-date on the latest developments in their field and are constantly looking for new ways to contribute to the success of their business. Faculty advisors can help assist students in the development of an appropriate program to meet the student's career goals.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Greg Anderson, department chair, at 701-671-2172.

Course Code	Course Title	Credits
BADM 103	*Leadership Techniques	1
BADM 201	Principles of Marketing	3
BADM 202	Principles of Management	3
BADM 234	Customer Service	1
BADM 240	Sales	3
BADM 251	Personal Finance	3
BADM 281	Organizational Behavior	3
BADM 282	Human Resource Management	3
BADM 291	Career Seminar	3
BUSN 120	Fundamentals of Business	3
BUSN 170	Entrepreneurship	3
BUSN 254	Financial Statement Analysis	3
BUSN 282	*Professional Development	1

Related/General Education Courses

ACCT 200	Elements of Accounting I	4
ACCT 201	Elements of Accounting II	4
ACCT 215	Business in the Legal Environment	3
CIS 101	Computer Literacy	2
COMM 110	Fundamentals of Public Speaking	3
ECON 105	Elements of Economics	3
or ECON 201	Principles of Microeconomics (3)	
or ECON 202	Principles of Macroeconomics (3)	
ENGL 110	College Composition I	3
ENGL 125	Introduction to Professional Writing	3
or ENGL 120	College Composition II (3)	
FYE 101	Science of Success	1
Wellness Elective(s)		2
MATH Elective (BOTE 108 or MATH 103)		3
Electives		3
<i>Choose 3 credits from the courses listed below.</i>		
BADM 217	Promotion and Advertising (3)	
BADM 230	Marketing Information Analysis (3)	
BADM 244	Sales Seminar (3)	
BUSN 297	Internship/Coop (1-5)	
PHIL 215	Contemporary Moral Issues (3)	
PSYC 111	Introduction to Psychology (3)	
SOC 110	Introduction to Sociology (3)	

Total Required Credits **67**

* Includes membership in Collegiate DECA.

Admission Requirements*

The applicants must be high school graduates or equivalent. Work experience and marketing or general business courses are helpful.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Business Management with an emphasis in Administration and Finance.

Revised: May 2022

Business Management

Business Management

• Business Certificate Options

- Entrepreneurship
- Finance
- Management/Supervision
- Sales

▶ Contact Information

Ann Smith, associate professor
Ann.Smith@ndscs.edu
701-671-2302
Horton Hall 229

▶ Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

The Business Management Certificate Options consists of four independent plans of study in the areas of Entrepreneurship, Finance, Management/Supervision, and Sales. Students may choose to complete any of these individual plans of study to earn a certificate in Business Management with an emphasis in that respective area. If students' progress through all four plans of study satisfactorily, they will need only to complete two credits of wellness electives to earn an Associate in Applied Science degree in Business Management with an emphasis in Marketing, Sales and Hospitality Services.

Designed to meet the needs of an adult population, this program is delivered in a hybrid, or blending of face-to-face and online learning.

As stand-alone certificates, these classes may provide learners with the opportunity to learn and/or enhance their selling and communication skills; to discover their entrepreneurial abilities; to understand their role as a manager/supervisor; or to provide the knowledge needed to analyze the financial workings of an organization. These skills, combined with real-world experience and the numerous leadership opportunities that will be available, will enable the learner to develop into a valuable asset in the business community.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Greg Anderson, department chair, at 701-671-2172.

Admission Requirements*

The applicants must be high school graduates or equivalent. Work experience in marketing or general business courses is helpful.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses for the **Entrepreneurship** plan, students will be awarded a certificate in Business Management with an emphasis in Entrepreneurship.

Upon successful completion of the required courses for the **Finance** plan, students will be awarded a certificate in Business Management with an emphasis in Finance.

Upon successful completion of the required courses for the **Management/Supervision** plan, students will be awarded a certificate in Business Management with an emphasis in Management/Supervision.

Entrepreneurship

Course Code	Course Title	Credits
BADM 201	Principles of Marketing	3
BADM 217	Promotion and Advertising	3
BADM 230	Marketing Information Analysis	3
BUSN 170	Entrepreneurship	3

Related/General Education Courses

ENGL 125	Introduction to Professional Writing	3
PHIL 215	Contemporary Moral Issues	3
Total Required Credits for Certificate		18

Finance

Course Code	Course Title	Credits
ACCT 200	Elements of Accounting I	4
ACCT 201	Elements of Accounting II	4
ACCT 118	Applied Accounting	3
BUSN 254	Financial Statement Analysis	3

Related/General Education Courses

ECON 202	Principles of Macroeconomics	3
Total Required Credits for Certificate		17

Management/Supervision

Course Code	Course Title	Credits
ACCT 215	Business in the Legal Environment	3
BADM 202	Principles of Management	3
BADM 282	Human Resource Management	3

Related/General Education Courses

CSCI 116	Business Use of Computers	4
ENGL 110	College Composition I	3
Total Required Credits for Certificate		16

Sales

Course Code	Course Title	Credits
BADM 234	Customer Service	1
BADM 240	Sales	3
BADM 244	Sales Seminar	3
BUSN 120	Fundamentals of Business	3

Related/General Education Courses

BOTE 108	Business Mathematics	3
COMM 110	Fundamentals of Public Speaking	3
Total Required Credits for Certificate		16

Business Management – Marketing, Sales and Hospitality Services

Completion of Entrepreneurship Certificate	18
Completion of Finance Certificate	16
Completion of Management/Supervision Certificate	16
Completion of Sales Certificate	16
Wellness Elective(s)	2
Total Required Credits for A.A.S. Degree	68

Award (continued)

Upon successful completion of the required courses for the **Sales** plan, students will be awarded a certificate in Business Management with an emphasis in Sales.

Upon successful completion of the required courses for the four plans of study and two credits of wellness electives, students will be awarded an Associate in Applied Science degree in Business Management with an emphasis in Marketing, Sales and Hospitality Services.

Revised: May 2022



Business Management

Business Technology Management

► Contact Information

Ann Smith, associate professor
Ann.Smith@ndscs.edu
701-671-2302
Horton Hall 229

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

This option is designed as a third-year option for students who have previously completed a technical degree program (Auto Body, Precision Machining, Plumbing, Welding, etc.). It provides a range of business knowledge and experiences that will integrate well with the skills students have already achieved, preparing them to take on supervisory roles in their employment. Additionally, this option can develop skills needed to own, operate, and expand your own business. Students will learn to recognize and act on opportunities to develop an entrepreneurial mindset. The Business Management core taught at NDSCS focuses student learning in the following areas:

- Business Law
- Communication Skills
- Customer Relations
- Economics
- Emotional Intelligence
- Entrepreneurship
- Financial Analysis
- Human Resource Management
- Information Management
- Marketing
- Operations
- Professional Development
- Strategic Management

A faculty advisor will assist students in the development of an appropriate program to meet the student's career goals. Employment opportunities are unlimited, depending upon the individuals' strengths and interests.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Greg Anderson, department chair, at 701-671-2172.

Admission Requirements*

The student must have earned an Associate in Applied Science (A.A.S.) degree from an accredited institution.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Business Management with an emphasis in Business Technology Management.

In addition to having earned an Associate in Applied Science (A.A.S.) degree, the following courses are required:

Course Code	Course Title	Credits
ACCT 102	Fundamentals of Accounting	3
ACCT 118	Applied Accounting	3
ACCT 215	Business in the Legal Environment	3
BADM 201	Principles of Marketing	3
BADM 202	Principles of Management	3
BADM 240	Sales	3
BADM 281	Organizational Behavior	3
BADM 282	Human Resource Management	3
BUSN 120	Fundamentals of Business	3
BUSN 170	Entrepreneurship	3

Related/General Education Courses

BOTE 108	Business Mathematics	3
COMM 110	Fundamentals of Public Speaking	3

Total Required Credits

36
(in addition to previously earned A.A.S. degree)

Revised: May 2022

Business Management

Marketing, Sales and Hospitality Services

► Contact Information

Greg Anderson, department chair
 Greg.Anderson@ndscs.edu
 701-671-2172
 Horton Hall 233

► Delivery Methods

Face-to-Face: Wahpeton
 Face-to-Face: Fargo
 Online: Some Classes
 Combination

Students earning an Associate of Applied Science degree (AAS) in Business Management can expect to formulate the knowledge, skills, and attitudes needed for a successful transition to a career-sustaining position or further study in one of several business career pathways.

The Marketing, Sales and Hospitality Services emphasis prepares students towards pathways in:

- Lodging
- Restaurant, Food, and Beverage Services
- Travel and Tourism
- Recreating, Amusements, and Attractions
- Marketing Research
- Marketing Communications
- Marketing Management
- Merchandising
- Professional Sales

To be successful, students should be willing to improve on their communication and presentation skills to demonstrate and carry themselves with a sense of professionalism. Students develop and hone these skills through the Business Management student organization Collegiate DECA.

These careers continue to be some of the largest and highest-paying segments of the job market and job prospects continue to be good for workers who stay up-to-date on the latest developments in their field and are constantly looking for new ways to contribute to the success of their business. Faculty advisors can help assist students in the development of an appropriate program to meet the student's career goals.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Greg Anderson, department chair, at 701-671-2172.

Admission Requirements*

The applicants must be high school graduates or equivalent. Work experience and marketing or general business courses are helpful.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Business Management with an emphasis Marketing, Sales and Hospitality Services.

Course Code	Course Title	Credits
BADM 103	*Leadership Techniques	1
BADM 201	Principles of Marketing	3
BADM 202	Principles of Management	3
BADM 217	Promotion and Advertising	3
BADM 230	Marketing Information Analysis	3
BADM 234	Customer Service	1
BADM 240	Sales	3
BADM 244	Sales Seminar	3
BADM 251	Personal Finance	3
BADM 281	Organizational Behavior	3
BADM 282	Human Resource Management	3
BADM 291	Career Seminar	3
BUSN 120	Fundamentals of Business	3
BUSN 170	Entrepreneurship	3
BUSN 282	*Professional Development	1

Related/General Education Courses

ACCT 102	Fundamentals of Accounting	3
ACCT 118	Applied Accounting	3
ACCT 215	Business in the Legal Environment	3
CIS 101	Computer Literacy	2
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 125	Introduction to Professional Writing	3
or ENGL 120	College Composition II (3)	
FYE 101	Science of Success	1
Wellness Elective(s)		2
BOTE 108	Business Mathematics	3
or MATH 103	College Algebra (3)	
Electives		3
<i>Choose 3 credits from the courses listed below.</i>		
BUSN 297	Internship/Coop (1-5)	
BUSN 254	Financial Statement Analysis (3)	
PHIL 215	Contemporary Moral Issues (3)	
ECON 105	Elements of Economics (3)	
or ECON 201	Principles of Microeconomics (3)	
or ECON 202	Principles of Macroeconomics (3)	
PSYC 111	Introduction to Psychology (3)	
SOC 110	Introduction to Sociology (3)	

Total Required Credits **68**

* Includes membership in Collegiate DECA.

Online completion may require modification of courses. Consult advisor for changes.

Revised: May 2022



Business Management

Restaurant Management

► Contact Information

Ann Smith, associate professor
Ann.Smith@ndscs.edu
701-671-2302
Horton Hall 229

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

This option is designed as a third-year option for students completing the Culinary Arts program. It provides a range of business knowledge and experiences that will integrate well with the skills students have already achieved, preparing them to take on supervisory roles in their employment. Additionally, this option can develop skills needed to own, operate, and expand your own business. Students will learn to recognize and act on opportunities to develop an entrepreneurial mindset.

The Business Management core taught at NDSCS focuses student learning in the following areas:

- Business Law
- Communication Skills
- Customer Relations
- Economics
- Emotional Intelligence
- Entrepreneurship
- Financial Analysis
- Human Resource Management
- Information Management
- Marketing
- Operations
- Professional Development
- Strategic Management

Employment growth in this occupation will be as fast as the average of all occupations. Multiple job openings will also be created as a large number of managers reach their age of retirement or take transfers for other reasons. Since the food preparation industry is only slightly affected by the economy, the occupation offers good job security for candidates.

A faculty advisor will assist students in the development of an appropriate program to meet the student's career goals. Employment opportunities are unlimited, depending upon the individuals' strengths and interests.

NOTE: This program requires an HP EliteBook 850 or ZBOOK 15 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased from NDSCS. For further information, contact Greg Anderson, department chair at 701-671-2172.

In addition to having earned an Associate in Applied Science (A.A.S.) degree in Culinary Arts, the following courses are required:

Course Code	Course Title	Credits
ACCT 215	Business in the Legal Environment	3
BADM 103	*Leadership Techniques	1
BADM 201	Principles of Marketing	3
BADM 217	Promotion and Advertising	3
BADM 234	Customer Service	1
BADM 251	Personal Finance	3
BADM 282	Human Resource Management	3
BADM 291	Career Seminar	3
BUSN 120	Fundamentals of Business	3
BUSN 170	Entrepreneurship	3
BUSN 282	*Professional Development	1
COMM 110	Fundamentals of Public Speaking	3
ECON 105	Elements of Economics	3
	or ECON 201 Principles of Microeconomics (3)	
	or ECON 202 Principles of Macroeconomics (3)	
	Electives	3
	<i>Choose 3 credits from the courses listed below.</i>	
BADM 202	Principles of Management (3)	
BADM 230	Marketing Information Analysis (3)	
BADM 240	Sales (3)	
BADM 244	Sales Seminar (3)	
BADM 281	Organizational Behavior (3)	
BUSN 254	Financial Statement Analysis (3)	

Total Required Credits **36**
(in addition to previously earned A.A.S. degree in Culinary Arts)

* Includes membership in Collegiate DECA.

Admission Requirements*

This course of study is designed as a third-year option. Applicants for this program must have completed an Associate in Applied Science degree in Culinary Arts.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Business Management with an emphasis in Restaurant Management.

Revised: May 2022

Caterpillar Dealer Service Technician



Caterpillar Dealer Service Technician

► Contact Information

Michael Seedorf, program coordinator
Michael.L.Seedorf@ndscs.edu
701-671-2101
Bisek Hall 1152

► Delivery Methods

Face-to-Face: Wahpeton

The Caterpillar Dealer Service Technician program is designed to develop technically competent entry-level service technicians for Caterpillar dealerships regionally and throughout the world.

Students receive up-to-date technical training on Caterpillar equipment and systems through a combination of classroom instruction, hands-on laboratory instruction, and an internship at the participating Caterpillar dealer. Work experience at the dealership is structured to relate to the most recent classroom/lab subjects covered at NDSCS.

Green technology is addressed through changes in emission standards and alternative fuels that will continue to advance changes in this industry.

The Caterpillar Dealer Service Technician program takes five semesters, or approximately 20 months, to complete. The five semesters are divided into 9 terms, each approximately eight weeks in length. Students complete the first, third, fifth, seventh, and ninth terms on campus and the second, fourth, sixth, and eighth terms at a sponsoring Caterpillar dealership.

The Caterpillar Dealer Service Technician program is accredited by the AED Foundation.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements. Special requirements include securing a Caterpillar dealership sponsor.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the Diesel Technology Department at 701-671-2330 or academic counselor at 701-671-2257 for strategies to meet the admission requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Caterpillar Dealer Service Technician.

Course Code	Course Title	Credits
DCAT 110	Caterpillar Engine Fundamentals	4
DCAT 111	Introduction to Caterpillar Service	2
DCAT 112	Fundamentals of Hydraulics	3
DCAT 113	Caterpillar Fuel Systems	3
DCAT 114	Fundamentals of Electricity	3
DCAT 115	Air Conditioning Fundamentals	3
DCAT 116	Fundamentals of Transmission and Torque Converters	3
DCAT 117	Machine Hydraulic Systems	3
DCAT 150	Internship I	2
DCAT 151	Internship II	2
DCAT 200	Undercarriage/Final Drives	3
DCAT 201	Machine Electronic Systems	3
DCAT 202	Engine Performance	2
DCAT 203	Diagnostic Testing	2
DCAT 204	Machine Specific Systems	3
DCAT 250	Internship III	6
DCAT 251	Internship IV	6
MFGT 110	Industrial Shop Practices	2

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Wellness Electives		2
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits **74**

Revised May 2022



Construction Management Technology

Construction Management Technology

► Contact Information

Randy Stach, department chair
Randy.Stach@ndscs.edu
701-671-2116
Horton Hall 240

► Delivery Methods

Face-to-Face: Wahpeton
Some Classes
Available Online

This program is designed to provide individuals with the knowledge and skills needed to start a career in the construction management field. Classroom and laboratory experiences emphasize commercial, residential and civil related construction.

Students will take classes in the areas of construction materials and methods, print reading, safety, construction specifications, project management and supervision as well as hands-on classes for estimating, scheduling, surveying, material testing and quality control. In addition, students take courses in communications, human relations, technical mathematics, and business use of computers to help provide them with career-advancing skills.

The construction industry has a high demand for individuals with an education in construction management both regionally and nationally. The Construction Management Technology program prepares students for a career in construction as a construction manager, project manager, project engineer, field engineer, job site superintendent, estimator, scheduler, quality control and many other managerial positions whose duties and responsibilities ensure that construction projects are completed on-time, within budget, to the desired quality, and safely.

Green and/or sustainable construction is specifically covered in multiple courses with an emphasis on energy efficient buildings and sustainable building materials.

While students are fully employable upon completion of this program, the Associate in Applied Science degree in Construction Management Technology also provides transfer options to four-year colleges and universities in construction management related fields.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Randy Stach, department chair, at 701-671-2116.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

*Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Construction Management Technology.

Course Code	Course Title	Credits
ARCT 144	Construction Estimating I	3
ARCT 231	Construction Methods and Materials II	3
ARCT 241	Construction Estimating II	3
ARCT 242	Construction Estimating III	3
BCT 140	Introduction to Print Reading	2
BCT 220	Project Supervision	3
BCT 222	Construction Safety	2
BCT 240	Commercial Print Reading	3
CMT 150	Construction Document Management	2
CMT 225	Mechanical and Electrical Systems	2
CMT 251	Construction Documents and Specifications	3
CMT 252	Project Management	3
CMT 253	Construction Scheduling	3
CMT 297	Cooperative Education	2
CT 132	Materials Testing/Quality Control	3
Survey Elective (choose one)		2
CMT 120	Surveying Fundamentals	
BCT 224	Building Layout	
Residential Materials Elective (choose one)		2
BCT 133	Carpentry Fundamentals (2)	
ARCT 131	Construction Methods & Materials I (3)	

Business/Technical Electives (5 credit minimum)		5
ACCT 200	Elements of Accounting I (4)	
BADM 202	Principles of Management (3)	
BADM 240	Sales (3)	
BADM 281	Organizational Behavior (3)	
BADM 282	Human Resource Management (3)	
BUSN 120	Fundamentals of Business (3)	
CAD 120	Introduction to AutoCAD (3)	
CMT 121	Plane Surveying (2)	
CMT 165	Residential Project Experience (1)	
CMT 265	Residential Project Experience (1)	
CT 111	Civil Plans and Specifications (2)	
UAS 111	Introduction to UAS (2)	
UAS 112	Unmanned Aircraft Systems Certification (2)	

Related/General Education Courses		
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (Professional/Community)	2
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CSCI 116 – Business Use of Computers – 3 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits 71

Revised: May 2022

Culinary Arts

Chef Training and Management Technology

► Contact Information

Kyle Armitage, program coordinator
 Kyle.Armitage@ndscs.edu
 701-671-2264
 Student Center 129

► Delivery Methods

Face-to-Face: Wahpeton

The Culinary Arts curriculum provides students with a broad range of study that enables them to be employed in a large variety of occupations within the food service and hospitality industry. Students learn quality food preparation, service techniques, organizational skills, and are exposed to all aspects of the industry. A significant portion of the program is devoted to laboratory work where students spend time preparing standardized recipes for entrees, soups, garde manger/pantry items, meat, poultry, seafood, bakery, and dessert items. An emphasis is placed on classical cuisine and production of cuisine for formal dining rooms, as well as items for less formal establishments.

In addition to preparation courses, the core program provides training in sanitation, nutrition, menu planning, cost control, purchasing and inventory control, management, and supervision. General education and related courses that develop human relation skills, communication skills, business skills, and mathematics are offered to provide a well-rounded educational experience. A cooperative work experience must be completed successfully by all students prior to graduation.

The chef performs many functions in the food service industry, including food preparation, planning, control, supervision, and a variety of other tasks that coincide with the total control of the kitchen in the commercial food world. The industry and program require professional attitudes, actions, appearance, and dress along with the ability to work as part of a team and communicate well with others. Tact, courtesy, and a pleasant personality are important, as are keen senses of taste and smell.

Employment opportunities

Employment potential in the hospitality food preparation industry remains high. According to the United States Bureau of Labor Statistics, the North Dakota Hospitality Association, and our Culinary Arts Advisory Committee, there is an extreme shortage for trained individuals throughout the entire industry as chefs, cooks, bakers, and managers. Graduates commonly take employment in hotel restaurants, franchise restaurants, clubs, bakeries, catering operations, delis, retirement communities, and institutional food service facilities such as hospitals, nursing homes, public schools, and colleges.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are food preparation courses, accounting, business math, economics, and computer literacy.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

*Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Course Code	Course Title	Credits
CULA 101	Food Preparation Laboratory	8
CULA 102	Food Preparation Laboratory	9
CULA 110	Sanitation and Safety	2
CULA 119	Culinary Nutrition	2
CULA 120	Menu Planning	2
CULA 121	Food Cost and Portion Control	2
CULA 201	Principles of Baking and Specialty Desserts	9
CULA 202	Short Order Cookery	2
CULA 203	Gourmet Foods/Catering/Banquet Services	4
CULA 220	Dining Room Service	1
CULA 221	Principles of Restaurant Management	2
CULA 222	Restaurant Service and Production Management	6
CULA 297	*Cooperative Education	2

Related/General Education Courses for Diploma

BADM 240	Sales	3
BOTE 108	Business Mathematics	3
ENGL 105	Technical Communications	3
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
CIS 101 – Computer Literacy – 2 cr		
PSYC 100 – Human Relations in Organizations – 2 cr		
General Education Elective		1
Total Required Credits for Diploma		68

Related/General Education Courses for Associate Degree

ACCT 118	Applied Accounting	3
BOTE 108	Business Mathematics	3
ENGL 110	College Composition I	3
ENGL 105	Technical Communications	3
or ENGL 120 College Composition II (3)		
or ENGL 125 Introduction to Professional Writing (3)		
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
CSCI 116 – Business Use of Computers – 3 cr		
PSYC 100 – Human Relations in Organizations – 2 cr		
General Education Elective		3
Total Required Credits for Associate		73

*To take place at an approved job site during the summer following the first year.

NOTE: The hospitality industry utilizes items that contain alcohol to flavor and flame food products that will be served to customers. These items include wine, flavored liquors, and spirits. The Culinary Arts Department, to offer experiences and products that are as close to the work environment as possible, utilize the same type of products in the preparation and service of food items prepared in the laboratory.

Award

Upon successful completion of the required courses, students will be awarded a diploma or an Associate in Applied Science degree in Culinary Arts with an emphasis in Chef Training and Management Technology.

Revised: May 2022



Dental Assisting

Dental Assisting (Certificate)

Contact Information

Chanel Malone, program coordinator
AlliedHealthCareers@ndscs.edu
701-671-2367
Mayme Green Allied Health Center 213P

Delivery Methods

Face to Face: Wahpeton
Online: Some Classes

The duties of a Dental Assistant are among the most comprehensive and varied in the dental office. The Dental Assistant performs a wide range of tasks requiring both interpersonal and technical skills. Depending on each state's regulations, some specific tasks Dental Assistants may perform are:

- assisting the dentist during a variety of procedures and direct patient care.
- helping patients feel comfortable before, during and after treatment.
- taking patient's medical history and taking vital signs.
- exposing and developing dental radiographs (X-rays).
- teaching patient's appropriate oral hygiene strategies to maintain oral health.
- taking impressions of patient's teeth for study models.
- applying preventive agents such as fluoride or pit and fissure sealants.
- serving as an infection control officer, developing infection control protocol, and preparing and sterilizing instruments and equipment.
- performing office management tasks such as scheduling appointments, answering the telephone, billing, ordering and computer use.
- provide other expanded duties according to state regulations.

Career Opportunities

- solo and group dental practices.
- general or specialty practices such as oral and maxillofacial surgery, orthodontics, dentofacial orthopedics, endodontics, periodontics, prosthodontics, and pediatric dentistry; and
- sales and marketing of dental products.

The Dental Assisting program includes curriculum content in general studies, biodental sciences, dental sciences, clinical sciences, and clinical practice. Students receive more than 300 hours of clinical experience in community and regional dental offices in addition to courses taken on campus. Students will be required to cover all expenses associated with affiliation and internship assignments.

Criminal background checks will be required. A felony charge and/or conviction may affect participation in clinical experience(s), and therefore, program completion. If this issue applies, the student must meet with the department chair.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Course Code	Course Title	Credits
DAST 105	Office Practice and Management	1
DAST 106	Pre-Clinic for the Dental Assistant	1
DAST 110	Oral Anatomy for the Dental Assistant	2
DAST 111	Introduction to Chairside Assisting	3
DAST 115	Dental Radiology for the Dental Assistant	3
DAST 120	Dental Assisting Expanded Function	2
DAST 132	Clinical Training I	3
DAST 132L	Clinical Training I: Clinic	1
DAST 133	Clinical Training II	5
DAST 142	Dental Materials for the Dental Assistant	3
DAST 144	Biodental Science	2
DAST 151L	Simulation Lab I	1
DAST 152L	Simulation Lab II	1
FYE 101	Science of Success	1
PSYC 111	Introduction to Psychology	3
BIOL 115	Concepts of Anatomy and Physiology	3
BIOL 115L	Concepts of Anatomy and Physiology Lab	1
ENGL 105	Technical Communications	3

Total Required Credits for Certificate **39**

An Associate in Applied Science degree in Dental Assisting is also available. Please see separate fact sheet for additional information.

The program adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog*. Dental Assisting Program Competencies, Program Goals, and Essential Functions are available on the website at www.NDSCS.edu.

The Dental Assisting program is fully accredited by the Commission on Dental Accreditation of the American Dental Association, 211 East Chicago Ave, Chicago, IL 60611-2678.

Admission/Selection Requirements*

The following criteria must be complete by **April 1st** prior to entry into the Dental Assisting program. Applicants that apply after the April 1st deadline can complete the selection requirements and be placed on a waiting list. Late applicants may be selected based on points if openings become available until the first day of class fall semester.

1. Complete the NDSCS Admission process and submit an official high school transcript and all official college transcripts to Enrollment Services.
2. Applicants without a United States high school transcript (four years) will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Complete the Supplemental Program Application for Dental Assisting.
4. Submit an official transcript with a minimum of 12 college credits semester credits and a GPA of 2.0 or higher, **OR** a high school transcript with a minimum GPA 2.5 or higher will be used if no college courses.
5. Submit official ACT and/or placement testing results. Results must meet the criteria to enroll into English 110 the first semester of the program or have completed the course with a "C" or higher.
6. Points are awarded for grades in high school biology, algebra and chemistry and college level anatomy. Additional points are awarded for grades in college level courses, concepts of anatomy and anatomy and physiology.
7. Review career link and submit the Dental Assisting Career Review form.
8. Complete the selection assessment examination and meet the program benchmark score of **45**. The exam can be retaken once. Check with program for current assessment(s) required.
9. Review Essential Functions for Allied Dental Education Students and submit the signed Essential Functions Verification form.

Selection process details, contact information and forms are located in the Dental Assisting Program Information and Selection Process Booklet available at www.NDSCS.edu/Dental (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

The program is a limited enrollment program. Applicants will be selected on a point system. Once program capacity is reached, an alternate list will be established based on points. It is recommended that applicants stay in close contact with the program as they complete their admission requirements.

Program Selection Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

For accepted students, specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) OR Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) ONLY), and health insurance, are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on clinical site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Award

Upon successful completion of the required courses ("C" or higher), students will be awarded a certificate in Dental Assisting. Graduates will meet requirements to become registered within the state and eligible to take the Dental Assisting National Board. A criminal background check will be required, and a felony conviction may affect state licensure.

Revised: April 2022

Dental Assisting



Dental Assisting (AAS degree)

Contact Information

Chanel Malone, program coordinator
AlliedHealthCareers@ndscs.edu
701-671-2367
Mayme Green Allied Health Center 213P

Delivery Methods

Face to Face: Wahpeton
Online: Some Classes

The duties of a Dental Assistant are among the most comprehensive and varied in the dental office. The Dental Assistant performs a wide range of tasks requiring both interpersonal and technical skills. Depending on each state's regulations, some specific tasks Dental Assistants may perform are:

- assisting the dentist during a variety of procedures and direct patient care.
- helping patients feel comfortable before, during and after treatment.
- taking patient's medical history and vital signs.
- exposing and developing dental radiographs (X-rays).
- teaching patients' appropriate oral hygiene strategies to maintain oral health.
- taking impressions of patient's teeth for study models.
- applying preventive agents such as fluoride or pit and fissure sealants.
- serving as an infection control officer, developing infection control protocol, and preparing and sterilizing instruments and equipment.
- performing office management tasks such as scheduling appointments, answering the telephone, billing, ordering and computer use.
- provide other expanded duties according to state regulations.

Career Opportunities

- solo and group dental practices.
- general or specialty practices such as oral and maxillofacial surgery, orthodontics, dentofacial orthopedics, endodontics, periodontics, prosthodontics, and pediatric dentistry; and
- sales and marketing of dental products.

The Dental Assisting program includes curriculum content in general studies, biodental sciences, dental sciences, clinical sciences, and clinical practice. Students receive more than 300 hours of clinical experience in community and regional dental offices in addition to courses taken on campus. Students will be required to cover all expenses associated with affiliation and internship assignments. Criminal background checks will be required. A felony charge and/or conviction may affect participation in clinical experience(s), and therefore, program completion. If this issue applies, the student must meet with the department chair.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Course Code	Course Title	Credits
DAST 105	Office Practice and Management	1
DAST 106	Pre-Clinic for the Dental Assistant	1
DAST 110	Oral Anatomy for the Dental Assistant	2
DAST 111	Introduction to Chairside Assisting	3
DAST 115	Dental Radiology for the Dental Assistant	3
DAST 120	Dental Assisting Expanded Function	2
DAST 132	Clinical Training I	3
DAST 132L	Clinical Training I: Clinic	1
DAST 133	Clinical Training II	5
DAST 142	Dental Materials for the Dental Assistant	3
DAST 144	Biodental Science	2
DAST 151L	Simulation Lab I	1
DAST 152L	Simulation Lab II	1
FYE 101	Science of Success	1
PSYC 111	Introduction to Psychology	3
COMM 110	Fundamentals of Public Speaking	3
CIS 101	Computer Literacy	2
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
BIOL 115	Concepts of Anatomy and Physiology	3
BIOL 115L	Concepts of Anatomy and Physiology Lab	1
or BIOL 220	Anatomy and Physiology I (3)	
BIOL 220L	Anatomy and Physiology I Lab (1)	
and BIOL 221	Anatomy and Physiology II (3)	
BIOL 221L	Anatomy and Physiology II Lab (1)	
ENGL 110	College Composition I	3
English Elective (choose one)		3
ENGL 120	College Composition II	
ENGL 105	Technical Communications	
General Education Electives (To be chosen with advisor)		18
Total Required Credits for Associate		68

The program adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog*. Dental Assisting Program Competencies, Program Goals, and Essential Functions are available on the website at www.ndscs.edu.

A certificate in Dental Assisting is also available. Please see separate fact sheet for additional information.

The Dental Assisting program is fully accredited by the Commission on Dental Accreditation of the American Dental Association, 211 East Chicago Ave, Chicago, IL 60611-2678.

Admission/Selection Requirements*

The following criteria must be complete by **April 1st** prior to entry into the Dental Assisting program. Applicants that apply after the April 1st deadline can complete the selection requirements and be placed on a waiting list. Late applicants may be selected based on points if openings become available until the first day of class fall semester.

1. Complete the NDSCS Admission process and submit an official high school transcript and all official college transcripts to Enrollment Services.
2. Applicants without a United States high school transcript (four years) will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Complete the Supplemental Program Application for Dental Assisting.
4. Submit an official transcript with a minimum of 12 college credits semester credits and a GPA of 2.0 or higher, **OR** a high school transcript with a minimum GPA 2.5 or higher will be used if no college courses.
5. Submit official ACT and/or placement testing results. Results must meet the criteria to enroll into English 110 the first semester of the program or have completed the course with a "C" or higher.
6. Points are awarded for grades in high school biology, algebra and chemistry and college level anatomy. Additional points are awarded for grades in college level courses, concepts of anatomy, and anatomy and physiology.
7. Review career link and submit the Dental Assisting Career Review form.
8. Complete the selection assessment examination and meet the program benchmark score of **45**. The exam can be retaken once. Check with program for current assessment(s) required.
9. Review Essential Functions for Allied Dental Education Students and submit the signed Essential Functions Verification form.

Selection process details contact information and forms are located in the Dental Assisting Program Information and Selection Process Booklet available at www.ndscs.edu/Dental (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

The program is a limited enrollment program. Applicant's will be selected on a point system. Once program capacity is reached, an alternate list will be established based on points. It is recommended that applicants stay in close contact with the program as they complete their admission requirements.

Program Selection Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

For accepted students, specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) OR Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) ONLY), and health insurance, are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on clinical site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Award

Upon successful completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science degree in Dental Assisting. Graduates will meet requirements to become registered within the state and eligible to take the Dental Assisting National Board. A criminal background check will be required, and a felony conviction may affect state licensure.

Revised: April 2022



Dental Hygiene

Dental Hygiene

Contact Information

Stacy Owens, Program Coordinator
Stacy.Owens@ndscs.edu
701-671-2522
Mayme Green Allied Health Center 213N

Delivery Methods

Face to Face: Wahpeton

The Dental Hygiene program is designed to prepare students as professionals in the discipline of dental hygiene. The dental hygienist, a licensed member of the dental health team, provides dental health education, promotes and encourages the preventive aspects of dental care, removes stains and deposits from teeth, exposes and processes dental radiographs, administers local anesthesia, provides many other patient treatment procedures, and assumes other responsibilities in the dental office.

Career Opportunities

Dental hygienists are typically employed in general dental practices or specialty practices. Dental hygienists also can apply their skills and knowledge in other career activities including public health, corporate dental representative, dental office management, and dental hygiene education depending on the level of education and experience they have achieved.

Dental Hygiene Curriculum

The Dental Hygiene program consists of classroom, laboratory and clinical experiences emphasizing skill development, self-assessment, and professionalism offered over five continuous semesters. The majority of the clinical experience is in the NDSCS dental clinic. Students are also assigned to off-campus affiliation sites to enhance their dental hygiene education. Students must provide their own transportation to off-campus affiliation sites. Criminal background checks will be required. A felony charge and/or conviction may affect participation in clinical experience(s), and therefore, program completion. If this issue applies, the student must meet with the department chair.

The program is fully accredited by the Commission on Dental Accreditation of the American Dental Association, 211 East Chicago Ave, Chicago, IL 60611-2678.

The program adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog*. Dental Hygiene Program Competencies, Program Goals, and Essential Functions are available on the website at www.NDSCS.edu.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Course Code	Course Title	Credits
DHYG 101	Pre-Clinic	1
DHYG 101L	Pre-Clinic Lab	3
DHYG 102	Clinic I	1
DHYG 102L	Clinic I Lab	4
DHYG 103	Clinic II	1
DHYG 103L	Clinic II Lab	3
DHYG 110	Oral Anatomy	2
DHYG 112	Oral Embryology and Histology	1
DHYG 114	Dental Radiology	3
DHYG 145	Periodontics I	1
DHYG 151L	Pre-Clinic Simulation Lab	1
DHYG 152L	Simulation Lab I	1
DHYG 153L	Simulation Lab II	1
DHYG 201	Clinic III	1
DHYG 201L	Clinic III Lab	4
DHYG 202	Clinic IV	1
DHYG 202L	Clinic IV Lab	4
DHYG 205	Dental Pharmacology	2
DHYG 209	Head and Neck Anatomy	1
DHYG 210	Local Anesthesia	1
DHYG 212	Oral Pathology	1
DHYG 220	Community Dental Health	2
DHYG 242	Dental Materials	3
DHYG 243	Dental Jurisprudence	1
DHYG 245	Periodontics II	1
DHYG 251L	Simulation Lab III	1
DHYG 252L	Simulation Lab IV	1

Related/General Education Courses

BIOL 213	General Pathology	3
CIS 101	Computer Literacy	2
COMM 110	Fundamentals of Public Speaking	3
FYE 101	Science of Success	1
ENGL 120	College Composition II	3
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 111	Introduction to Psychology	3
SOC 110	Introduction to Sociology	3
Total Required Credits		72

Admission/Selection Requirements*

Applicants will be admitted to the program following a selection process. The following requirements must be met by **March 1** to be considered for selection. Applicants that apply after the March 1 deadline can complete the selection requirements and be placed on a waiting list. Late applicants may be selected based on points if openings become available until the first day of class fall semester.

1. Complete the NDSCS Admission process and submit an official high school transcript and all official college transcripts to Enrollment Services.
2. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Complete the Supplemental Program Application for Dental Hygiene.
4. Submit an official college transcript(s) with a minimum of twelve college semester credits and a GPA of 2.50 or higher.
5. Review career link and submit the Dental Hygiene Career Review form.
6. Complete the selection assessment examination and meet the program benchmark score of **55**. The exam can be retaken once. Check with program for current assessment(s) required.
7. Complete pre-requisite courses by **January 1**: Introductory Chemistry (CHEM 115 and 115L), Anatomy and Physiology I (BIOL 220 and 220L) and College Composition I (ENGL 110). Complete pre-requisite course by **May 15**: Anatomy and Physiology II (BIOL 221 and 221L) with a "C" or higher.
8. Additional admission points will also be awarded for completing classes at NDSCS.
9. Review Essential Functions for Allied Dental Education Students and submit the signed Essential Functions Verification form.

Selection process details, contact information and forms are located in the Dental Hygiene Program Information and Selection Process Booklet available at www.NDSCS.edu/Dental (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

The program is a limited enrollment program. Applicants will be selected on a point system. Once program capacity is reached, an alternate list will be established based on points. It is recommended that applicants stay in close contact with the program as they complete their selection requirements.

Program Selection Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

For accepted students, specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) OR Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) ONLY), and health insurance, are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on clinical site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Licensure requirements for dental hygienists include successful completion of the Dental Hygiene National Board Examination and a regional clinical examination, i.e., CRDTS, WREB. Individual states have additional licensure requirements. A criminal background check will be required and a felony conviction may affect state licensure.

Award

Upon program completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science degree in Dental Hygiene.

Revised: April 2022

Case IH

► Contact Information

Michael Redding, program coordinator
Michael.Redding@ndscs.edu
701-671-2226
Bisek 1171

► Delivery Methods

Face-to-Face: Wahpeton

The Case IH program is designed to develop technically competent, professional service technicians for participating Case IH dealerships.

This program combines state-of-the-art, on-campus training with internships at a sponsoring Case IH dealership. Students receive technical training on Case IH equipment and related products through a combination of classroom instruction and hands-on laboratory experiences. Classroom and laboratory instruction at NDSCS covers the basics of each subject plus the latest developments in Case IH agricultural equipment. Work experience at the dealership reinforces on-campus training and exposes the student to real life shop service practices.

Green technology is addressed through changes in emission standards and alternative fuels that will continue to advance changes in this industry.

The Case IH program takes five semesters or approximately 20 months to complete. The five semesters are divided into 9 terms, each approximately eight weeks in length. Students complete the first, second, third, fifth, seventh, eighth and ninth terms on campus and the fourth and sixth terms at a participating Case IH dealership.

Course Code	Course Title	Credits
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 115	Introduction to Light and Medium Duty Engines	4
DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
MFGT 110	Industrial Shop Practices	2
CIH 106	Case IH Shop Service Management	2
CIH 215	Case IH Engine Rebuild	6
CIH 216	Case IH Equipment Operation and Adjustment	4
CIH 225	Case IH Power Trains	4
CIH 255	Case IH Electrical/Electronics Diagnostics	5
CIH 260	Case IH Advanced Farming Systems	3
CIH 265	Case IH Hydraulic Systems	5
CIH 110	Case IH Internship I	4
CIH 210	Case IH Internship II	4

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Elective(s)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
FYE 101	Science of Success	1

Total Required Credits for Associate 75

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the Diesel Technology Department at 701-671-2330 or academic counselor at 701-671-2257 for strategies to meet the admission requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Diesel Technology with an emphasis in Case IH.

Revised May 2022



Diesel Technology

General Diesel

► Contact Information

Terry Marohl, department chair
Terry.Marohl@ndscs.edu
701-671-2308
Bisek Hall 111

► Delivery Methods

Face-to-Face: Wahpeton

The Diesel Technology program is designed to prepare students for the many employment opportunities in the diesel industry.

This unique program allows students to enter the program at the beginning of any eight-week period. This program gives students the option of earning a diploma or applied science degree. Students are given extensive training and practical experiences in servicing all types of engines, drive trains, hydraulic systems and electrical systems found on trucks, agricultural and industrial equipment.

Students enrolled in Diesel Technology learn the theory of operation along with the latest repair and diagnostic procedures available in the diesel industry. Training facilities are in excellent condition and labs are very well-equipped.

Green technology is addressed through changes in emission standards and alternative fuels that will continue to advance changes in this industry.

Students graduating from Diesel Technology are fully employable upon completion of this program. Diesel Technology graduates are employed by agricultural, industrial (truck and heavy equipment), construction equipment companies, mining industries or fleet owners. Some students may wish to continue their education by returning for an additional year and earn a minor in Automotive Technology.

Students seeking an Associate in Applied Science degree are required to complete both English 105 and 110, Math 125 and 324 hours of work experience (DTEC 297).

The Diesel Technology program is accredited by the AED Foundation and the National Automotive Technicians Education Foundation, Inc. (NATEF) at the Automotive Service Excellence (ASE) Master Automobile Service Technology level.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a diploma or an Associate in Applied Science degree in Diesel Technology – General Diesel.

Course Code	Course Title	Credits
Diploma		
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 110	Diesel Equipment Maintenance	3
DTEC 115	Introduction to Light and Medium Duty Engines	4
DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 135	Medium/Heavy Duty Brake Systems	2
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 215	Heavy Duty Diesel Engines	7
DTEC 225	Heavy Duty Drive Systems	7
DTEC 255	Heavy Duty Chassis Electrical Systems	7
DTEC 265	Mobile Hydraulic Systems Diagnostics and Repair	7
MFGT 110	Industrial Shop Practices	2

Associate in Applied Science

DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 110	Diesel Equipment Maintenance	3
DTEC 115	Introduction to Light and Medium Duty Engines	4
DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 135	Medium/Heavy Duty Brake Systems	2
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 215	Heavy Duty Diesel Engines	7
DTEC 225	Heavy Duty Drive Systems	7
DTEC 255	Heavy Duty Chassis Electrical Systems	7
DTEC 265	Mobile Hydraulic Systems Diagnostics and Repair	7
DTEC 297	Cooperative Education for Diesel Technology	2
MFGT 110	Industrial Shop Practices	2

Related/General Education Courses

Diploma		
ENGL 105	Technical Communications	3
or ENGL 110	College Composition I (3)	
Wellness Elective(s)		2
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations in Organizations – 2 cr	
FYE 101	Science of Success	1

Associate in Applied Science

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Wellness Elective(s)		2
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations in Organizations – 2 cr	
FYE 101	Science of Success	1
Total Required Credits for Diploma		66
Total Required Credits for Associate in Applied Science		73

* Diploma students take ENGL 105 or ENGL 110

Suggested sequence of study

All 100 course classes must be completed before advancing to the 200 course classes.

NOTE: Students may enter this program at the beginning of any semester. A student may be able to start in the middle of a semester; for information please contact the Diesel Technology Department.

Revised May 2022

Komatsu

► Contact Information

Terry Marohl, department chair
Terry.Marohl@ndscs.edu
701-671-2308
Bisek Hall 1135

► Delivery Methods

Face-to-Face: Wahpeton

The Komatsu program is designed to develop technically competent, professional service technicians for participating Komatsu dealers regionally and throughout the world.

This program combines state-of-the-art, on-campus training with internships at a sponsoring Komatsu dealership. Students receive technical training on Komatsu equipment through a combination of classroom instruction and hands-on laboratory experiences. Classroom and laboratory instruction at NDSCS covers the basics of each subject plus the latest developments in Komatsu construction equipment. Work experience at the dealership reinforces on-campus training and exposes the student to real life shop service practices.

Green technology is addressed through changes in emission standards and alternative fuels that will continue to advance changes in this industry.

The Komatsu program takes five semesters or approximately 20 months to complete. The five semesters are divided into 9 terms, each approximately eight weeks in length. Students complete the first, second, third, fifth, seventh, and ninth terms on campus and the fourth, sixth and eighth terms at a sponsoring Komatsu dealership.

Admission Requirements

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the Diesel Technology Department at 701-671-2330 or the academic counselor at 701-671-2257 for strategies to meet the admission requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Diesel Technology with an emphasis in Komatsu.

Course Code	Course Title	Credits
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 115	Introduction to Light and Medium Duty Engines	4
DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
MFGT 110	Industrial Shop Practices	2
KMTS 106	Introduction to Komatsu Service	3
KMTS 215	Komatsu Engine and Fuel Systems	5
KMTS 225	Komatsu Powertrains and Undercarriage	4
KMTS 255	Komatsu Electrical/Electronics	4
KMTS 265	Komatsu Advanced Hydraulics Systems	4
KMTS 110	Komatsu Internship I	4
KMTS 210	Komatsu Internship II	5
KMTS 220	Komatsu Internship III	5

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Elective(s)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
FYE 101	Science of Success	1

Total Required Credits for Associate 72

Revised May 2022



Diesel Technology

Automotive and Diesel Master Technician

Contact Information

Terry Marohl, department chair
Terry.Marohl@ndscs.edu
701-671-2308
Bisek Hall 111

Delivery Methods

Face-to-Face: Wahpeton

This is a third-year option developed for students who complete Diesel Technology and want to continue their education and increase their technical and mechanical skills. The dual major will strengthen the marketability of students for employment in diesel, automotive and related fields of business and industry. This curriculum is for students who complete Diesel Technology and then go to Automotive Technology. Admission into the Automotive and Diesel Master Technician program is dependent on the availability of open seats in each program area. Please check with the Transportation Department Chair for current information.

The Automotive and Diesel Master Technician program prepares students for employment in the vast and broad diesel and automotive industry. Students are provided with experiences emphasizing diagnostic and repair skills with extensive shop time. Students test, diagnose, adjust and repair all types of drivetrains, engines, hydraulic systems, steering and suspension systems. Students' abilities in communications, human relations, and other aspects of general education also are enhanced through coursework.

Green technology is addressed through changes in emission standards and alternative fuels that will continue to advance changes in this industry.

This practical education will allow graduates to work in dealerships, independent shops or national service centers. Graduates work as automotive technicians, truck technicians, tractor technicians, heavy equipment technicians and other related jobs. Many graduates have advanced from technicians to team leaders, service writers, service managers, owners and vocational teachers.

Students interested in pursuing an advanced degree will find the Associate in Applied Science degree in Automotive Technology provides transfer options to four-year colleges and universities in related fields.

The Automotive Technology program is master certified by the National Institute for Automotive Service Excellence (ASE). The Diesel Technology program is accredited by the AED Foundation.

NOTE: This program requires an EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. For further information, contact Terry Marohl, department chair, at 701-671-2308. **The laptop is required for the Automotive courses during 3rd year.**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements. Students who complete Diesel Technology with a Diploma will need to complete additional courses to meet the AAS requirements for Automotive and Diesel Master Technician.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the Diesel Technology Department at 701-671-2330 or the academic counselor at 701-671-2257 for strategies to meet the admission requirements.

Course Code	Course Title	Credits
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 110	Diesel Equipment Maintenance	3
DTEC 115	Introduction to Light and Medium Duty Engines	4
DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 135	Medium/Heavy Duty Brake Systems	2
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 215	Heavy Duty Diesel Engines	7
DTEC 225	Heavy Duty Drive Systems	7
DTEC 255	Heavy Duty Chassis Electrical Systems	7
DTEC 265	Mobile Hydraulic Systems Diagnostics and Repair	7
DTEC 297	Cooperative Education for Diesel Technology	2
MFGT 110	Industrial Shop Practices	2

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Wellness Elective(s)		2
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
FYE 101	Science of Success	1

Automotive Technology (Minor)

Specific Program Courses

AUTO 206	Chassis Repair/Body Electrical	7
AUTO 216	Engine Repair	7
AUTO 226	Automotive Transmission/Transaxles	7
AUTO 286	Driveability Procedures	7

Total Required Credits **101**

Students in this emphasis will complete the Diesel curriculum prior to taking Automotive Technology.

Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Automotive and Diesel Master Technician.

Revised May 2022

Electrical Construction

► Contact Information

Ivan Maas, department chair
Ivan.Maas@ndscs.edu
701-671-2662
Barnard Hall 115

► Delivery Methods

Face-to-Face: Wahpeton

The Electrical Construction option of the Electrical Technology program is designed to give students the skills necessary for successful employment in the electrical construction industry. The core curriculum of the Electrical Technology program includes an in-depth study of electrical theory, applied math, code study and residential wiring. A substantial amount of hands-on experience is provided in our seven dedicated laboratories, which contain AutoCAD drawing, advanced electrical test equipment, electric motors, magnetic motor starters, programmable controllers, electronic devices, and instrumentation. Green technology is applied in areas of lighting and design class, efficiency of motors, controlling of loads (lighting, AC, etc.) in building operation through programmable controllers (PLCs).

The Electrical Construction option adds skills in the area of commercial and industrial wiring systems, advanced code study and planning and estimating. Graduates of this option are well prepared to meet the challenges of today's modern equipment and wiring systems thanks, in part, to the faculty who collectively have over 200 years of industry and training experience.

Graduates of this option are also exempt from the mandatory classroom training required by North Dakota law (ND Century Code 43-09-11).

While students are fully employable upon completion of this associate-granting program, some elect to return for another year of training, earning the Electrical Master Technician degree (please refer to the Electrical Technology, Electrical Master Technician). Other students may wish to continue their education by returning for an additional year, combining Electrical Technology with Robotics, Automation and Mechatronics, HVAC/R, Plumbing, or business classes. Students may transfer to four-year colleges and universities for a bachelor's degree in programs such as Construction Management or Engineering Technology.

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. Contact the NDSCS ITS Department for more information and to reserve/purchase a laptop at 701-671-3333 option 5.

For further information regarding the Electrical Department, contact Ivan Maas, department chair at 701-671-2662.

Course Code	Course Title	Credits
ECAL 101	Direct Current (DC) Fundamentals	5
ECAL 102	Alternating Current (AC) Fundamentals	5
ECAL 103	Electrical Code Study	4
ECAL 111	Electric Meters and Motors Lab	3
ECAL 133	Basic Wiring Lab	3
ECAL 137	Electrical Drafting	2
ECAL 201	Three-Phase Electrical Systems	5
ECAL 205	Electrical Design and Lighting	3
ECAL 211	AC Measurements	4
ECAL 223	Electronic Devices/Lab	4
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3

Electrical Construction Courses

ECAL 203	Advanced Electrical Code Study	3
ECAL 204	Electrical Planning and Estimating	4
ECAL 233	Commercial Wiring Laboratory	3

Related/General Education Courses

FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 132	Technical Algebra I	2
MATH 134	Technical Algebra II	2
MATH 136	Technical Trigonometry	2
HPER	Wellness Elective(s)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits **73**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Electrical Technology, Electrical Construction. This is the only program/degree in the ND University System which also qualifies most graduates for the 2,000 hours of apprenticeship credit for North Dakota, South Dakota, and Minnesota.

Revised: May 2022



Electrical Technology

Industrial Electrical

► Contact Information

Ivan Maas, department chair
Ivan.Maas@ndscs.edu
701-671-2662
Barnard Hall 115

► Delivery Methods

Face-to-Face: Wahpeton

The Industrial Electrical option of the Electrical Technology program is designed to give students the skills necessary for successful employment in the industrial sector of the electrical industry. The core curriculum of the Electrical Technology programs includes in-depth study of electrical theory, applied math, code study and residential wiring. A substantial amount of hands-on experience is provided in our seven dedicated laboratories, which contain AutoCAD drawing, advanced electrical test equipment, electric motors, magnetic motor starters, programmable controllers, electronic devices and instrumentation. Green technology is applied in areas of lighting and design class, efficiency of motors, controlling of loads (lighting, AC, etc.) in building operation through programmable controllers (PLCs).

The Industrial Electrical option adds skills in the area of automated industrial controls (robotics, pneumatics and digital electronics) as well as large motors and the electronic drives that control those motors. Graduates of this option find employment as maintenance technicians for manufacturing firms, power companies and processing plants. They also have opportunities to work as engineering technicians in the design, manufacturing and sales of electrical equipment. This flexibility in employment is made possible by the department's eight faculty members who collectively have over 200 years of industry and training experience.

Graduates of this option are also exempt from the mandatory classroom training required by North Dakota law (ND Century Code 43-09-11).

While students are fully employable upon completion of this associate-granting program, some elect to return for another year of training, earning the Electrical Master Technician degree (please refer to the Electrical Technology, Electrical Master Technician). Other students may wish to continue their education by returning for an additional year, combining Electrical Technology with Robotics, Automation and Mechatronics, HVAC/R, Plumbing, or business classes. Students may transfer to four-year colleges and universities for a bachelor's degree in programs such as Construction Management or Engineering Technology.

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. Contact the NDSCS ITS Department for more information and to reserve/purchase a laptop at 701-671-3333 option 5.

For further information regarding the Electrical Department, contact Ivan Maas, department chair at 701-671-2662.

Course Code	Course Title	Credits
ECAL 101	Direct Current (DC) Fundamentals	5
ECAL 102	Alternating Current (AC) Fundamentals	5
ECAL 103	Electrical Code Study	4
ECAL 111	Electric Meters and Motors Lab	3
ECAL 133	Basic Wiring Lab	3
ECAL 137	Electrical Drafting	2
ECAL 201	Three-Phase Electrical Systems	5
ECAL 205	Electrical Design and Lighting	3
ECAL 211	AC Measurements	4
ECAL 223	Electronic Devices/Lab	4
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3

Industrial Courses

ECAL 224	Automated Industrial Controls Lab	5
ECAL 242	Advanced Drives/Lab	2
ECAL 253	Introduction to Instrumentation Lab	3

Related/General Education Courses

FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 132	Technical Algebra I	2
MATH 134	Technical Algebra II	2
MATH 136	Technical Trigonometry	2
HPER	Wellness Elective(s)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits **73**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Electrical Technology, Industrial Electrical. This is the only program/degree in the ND University System which also qualifies most graduates for the 2,000 hours of apprenticeship credit for North Dakota, South Dakota, and Minnesota.

Revised: May 2022

Electrical Technology

Electrical Master Technician

► Contact Information

Ivan Maas, department chair
Ivan.Maas@ndscs.edu
701-671-2662
Barnard Hall 115

► Delivery Methods

Face-to-Face: Wahpeton

The Electrical Master Technician curriculum is designed to meet the diverse needs of the construction and industrial sectors of the electrical field. This curriculum broadens the student's perspective on the industry with training in alternative energy sources, building control systems, predictive maintenance and automation.

The Electrical Master Technician curriculum builds on the strengths of a two-year degree in Electrical Construction or Industrial Electrical in a 3rd year. It adds cutting-edge technology in medium and high voltage, instrumentation, fiber optics, structured wiring, HVAC/R and other building controls.

The successful completion of the Master Technician program exceeds the number of classroom hours required by the Electrical Boards of North Dakota, Minnesota and South Dakota, thus qualifying graduates for a full year (2,000 hours) work exemption as typically granted by those boards. The NDSCS Electrical Technology program is the only program in the North Dakota University System qualified to receive this credit for hours.

This program also exempts graduates from the mandatory classroom training required by North Dakota law (ND Century Code Section 43-09-11) for all registered electrical apprentices.

Other links of interest:

www.ndseb.com
www.electricity.state.mn.us/BOE.asp
<http://dol.sd.gov/bdcomm/electric/>
www.bls.gov/oco/ocos206.htm#addinfo

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. Contact the NDSCS ITS Department for more information and to reserve/purchase a laptop at 701-671-3333 option 5.

For further information regarding the Electrical Department, contact Ivan Maas, department chair at 701-671-2662.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.NDSCS.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Electrical Technology.

Course Code	Course Title	Credits
ECAL 101	Direct Current (DC) Fundamentals	5
ECAL 102	Alternating Current (AC) Fundamentals	5
ECAL 103	Electrical Code Study	4
ECAL 111	Electric Meters and Motors Lab	3
ECAL 133	Basic Wiring Lab	3
ECAL 137	Electrical Drafting	2
ECAL 201	Three-phase Electrical Systems	5
ECAL 205	Electrical Design and Lighting	3
ECAL 211	AC Measurements	4
ECAL 223	Electronic Devices/Lab	4
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3

Electrical Construction Courses

ECAL 203	Advanced Electrical Code Study	3
ECAL 204	Electrical Planning and Estimating	4
ECAL 233	Commercial Wiring Laboratory	3

Industrial Electrical Courses

ECAL 224	Automated Industrial Controls Lab	5
ECAL 242	Advanced Drives/Lab	2
ECAL 253	Introduction to Instrumentation Lab	3

Additional Master Technician Courses

ECAL 105	Electrical Safety I and NFPA 70E	1
ECAL 237	House Wiring Rough-In	1
ECAL 238	House Wiring Trim-Out	1
ECAL 245	Medium and High Voltage	1
ECAL 246	Alarm, Communications and Data Systems	3
ECAL 254	Instrumentation and Control Systems	4
ECAL 255	Process Measurement and Control Valves	4
ECAL 261	HVAC and Building Systems	2
ECAL 263	Distributed Electrical Systems	3
RAMT 107	Mechanical Drives and Maintenance I	2
RAMT 109	Mechanical Drives and Maintenance II	2
RAMT 244	System Integration and Troubleshooting	2

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
MATH 132	Technical Algebra I	2
MATH 134	Technical Algebra II	2
MATH 136	Technical Trigonometry	2
Wellness Elective(s)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits

109

Revised: May 2022



Emergency Medical Services (EMS)

Emergency Medical Technician (Certificate)

► Contact Information

Kelly Wanzek, program coordinator
Kelly.Kenner@ndscs.edu
701-364-1738

► Delivery Methods

Face-to-Face: Fargo
Online: Some Classes
Combination
*Hybrid online lectures with weekend labs

Course Code	Course Title	Credits
*EMS 101	Introduction into EMS	2
EMS 110	EMT Fundamentals	2
EMS 110L	EMT Fundamentals Lab	1
EMS 110P	EMT Practicum	1
**Total required core credits		6

NDSCS offers a program certificate in Emergency Medical Technician (EMT).

The Emergency Medical Technician (EMT) program offers career training for entry-level positions in an emergency medical setting. Those students who successfully complete the EMT coursework will be eligible to apply to take state or national certification exams.

As members of the emergency medical services system, EMTs respond to emergency calls to provide efficient and immediate care to the critically ill and injured and transport patients to appropriate medical facilities.

EMTs use communication skills in person, via radio and in writing. A solid foundation in the basic elements of emergency pre-hospital care is developed and is required to make sound judgments in critical circumstances. Duties include patient assessment, airway and ventilation management, CPR, bleeding control, bandaging and splinting, administration of certain medications and even the use of automated external defibrillators. EMTs also help with childbirth, cardiac, respiratory and endocrine emergencies, behavioral problems, extrication and lifting and moving patients under the authority of an approved medical director.

EMTs are employed by many organizations, public and private, emergency and non-emergency. These include: ambulance companies, fire departments, recreational facilities, law enforcement, hospitals, educational institutions, care centers, search and rescue squads, transfer services, and others. Positions range from volunteer services to part and full-time employment.

Students who successfully complete the EMT NREMT exam may choose to also pursue a certificate or an Associate in Applied Science degree in Paramedic Technology from NDSCS.

* Special computer and internet requirements for hybrid delivery, please check with program for specific requirements.

Related/General Education Courses:

BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
FYE 101	Science of Success	1
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
***ENGL 110	College Composition I	
COMM 110	Fundamentals of Public Speaking	
Social and Behavioral Science Electives		2
ECON, HIST, POLS, PSYC, SOC, or CIS/CSCI Electives.		
(Note: maximum of two CIS/CSCI credits may be used for this category).		
HPER Electives		2

Total Required Credits for Certificate **18**

*Completion of EMS 101 ("C" or higher) within 5 years will transfer into Paramedic Program.

**Upon successful completion of the required core courses ("C" or higher) students will be eligible to take the EMT NREMT exam.

***ENGL 110 is required for Paramedic AAS degree

Admission Requirements*

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

1. Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
2. Hold a current State or National Registry of Emergency Medical Technicians (NREMT) EMT certification.
3. Submit official ACT and/or Placement testing results to **Enrollment Services**. Results must meet criteria to enroll in English 110 fall semester **OR** submit an official college transcript with ENGL 110 completed with a "C" or higher.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, ("C" or higher) students will be awarded a certificate in Emergency Medical Services (EMS) with an emphasis in Emergency Medical Technician.

Revised: May 2022

Emergency Medical Services (EMS)



Paramedic Technology (Certificate)

► Contact Information

Kelly Wanzek, program coordinator
Kelly.Kenner@ndscs.edu
701-364-1738

► Delivery Methods

Face-to-Face: Fargo
*Hybrid: Live-video and
Face-to-Face

The Paramedic Technology program is designed to prepare the student with the necessary skills to complete national certification and obtain employment as a paramedic. Paramedics primarily provide care to emergency patients in an out of hospital setting. Through proper patient assessment and medical care, the paramedic's goal is to prevent and reduce mortality and morbidity due to illness and injury. Paramedics are an essential component of the continuum of care and serve as a link to other health care professionals. Paramedics are responsible and accountable to physician medical direction.

NDSCS offers a certificate program and an Associate in Applied Science degree in Paramedic Technology and is affiliated with F-M Ambulance Service and Sanford Health EMS Education in Fargo. Courses start in the fall of each year. The program length will be three semesters including the summer semester.

Clinical and field internship experiences will be completed concurrently with the classroom schedule. Numerous hospitals and ambulance services across North Dakota, South Dakota and Minnesota are utilized. Students may need to drive various distances to clinical sites. Additional clinical sites can be added to suit student needs. Specific immunizations and a current American Heart Association Healthcare Provider CPR card will be required before the start of clinicals.

During orientation, students will be required to pay for and complete a background check. A previous misdemeanor or felony can prevent a student from attending clinical sites and completing the program. If you have any concerns about your history, please contact the Paramedic program coordinator.

EMS accreditation was recommended by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP), 8301 Lakeview Parkway Suite 111-312, Rowlett, TX 75088, Phone: 214-703-8445, Fax: 214-703-8992, www.coaemsp.org. Upon completion of the certificate or degree program, students will be eligible to take the NREMT paramedic exams.

* Special computer and internet requirements for hybrid delivery, please check with program for specific requirements.

Course Code	Course Title	Credits
EMS 101	Introduction into EMS	2
EMS 180	Pharmacology I	1
EMS 203	Pharmacology II	2
EMS 204	Medical Emergencies I	2
EMS 205	Medical Emergencies II	2
EMS 207	Special Populations in EMS	2
EMS 215	Cardiology	4
EMS 217	Airway & Respiratory Management	3
EMS 218	Clinical Decision Making in EMS	1
EMS 219	Trauma in EMS	3
EMS 231	Paramedic Lab I	2
EMS 232	Paramedic Simulation Lab	2
EMS 233	Advanced Life Support Lab	3
EMS 234	Paramedic Assessment Lab	1
EMS 241	Advanced Provider Practicum I	2
EMS 242	Advanced Provider Practicum II	4
EMS 243	Capstone in Paramedicine	3

Related/General Education Courses:

*BIOL 221	Anatomy and Physiology II	3
*BIOL 221L	Anatomy and Physiology II Lab	1
Wellness Elective		1
FYE 101	Science of Success	1

Total Required Credits for Associate **45**

* Program prerequisite: BIOL 220 Anatomy and Physiology I and BIOL 220L Anatomy and Physiology I Lab (See *Admission Requirement #5*).

An Associate in Applied Science degree is also available. Please see separate fact sheet for additional information.

NOTE: This program requires a tablet with a 7-inch screen or larger. For further information, please contact the program coordinator.

Admission Requirements*

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

1. Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
2. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Hold a current State or National Registry of Emergency Medical Technicians (NREMT) EMT or AEMT certification. Applicants not holding an EMT/AEMT certification, upon successful completion of EMS101, 110, 110L and 110P with a "C" or higher, can be eligible to apply to test the NREMT EMT exam for certification.
4. Submit official ACT and/or Placement testing results to Enrollment Services. Results must meet criteria to enroll in English 110 and MATH 103 fall semester OR submit an official college transcript with ENGL 110 and MATH 103 completed with a "C" or higher.

5. *Completion of BIOL 220 and BIOL 220L with a "C" or higher.
6. Applicants will participate in a formal interview process with the Paramedic Program faculty to discuss the internship shifts as well as expectations of the program. Interview points will be graded on a rubric.

Class selection process will be determined by the completion of admission requirements and slots will be filled by order of those who have completed all requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, ("C" or higher) students will be awarded a certificate or an Associate in Applied Science degree in Paramedic Technology.

Revised: May 2022



Emergency Medical Services (EMS)

Paramedic Technology (AAS degree)

► Contact Information

Kelly Wanzek, program coordinator
Kelly.Kenner@ndscs.edu
701-364-1738

► Delivery Methods

Face-to-Face: Fargo
*Hybrid: Live-video and
Face-to-Face

The Paramedic Technology program is designed to prepare the student with the necessary skills to complete national certification and obtain employment as a paramedic. Paramedics primarily provide care to emergency patients in an out of hospital setting. Through proper patient assessment and medical care, the paramedic's goal is to prevent and reduce mortality and morbidity due to illness and injury. Paramedics are an essential component of the continuum of care and serve as a link to other health care professionals. Paramedics are responsible and accountable to physician medical direction.

NDSCS offers a certificate program and an Associate in Applied Science degree in Paramedic Technology and is affiliated with F-M Ambulance Service and Sanford Health EMS Education in Fargo. Courses start in the fall of each year. The program length will be three semesters including the summer semester.

Clinical and field internship experiences will be completed concurrently with the classroom schedule. Numerous hospitals and ambulance services across North Dakota, South Dakota, and Minnesota are utilized. Students may need to drive various distances to clinical sites. Additional clinical sites can be added to suit student needs. Specific immunizations and a current American Heart Association Healthcare Provider CPR card will be required before the start of clinicals.

During orientation, students will be required to pay for and complete a background check. A previous misdemeanor or felony can prevent a student from attending clinical sites and completing the program. If you have any concerns about your history, please contact the Paramedic program coordinator.

EMS accreditation was recommended by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP), 8301 Lakeview Parkway Suite 111-312, Rowlett, TX 75088, Phone: 214-703-8445, Fax: 214-703-8992, www.coaemsp.org. Upon completion of the certificate or degree program, students will be eligible to take the NREMT paramedic exams.

NOTE: This program requires a tablet with a 7-inch screen or larger. For further information, please contact the program coordinator.

* Special computer and internet requirements for hybrid delivery, please check with program for specific requirements.

Course Code	Course Title	Credits
EMS 101	Introduction into EMS	2
EMS 180	Pharmacology I	1
EMS 203	Pharmacology II	2
EMS 204	Medical Emergencies I	2
EMS 205	Medical Emergencies II	2
EMS 207	Special Populations in EMS	2
EMS 215	Cardiology	4
EMS 217	Airway & Respiratory Management	3
EMS 218	Clinical Decision Making in EMS	1
EMS 219	Trauma in EMS	3
EMS 231	Paramedic Lab I	2
EMS 232	Paramedic Simulation Lab	2
EMS 233	Advanced Life Support Lab	3
EMS 234	Paramedic Assessment Lab	1
EMS 241	Advanced Provider Practicum I	2
EMS 242	Advanced Provider Practicum II	4
EMS 243	Capstone in Paramedicine	3
EMS 255	Leadership in EMS	2
EMS/HPER Electives		2

Related/General Education Courses:

BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
Wellness Elective		2
FYE 101	Science of Success	1
ENGL 110	College Composition I	3
ENGL/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Social and Behavioral Science Electives		5
ECON, HIST, POLS, PSYC, SOC, or CIS/CSCI Electives.		
(Note: maximum of two CIS/CSCI credits may be used for this category).		

Total Required Credits for Associate 65

Certificate is also available. Please see separate fact sheet for additional information.

Admission Requirements*

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

- Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
- Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
- Hold a current State or National Registry of Emergency Medical Technicians (NREMT) EMT or AEMT certification. Applicants not holding an EMT/AEMT certification, upon successful completion of EMS101, 110, 110L and 110P with a "C" or higher, can be eligible to apply to test the NREMT EMT exam for certification.
- Submit official ACT and/or Placement testing results to Enrollment Services. Results must meet criteria to enroll in English 110 and MATH 103 fall semester OR submit an official college transcript with ENGL 110 and MATH 103 completed with a "C" or higher.
- Completion of BIOL 220 and BIOL 220L with a "C" or higher.

- Applicants will participate in a formal interview process with the Paramedic program faculty to discuss the internship shifts as well as expectations of the program. Interview points will be graded on a rubric.

Class selection process will be determined by the completion of admission requirements and slots will be filled by order of those who have completed all requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, ("C" or higher) students will be awarded a certificate or an Associate in Applied Science degree in Paramedic Technology.

Revised: May 2022

Health Information

Health Information Technician

► Contact Information

Dr. Kaila Givens, RHIA
department chair
Kaila.Givens@ndscs.edu
701-671-2269

► Delivery Methods

Face-to-Face: Wahpeton
Online: All Classes
Combination

Health information professionals care for patients by caring for their medical data, focusing on completeness, accuracy and protection. They use computer applications to organize, analyze, evaluate, and report health data, complying with laws, standards, and regulations. Health information technicians often specialize in coding diagnoses and procedures in health records for reimbursement and other purposes.

NDSCS offers North Dakota's only health information technician program accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

According to the Bureau of Labor Statistics, employment of health information technicians is projected to grow 13 percent from 2016 to 2026; faster than the average for all occupations.

Work settings include hospitals, long-term care, behavioral health facilities, home health agencies, insurance companies, physician practices, software vendors, consulting and auditing firms, government agencies, and other facilities outside of healthcare. With appropriate experience, RHITs may be employed remotely (at-home).

Graduates may pursue a bachelor's degree at another institution, and/or obtain specialty certifications for further advancement and management opportunities in the profession.

Academic training includes online learning laboratories. Students will participate in two virtual professional practice courses, including an onsite experience. Whenever possible, the onsite experience is scheduled in the student's geographic area. Tuition and fees are assessed for these courses.

*A criminal background check, drug testing, and other health-related documentation is required prior to starting on-site professional practice experience. Results may affect placement and the student's ability to complete the program of study. These requirements are at the student's expense.

Delivery Options

The program is available both online and on-campus. Online students complete all courses online, while on-campus students complete HIT prefix courses online and most related/general education courses in a traditional classroom.

Students with transfer credits may apply for a waiver of the FYE 101 course. Other transfer credit will be evaluated per college policy.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are computer applications, anatomy, and medical terminology.

Submit official ACT and/or Placement testing results to **Enrollment Services**. Results must meet criteria to enroll in English 110 fall **OR** must submit an official college transcript with ENGL 110 completed with a "C" or higher.

Applicants must have the ability to perform the *Essential Program Requirements* as listed in the Health Information Program Information FAQ file on the college website www.NDSCS.edu.

*Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Course Code	Course Title	Credits
HIT 176	Introduction to Health Information	4
HIT 180	Pathopharmacology	3
HIT 181	Healthcare Delivery Systems	3
HIT 184	Basic Diagnosis Coding	3
HIT 185	Basic Procedure Coding	3
HIT 197	Professional Practice I	2
HIT 280	Coding Application (8 wks.)	2
HIT 281	Health Law, Privacy and Ethics	3
HIT 282	Health Information Data Analytics	3
HIT 283	Health Information Leadership (8 wks.)	2
HIT 284	Healthcare Quality Management	3
HIT 285	Reimbursement Methodologies	3
HIT 286	Intermediate Diagnosis Coding	3
HIT 287	Computer Applications in Healthcare	3
HIT 288	Intermediate Procedure Coding	3
HIT 297	Professional Practice II	2

Related/General Education Courses

BIOL 220**	Anatomy and Physiology I	3
BIOL 221**	Anatomy and Physiology II	3
BOTE 171	Medical Terminology	4
COMM 110	Fundamentals of Public Speaking	3
CSCI 116	Business Use of Computers	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER	Elective(s)	2
PSYC 100	Human Relations in Organizations	2

Total Required Credits

69

**BIOL 220L and BIOL 221L are recommended for students who are planning to complete a transfer degree at a later time.

Curriculum Requirements

A grade of "C" or above must be achieved in all courses in order to advance in the program and prior to taking the professional practice courses. Required computer skills include the ability to use email, upload and download files, install software, and navigate the internet. The program is sequenced with pre/co-requisites.

Accreditation

The Health Information Management accreditor of NDSCS is the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). All inquiries about the program's accreditation status should be directed by mail to CAHIIM, 200 East Randolph Street, Suite 5100, Chicago, IL, 60601; by phone at (312) 235-3255; or by email at info@cahim.org.

Program Goals and Student Learning Outcomes

Published in program handbook.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Health Information with an emphasis in Health Information Technician.

As early as the final semester of the program, students are eligible to sit for the national certification examination administered by the American Health Information Management Association to become a Registered Health Information Technician (RHIT).

Revised: May 2022



Health Information

Medical Coding

Contact Information

Dr. Kaila Givens, RHIA
department chair
Kaila.Givens@ndscs.edu
701-671-2269

Delivery Methods

Face-to-Face: Wahpeton
Online: All Classes
Combination

Coders review medical documentation, using classification system software and assign medical codes. The codes are used for billing, research, statistics, reporting, and administrative purposes. Work settings include hospitals, clinics, home health agencies, long-term care, insurance, consulting and auditing firms, and healthcare software companies. With appropriate experience, coders may be employed remotely (at-home).

NDSCS offers North Dakota's only medical coding certificate approved by the AHIMA Professional Certificate Approval Program (PCAP).

According to the Bureau of Labor Statistics, employment of health information technicians (classification includes medical coders) is projected to grow 13 percent from 2016 to 2026, faster than the average for all occupations.

Coding guidelines will be studied in detail, as well as concepts in insurance and reimbursement concepts, including payment systems.

Students can easily continue their education by completing the additional courses in the Health Information Technician AAS degree program option. Additional coding certifications are desirable after the graduate attains work experience, for further advancement in the profession.

Practicum

Academic training includes online learning laboratories. At the end of the program, students will complete a capstone virtual practicum, coding a variety of types of authentic health records, using encoder/grouping software.

Delivery Options

The program is available both online and in a traditional campus environment. Online students complete all courses online, while on-campus students complete HIT prefix courses online and most related/general education courses in a traditional classroom.

Transfer credit will be evaluated per college policy.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are computer applications, anatomy, and medical terminology.

Submit official ACT and/or Placement testing results to **Enrollment Services**

Applicants must have the ability to perform the *Essential Program Requirements* as listed in the Health Information Program Information FAQ file on the college website www.ndscs.edu.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Curriculum Requirements

A grade of "C" or above must be achieved in all courses in order to advance in the program and prior to taking the practicum course. Required computer skills including ability to use email, upload and download files, install software and navigate the internet. The program is sequenced with pre/co-requisites.

Course Code	Course Title	Credits
HIT 176	Introduction to Health Information	4
HIT 180	Pathopharmacology	3
HIT 184	Basic Diagnosis Coding	3
HIT 185	Basic Procedure Coding	3
HIT 285	Reimbursement Methodologies	3
HIT 286	Intermediate Diagnosis Coding	3
HIT 287	Computer Applications in Healthcare	3
HIT 288	Intermediate Procedure Coding	3
HIT 197C	Practicum	2

Related/General Education Courses

BIOL 220**	Anatomy and Physiology I	3
BIOL 221**	Anatomy and Physiology II	3
BOTE 171	Medical Terminology	4
CSCI 116	Business Use of Computers	3
FYE 101	Science of Success	1

Total Required Credits **41**

**BIOL 220L and BIOL 221L are recommended for students who are planning to complete a transfer degree at a later time.

Program Approval Statement

The North Dakota State College of Science comprehensive coding program is approved by the AHIMA Professional Certificate Approval Program (PCAP). This designation acknowledges the coding program as having been evaluated by a peer review process using a national minimum set of standards for entry-level coding professionals. This process allows academic institutions to be acknowledged as offering an AHIMA Approved Coding Certificate Program.

"Value for Students" Statement

The valuable AHIMA PCAP approval designation:

- Identifies specialized programs that meet established coding educational standards.
- Stimulates improvement of educational standards through faculty development opportunities, and by involving faculty and staff in program evaluation and planning.
- Promotes a better understanding of the goals of professional coding education.
- Provides reasonable assurance that practitioners possess the necessary job skills upon entry into the profession.

Program Goals and Student Learning Outcomes

Published in program handbook.

Award

Upon successful completion of the required courses, students will be awarded a certificate in Health Information with an emphasis in Medical Coding.

AHIMA sponsors a voluntary entry-level coding certification examination, the Certified Coding Associate (CCA). The CCA credential distinguishes coders by exhibiting commitment and demonstrating coding competencies across all settings, including both hospitals and physician practices. Completion of an AHIMA-approved coding program (PCAP Program) is one of the training and recommendations listed on the AHIMA website (www.ahima.org).

Revised: May 2022

Heating, Ventilating, Air Conditioning and Refrigeration Technology

► Contact Information

Jeff Kukert, program coordinator
Jeffrey.Kukert@ndscs.edu
701-671-2515
Barnard Hall 122

► Delivery Methods

Face-to-Face: Wahpeton

The Heating, Ventilating, Air Conditioning, and Refrigeration (HVAC/R) Technology program provides a balance of theory and application, in keeping with the philosophy of the North Dakota State College of Science. This includes a solid foundation of the principles of heating, ventilation, air conditioning, and refrigeration combined with extensive laboratory experience.

While in the lab, students learn to test, systematically troubleshoot, repair, and maintain electrical and mechanical HVAC/R systems and components. Residential and light commercial heating, ventilating, and air conditioning along with food preservation refrigeration are the focus of the program.

Because of the continuing demand for technicians, an HVAC/R graduate can easily find employment in any state or country. The average age of an HVAC/R technician in the US according to the US Department of Labor is 55 years old. In fact, an NDSCS HVAC/R graduate statistically has multiple jobs to choose from at graduation with starting salaries averaging \$37,000 per year (although most students have already found employment prior to graduation). Experienced veteran technicians command salaries averaging between \$70,000 and \$100,000 per year.

Career opportunities for technicians are multiplying with technological advances in the use of microcomputers for data processing and system control. The demand is also spurred by expansion in the production, storage, and marketing of food and other perishables.

The growing emphasis on energy cost and utilization also is creating a need for technicians to renovate, convert, and service existing heating and air conditioning systems. Graduates may work as service technicians, installation technicians, manufacturers, laboratory technicians, sales representatives, or designers.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate or an Associate in Applied Science degree in HVAC/R Technology.

Course Code	Course Title	Credits
Certificate		
REFG 101	Refrigeration Technology	3
REFG 102	Refrigeration Technology	3
REFG 104	Refrigerants: Chemistry and Ecology	1
REFG 110	Blueprint Reading and Estimating	2
REFG 111	Fabrication Lab	2
REFG 112	Domestic and Residential Systems Lab	2
REFG 113	Refrigeration Systems Lab	2
REFG 121	Electrical Theory I	3
REFG 122	Electrical Theory II	3
REFG 123	Electrical Lab I	2
REFG 124	Electrical Lab II	2
REFG 253	Heating Equipment Theory	2
REFG 255	Heating Equipment Lab	3

Associate in Applied Science

REFG 201	Refrigeration Technology	3
REFG 202	Refrigeration Technology	3
REFG 211	Commercial Components Lab	2
REFG 212	Advanced Systems Lab	2
REFG 226	Building System Controls	3
REFG 231	Air Conditioning Design	3
REFG 232	Air Conditioning Design	3
REFG 254	Heat Pump Lab	2
REFG 256	Hydronic Heating Systems	3

Related/General Education Courses

Certificate		
ENGL 105	Technical Communications	3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		2
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
FYE 101	Science of Success	1

Associate in Applied Science

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Elective (HPER 210 recommended)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
FYE 101	Science of Success	1

Total Required Credits for Certificate 36

Total Required Credits for Associate in Applied Science 73

Revised: May 2022

Information Technology Support / Information Systems Administrator

► Contact Information

John Kroshus, associate professor
John.Kroshus@ndscs.edu
701-671-2115
NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Fargo
Online: Some Classes
Combination

Because we live in an IT oriented society, Information Systems Administrator offers a world-wide job market with a variety of locations and environments. Computers and networks are used in all types of businesses, banks, accounting firms, hospitals, manufacturing companies, insurance companies, sales companies, etc. The placement record in this program has been excellent.

For students wishing to pursue a bachelor's degree at a four-year college or university, please see the Computer Science or Management Information Systems Liberal Arts transfer curriculum plans listed in the Liberal Arts section of this catalog.

Program purposes

- To provide students with the knowledge of computer and network training enabling them to configure and install systems.
- To provide students with the knowledge and skills necessary to assist management in the selection of computer hardware and software.
- To provide students with the knowledge of computer networks enabling them to configure and install them.
- To prepare students to pursue a third-year option in Web Design or IT Forensics and Security (see additional program purposes listed under Web Design emphasis or IT Forensics and Security emphasis).

Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

All Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

Instruction

The instructors for this program have formal educational training, industry training and certifications, and work experience in Information Technology. Laboratory time is scheduled into each student's program allowing them to receive individual attention and hands-on computer experience.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are mathematics, keyboarding, and any computer hardware classes.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

*Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Information Technology Support (Certificate)

Course Code	Course Title	Credits
CIS 128	IT Essentials I	3
CIS 129	IT Essentials II	3
CIS 164	Networking Fundamentals I	4
CIS 165	Networking Fundamentals II	4
CIS 180	HTML and CSS	3
CIS 191	First Year Seminar	1
CIS 197	Internship	1
CIS 212	Microsoft Windows Operating System Client	3
CIS 220	Operating Systems (UNIX)	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
PHIL 215	Contemporary Moral Issues	3

Total Required Credits for Certificate **32**

After certificate courses are completed, below are the required courses for the Information and Communications Technology A.A.S. with emphasis in Information Systems Administrator degree

Course Code	Course Title	Credits
CIS 142	Cyber Security Operations	4
CIS 215	Implementing a Microsoft Windows Server Environment	4
CIS 216	Implementing a Microsoft Windows Network Infrastructure	4
CIS 267	Intermediate Networking I	4
CIS 268	Infrastructure Automation (DEVNET ASC)	4
CIS 279	Security Awareness and Policy	1
CSCI 160	Computer Science I	4
Wellness Elective(s)		2
ND:MATH		3
ENGL/COMM Elective		3
Social and Behavioral Science, Humanities and History Electives		2

Total Required Credits for Associate **67**

Students interested in a third-year option in Web Design or IT Forensics and Security should refer to the Web Design/Web Developer or IT Forensics and Security fact sheets.

Upon successful completion of the third-year option, students will also be awarded a certificate in Information and Communications Technology with an emphasis in Web Design or a certificate in Information and Communications Technology with an emphasis in IT Forensics and Security.

Award

Upon successful completion of the Information Technology Support required courses, students will be awarded a Certificate in Information and Communications Technology with an emphasis in Information Technology Support.

Upon successful completion of the Information Technology Support and the Information Systems Administrator required courses, students will be awarded an Associate in Applied Science degree in Information and Communications Technology with an emphasis in Information Systems Administrator.

Revised: May 2022

IT Forensics and Security

► Contact Information

John Kroshus, associate professor
John.Kroshus@ndscs.edu
701-671-2115
NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Fargo
Online: Some Classes
Combination

More and more crimes are committed with the aid of computers. Whether they are used in the commission of the crime, as in email harassment or stalking, or used for keeping records of illegal activities such as gambling and embezzlement, the computer must be seized and analyzed. This program will help you learn how to provide a secure computer environment and learn techniques for collecting and analyzing IT-related evidence.

This certificate provides a foundation for IT Forensics and Security. The certificate program will provide an immediate basis for professionals employed in the high-tech industry to improve their ability to counter threats to information systems, thereby increasing their value to organizations that employ them, and ensuring computer systems under their care are protected. A peripheral objective is to provide an opportunity for new or recent graduates to acquire advanced skills in IT Forensics and Security.

Specifically, it will meet the following objectives:

- Foster a high-quality, student-centered education.
- Provide students with a broad overview of the field and introduce them to recent advances and current research problems.
- Emphasize ethical, economic, social, and legal impacts of IT Forensics and Security technologies.
- Provide a foundation for the development of IT Forensics and Security.
- Provide our students with ability to counter threats to information systems and provide appropriate "after incident" responses.

A satisfactory criminal background check will be required prior to admission into this curriculum. The applicant must visit with the department chair regarding this issue.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Admission Requirements*

The applicants must be high school graduates or equivalent. Also, students must meet the prerequisites or obtain department approval for admission into the certificate program.

A satisfactory criminal background check will be required prior to admission into this curriculum.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate in Information and Communications Technology with an emphasis in IT Forensics and Security.

Course Code	Course Title	Credits
CIS 128	IT Essentials I	3
CIS 129	IT Essentials II	3
CIS 164	Networking Fundamentals I	4
CIS 241	IT Forensics I	4
CIS 242	IT Forensics II	4
CIS 280	Fundamentals of Network Security I	4
CIS 282	Computer System Security	4
CIS 284	Managing Network Security	4
ENGL/COMM	Elective	3
FYE 101	Science of Success	1
PHIL 215	Contemporary Moral Issues	3

Total Required Credits

37

Revised: May 2022

Software Coding

► Contact Information

Bonnie Schillinger, department chair
Bonnie.Schillinger@ndscs.edu
701-671-2496
Horton Hall 227/NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Fargo
Online: All Classes
Combination

Software Coding (Certificate)

Course Code	Course Title	Credits
CIS 180	HTML and CSS	3
CSCI 133	Database Concepts	3
CSCI 134	Database Design and Management	3
CSCI 162	Web Application Programming	3
CSCI 230	Web Database I (ASP/PHP)	3
	General Education Elective	3

Total Required Credits for Certificate **18**

Software coding requires knowledge of programming and database development. They assist in developing or adapting applications for businesses and organizations to meet the end user's needs.

Formal education and real-world experience form a good basis for the development of coding software. This curriculum will enhance student's skill sets and knowledge which will assist in the building and maintaining of applications or programs.

For students wishing to pursue a bachelor's degree at a four-year college or university, please see the Computer Science or Management Information Systems Liberal Arts transfer curriculum plans listed in the Liberal Arts section of this catalog.

Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

All Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

Instruction

The instructors for this program have formal educational training, industry training and certifications, and work experience in Information Technology. Laboratory time is scheduled into each student's program to enable them to receive individual attention and hands-on computer experience.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are keyboarding, Internet classes, and any publication type class.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses for the degree, students will be awarded a Certificate in Information and Communications Technology with an emphasis in Software Coding.

Revised: May 2022

Software Engineering

► Contact Information

Bonnie Schillinger, department chair
Bonnie.Schillinger@ndscs.edu
701-671-2496
Horton Hall 227/NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Fargo
Online: All Classes
Combination

Software engineers have extensive knowledge of programming languages, software development, and computer operating systems as they apply engineering principles to software creation. They create or adapt applications for businesses and organizations by analyzing the end user's needs.

Formal education and real-world experience form a good basis for the development of a capable software engineer. This curriculum will enlarge student's skill sets and knowledge basis which will assist in the designing, building, installing, and maintaining of applications or programs.

For students wishing to pursue a bachelor's degree at a four-year college or university, please see the Computer Science or Management Information Systems Liberal Arts transfer curriculum plans listed in the Liberal Arts section of this catalog.

Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

All Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

Instruction

The instructors for this program have formal educational training, industry training and certifications, and work experience in Information Technology. Laboratory time is scheduled into each student's program to enable them to receive individual attention and hands-on computer experience.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Course Code	Course Title	Credits
CIS 180	HTML and CSS	3
CIS 183	Social Media	3
CIS 188	Application Design	3
CIS 191	First Year Seminar	1
CIS 197	Internship	2-3
CIS 279	Security Awareness and Policy	1
CSCI 102	Fundamentals of CyberLaw	3
CSCI 133	Database Concepts	3
CSCI 134	Database Design and Management	3
CSCI 135	Web Programming	3
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
CSCI 162	Web Application Programming	3
CSCI 230	Web Database I (ASP/PHP)	3
CSCI 231	Web Database II	3
CSCI 263	Computer Science III	3
ENGL 110	English Composition I	3
ENGL/COMM	Elective	3
FYE 101	Science of Success	1
MATH 103	College Algebra	3
MATH 104	Finite Math	3
PHIL 215	Contemporary Moral Issues	3
	Social and Behavioral Science, Political Science, Humanities and History Elective(s)	3
	Wellness Elective(s)	2

Total Required Credits for Associate

66-67

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are keyboarding, Internet classes, and any publication type class.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses for the degree, students will be awarded an Associate in Applied Science degree in Information and Communications Technology with an emphasis in Software Engineering.

Revised: May 2022

Web Design / Web Developer

► Contact Information

Bonnie Schillinger, department chair
Bonnie.Schillinger@ndscs.edu
701-671-2496
Horton Hall 227/NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: All Classes
Combination

Because we live in an IT oriented society, Web design offers a world-wide job market with unlimited locations and diverse environments. Websites are utilized for a variety of businesses. The World Wide Web has unveiled new opportunities for businesses creating a demand for web designers and web developers.

As the World Wide Web becomes a pervasive medium — just like TV, radio, film, and print — and as its influence grows beyond that of earlier media, the scope of essential designing skills for the web continues to expand. Because today's web involves more than HTML coding and graphic design, it is important to engage designers with a full range of skills, who can develop websites that bring benefits to their intended users.

Formal education and real-world experience form a good basis for the development of a capable designer. This curriculum will enlarge student's skill sets and knowledge basis which will assist in the ability to analyze, create, and revise websites.

For students wishing to pursue a bachelor's degree at a four-year college or university, please see the Computer Science or Management Information Systems Liberal Arts transfer curriculum plans listed in the Liberal Arts section of this catalog.

Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

All Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

Instruction

The instructors for this program have formal educational training, industry training and certifications, and work experience in Information Technology. Laboratory time is scheduled into each student's program to enable them to receive individual attention and hands-on computer experience.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Web Design (Certificate)

Course Code	Course Title	Credits
BADM 110	Introduction to eBusiness	3
BOTE 108	Business Mathematics	3
CIS 164	Networking Fundamentals I	4
CIS 180	HTML and CSS	3
CIS 181	Web Authoring Software	3
CIS 182	Image Editing Software	3
CIS 232	Graphics Design	3
CSCI 135	Web Programming (XML)	3
ENGL 110	College Composition I	3
ENGL 125	Introduction to Professional Writing	3
FYE 101	Science of Success	1

Total Required Credits for Certificate **32**

After certificate courses are completed, below are the required courses for the Information and Communications Technology A.A.S. with emphasis in Web Developer degree

Course Code	Course Title	Credits
CIS 183	Social Media	3
CIS 188	Application Design	3
CIS 220	Operating Systems (Unix)	3
CIS 279	Security Awareness and Policy	1
CIS 197/297	Internship and/or Cooperative Education	2-3
CSCI 102	Fundamentals of Cyberlaw	3
CSCI 133	Database Concepts I (SQL)	3
CSCI 160	Computer Science I	4
CSCI 230	Web Database I (ASP/PHP)	3
PHIL 215	Contemporary Moral Issues	3
	Social and Behavioral Science, Political Science, Humanities and History Elective(s)	3
	Wellness Elective(s)	2

Total Required Credits for Associate **65-66**

Admission Requirements*

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are keyboarding, Internet classes, and any publication type class.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses for the certificate, students will be awarded a certificate in Information and Communications Technology with an emphasis in Web Design.

Upon successful completion of the required courses for the degree, students will be awarded an Associate in Applied Science degree in Information and Communications Technology with an emphasis in Web Developer.

Revised: May 2022

John Deere Tech

► Contact Information

Tyler Slettedahl, program coordinator
Tyler.Slettedahl@ndscs.edu
701-671-2726
Tech Center 68

► Delivery Methods

Face-to-Face: Wahpeton

The John Deere Tech program is designed to develop technically competent, professional ag equipment service technicians. The John Deere Company sponsors the program and NDSCS administers and operates the program.

This unique program combines state-of-the-art, on-campus training with supervised occupational experiences at a sponsoring John Deere dealership. Students receive technical training on John Deere equipment and related products through a combination of classroom instruction and hands-on laboratory experiences. Classroom and laboratory instruction at NDSCS covers the basics of each subject plus the latest developments in John Deere's agricultural equipment. Work experience at the dealership reinforces on-campus training and exposes the student to real life failures and repairs as they occur on the equipment.

Green technology is addressed through changes in emission standards and alternative fuels that will continue to advance changes in this industry.

The John Deere Tech program takes six semesters, or approximately 24 months, to complete. The six semesters are divided into 10 terms, each approximately eight weeks in length. Students complete the second, third, fourth, sixth, seventh, ninth and tenth terms on campus and the first, fifth, and eighth terms at a sponsoring John Deere dealership.

Admission Requirements

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements. Special requirements include securing a John Deere dealership sponsor.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the Diesel Technology Department at 701-671-2330 or the academic counselor at 701-671-2257 for strategies to meet the admission requirements.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in John Deere Tech.

Course Code	Course Title	Credits
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 115	Introduction to Light and Medium Duty Engines	4
JDAT 105	Supervised Occupational Experience I	2
JDAT 106	John Deere Time Service Management	2
JDAT 110	Supervised Occupational Experience II	5
JDAT 114	Supervised Occupational Experience III	5
JDAT 116	John Deere Equipment Operation and Adjustment	4
JDAT 155	Introduction to Electrical/Electronics	4
JDAT 165	Introduction to John Deere Hydraulic Systems	4
JDAT 215	John Deere Engine Rebuild	6
JDAT 225	John Deere Powertrains	7
JDAT 255	John Deere Electrical/Electronics	5
JDAT 260	Introduction to Ag Management Solutions (AMS)	3
JDAT 265	John Deere Tractor Hydraulic Systems Diagnosis	5
MFGT 110	Industrial Shop Practices	2

Related/General Education Courses

BADM 240	Sales	3
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Elective(s)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
FYE 101	Science of Success	1

Total Required Credits **82**

NOTE: 81 credits include two summer sessions

Revised May 2022



Land Surveying and Civil Engineering Technology

Land Surveying and Civil Engineering Technology

► Contact Information

Jeff Jelinek, program coordinator
 Jeff.Jelinek@ndscs.edu
 701-671-2268
 Horton Hall 242

► Delivery Methods

Face-to-Face: Wahpeton
 Online: Some classes

The Land Surveying and Civil Engineering Technology program is designed to prepare students for work as engineering and surveying technicians in construction-related industries, allowing graduates to pursue a broad range of careers related to surveying, civil drafting, and material testing. Upon graduation, students can be employed with state, county, and city engineering offices as well as private agencies such as consulting engineers, land surveyors and construction contractors.

Students are provided with experiences emphasizing surveying, civil drafting, and material testing. Surveying courses give students the opportunity to learn how to operate the latest technology used in distance and angle measurement. Surveying drawings and maps are developed using enhanced computer-aided drafting programs (CAD). In addition, students take courses in communications, human relations, computers and technical mathematics, which will help provide them with the skills to advance in their careers.

Green and/or sustainable construction is covered at an awareness level in the materials testing classes and the design classes.

While students are fully employable upon completion of this program, students interested in pursuing an advanced degree will find the Associate in Applied Science degree in Land Surveying and Civil Engineering Technology provides transfer options to four-year colleges and universities in related fields such as land surveying and construction management.

NOTE: This program requires a ZBOOK 15 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$2100.00 if purchased through NDSCS. For further information, call Randy Stach, department chair, at 701-671-2116.

Course Code	Course Title	Credits
CAD 120	Introduction to AutoCAD	3
CT 111	Civil Plans and Specifications	2
CT 113	Introduction to Civil Design Applications	3
CT 121	Surveying I	4
CT 122	Surveying II	4
CT 132	Materials Testing/Quality Control	3
CT 142	Construction Safety for Civil Technicians	1
CT 211	Introduction to Geographic Information Systems	3
CT 212	GIS Applications	3
CT 214	Highway and Street Design	3
CT 215	Land Use Planning and Development	3
CT 216	Utility and Drainage Design	3
CT 221	Surveying III	4
CT 222	Surveying IV	4
CT 223	Boundary Control and Legal Principles	3
CT 224	Research and Analysis	3
CT 261	Machine Control and Project Layout	2
UAS 111	Introduction to UAS	2

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
FYE 101	Science of Success	1
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CSCI 116 – Business Use of Computers – 3 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credit **72**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Land Surveying and Civil Engineering Technology.

Revised: May 2022

Liberal Arts

Agriculture Transfer

► Contact Information

Dr. Anissa Hoffman, associate professor
Anissa.Hoffman@ndscs.edu
701-671-2252
Tech Center 46

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Agriculture transfer curriculum plan is designed for students who plan to continue their studies toward a bachelor's degree in agriculture from one of the area universities. Since degree requirements of various transfer institutions differ, students should consult an advisor and the catalog of the college to which they plan to transfer so they can determine specific course requirements and transfer policies. Their NDSCS agriculture advisor will assist them with the transfer process.

Students will take a mixture of agriculture and general education courses while at NDSCS that will assist them in meeting the requirements of their anticipated degree. Smaller class size enables a successful beginning towards completion of a bachelor's degree.

Our philosophy statement is: "The Agriculture Department provides education for the present and future by incorporating leadership and career development, best management practices in crop and livestock production, mechanics, technology, natural resources, problem solving, internships, and communication through a diverse program."

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
PLSC 110	World Food Crops	3
PLSC 225	Principles of Crop Production	3
SOIL 210	Introduction to Soil Science	3
AGEC 242	Introduction to Agricultural Management	4
	Free Electives	4
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Math, Science and Computer Information Systems Electives	9
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Required:	
ECON 201	Principles of Microeconomics (3)	
ECON 202	Principles of Macroeconomics (3)	
	*Agriculture and General Education Electives	15
	Total Required Credits	67

*Electives should be selected according to the needs of the student or requirements of the transfer college.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are chemistry, algebra, advanced mathematics, biology, agricultural education, English, and computer science.

Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Biotechnology Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The biotechnician has a diversified education in biology, chemistry, and physics. While a few entry-level jobs are available to biotechnicians with an A.S. or B.S. degree, most often the undergraduate Biotechnology curriculum is used as a stepping-stone to a M.D., M.S., or Ph.D. degree. A biotechnician with an A.S. or B.S. degree generally performs routine tasks and analytical procedures under the supervision of the research scientist.

Students choosing this plan should consult with the Mathematics and Science Department in selecting their courses since future plans of study at a four-year college may have specific requirements. In addition, a student should contact the college or university of their choice to confirm a list of recommended courses.

Students entering Biotechnology who do not have the proper prerequisites may need additional preparatory classes.

The Biotechnology transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Biotechnology transfer curriculum plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science, and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
	Computer Information System Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
Total Required Credits		68

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, mathematics, physics and English. Courses that develop reading and communications skills are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022

Liberal Arts

Business Transfer

► Contact Information

Curt Schreiber, associate professor
Curt.Schreiber@ndscs.edu
701-671-2601
Horton Hall 231

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

This Liberal Arts degree with an emphasis in Business Administration is for students intending to eventually earn a four-year degree. It is designed to provide a smooth transition into an accounting, business administration, finance, marketing, or international business baccalaureate program at a four-year college or university. The curriculum will include a blend of both general education and business courses.

A faculty advisor will assist students in the development of an appropriate program to meet the student's career goals. Employment opportunities are unlimited, depending upon the individuals' strengths and interests.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact Greg Anderson, department chair, at 701-671-2172.

Course Code	Course Title	Credits
ACCT 200	Elements of Accounting I	4
ACCT 201	Elements of Accounting II	4
COMM 110	Fundamentals of Public Speaking	3
ECON 201	Principles of Microeconomics	3
ECON 202	Principles of Macroeconomics	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
PSYC 111	Introduction to Psychology	3
SOC 110	Introduction to Sociology	3
	Humanities/History Electives	6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Required:		
PHIL 215	Contemporary Moral Issues (3)	
	Math, Science and Computer Information Systems Electives	13
CSCI 116	Business Use of Computers (3)	
MATH 103	College Algebra (3)	
MATH 210	Elementary Statistics (3)	
	Lab Science Elective (4)	
	General Requirements	15
ACCT 215	Business in the Legal Environment (3)	
BADM 201	Principles of Marketing (3)	
BADM 202	Principles of Management (3)	
BADM 251	Personal Finance (3)	
BUSN 120	Fundamentals of Business (3)	

Total Required Credits **66**

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are accounting and general business.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Chemistry Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Chemistry transfer curriculum is designed for students planning a career in chemistry or a related field that would benefit from a strong background in the physical sciences and mathematics. Successful completion of the curriculum will allow the student to transfer to a four-year chemistry program or to four-year programs in the physical sciences or engineering.

This degree plan is designed to provide students with a more accurate representation of the course sequences taken during the first two years of a four-year degree program in either chemistry or mathematics.

Students choosing this plan should consult with the Mathematics and Science Department in selecting their courses since future plans of study at a four-year college may have specific requirements. In addition, a student should contact the college or university of their choice to confirm a list of recommended courses.

Upon completion of this program, the student is awarded an Associate in Science degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
or ENGL 125	Introduction to Professional Writing (3)	
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
PHYS 251	University Physics I	4
PHYS 251L	University Physics I Lab	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Lab	1
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		70

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading NDUS: General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful course to prepare for this program are biology, chemistry, computer science, English, mathematics and physics.

Courses that develop reading and communication skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022

Chiropractic Transfer

► Contact Information

Shannon King, department chair
Shannon.King@ndscs.edu
701-671-2296
Haverty Hall 223

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Chiropractors are health practitioners who treat patients primarily by manual manipulation of parts of the body, especially the spinal column. This approach to health care is based upon the principle that interference with the nervous system impairs normal functions and lowers resistance to disease. Chiropractic manipulation is intended to assist the nervous system to function properly.

All chiropractic colleges require three years of undergraduate study, including courses in English, social sciences, biology, general and organic chemistry, physics, mathematics, and humanities. The course in chiropractic college is generally an additional four years. Most offer a broad curriculum, including subjects such as physiotherapy and nutrition. In most chiropractic colleges the first two years consist of classroom and laboratory work while the last two years stress clinical work with patients. The degree awarded upon completion is Doctor of Chiropractic (D.C.).

Students entering the Chiropractic transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Chiropractic transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, chemistry, chemistry health service option, and natural science.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 105	Trigonometry	2
or MATH 165	Calculus I (4)	
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
Computer Information Systems Elective		2
<i>From any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Sciences Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Required:		
PSYC 111	Introduction to Psychology (3)	
Wellness Elective(s)		2
Total Required Credits		66 (68)

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics, and English. Courses that develop reading and communications skills and two years of a foreign language, if available, are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Clinical Laboratory Science Transfer

► Contact Information

Shannon King, department chair
Shannon.King@ndscs.edu
701-671-2296
Haverty Hall 223

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Clinical laboratory scientists are laboratory professionals who apply scientific skills and knowledge to a variety of complex diagnostic and therapeutic procedures. Clinical Laboratory Science has increased in scope and importance in recent years. Although they are trained in all areas of laboratory work, they often specialize in an area such as blood banking, hematology, microbiology, urinalysis or nuclear medicine technology.

Preparation for a career in Clinical Laboratory Science involves three years of academic study in an undergraduate program and one year of clinical study in a professional program. Academic work will include chemistry, organic chemistry, biology, microbiology, zoology, English, physics, anatomy/physiology, statistics, psychology, social sciences, speech, mathematics, and humanities.

Students entering the Clinical Laboratory Science transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes. The Mathematics and Science Department highly recommends the completion of sequential series of courses.

The Clinical Laboratory Science transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science, and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 103	College Algebra	3
MATH 105	Trigonometry	2
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
	Computer Information Systems Elective	2
	<i>From any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Sciences Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
Total Required Credits		69

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics and English. Courses that develop reading and communications skills also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022

Computer Science Transfer

► Contact Information

Bonnie Schillinger, department chair
Bonnie.Schillinger@ndscs.edu
701-671-2496
Horton Hall 227/NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

The Computer Science transfer curriculum plan provides articulation to professional programs in computer science. In addition, this plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

If you are creative, a logical thinker, pay attention to detail, are easily motivated, work well on your own and are capable of sound decision-making, you are an excellent candidate for working in the computer area.

Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

The software necessary for the CIS/CSCI classes in this curriculum are included with the textbooks.

Instruction and advising

The instructors for this program have formal educational training, industry training and certifications and work experience in Information Technology. The average class size is 25 students. Most of the computer information systems classes have a lab period which enables students to receive individualized attention when it is needed.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
CIS 220	Operating Systems (UNIX)	3
CSCI 116	Business Use of Computers	3
CSCI 133	Database Concepts I (SQL)	3
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II (Java)	4
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
Wellness Elective(s)		2
MATH 165	Calculus I	4
MATH 166	Calculus II	4
CIS/CSCI or General Electives*		6
FYE 101	Science of Success	1
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Science Electives		8
<i>Any course marked ND:LABSC</i>		
Social and Behavioral Sciences Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Required:		
ECON 201	Principles of Microeconomics (3)	

Total Required Credits **65**

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are upper-level mathematics classes.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Criminal Justice Transfer

► Contact Information

Dr. Kelly Wolf, instructor
Kelly.Wolf@ndscs.edu
701-671-2142
Old Main 436

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination
 Fargo: IVN and Face-to-Face

This transfer curriculum plan is available to the student whose goal is a career in the justice system. This plan is for the student who wishes to complete the Associate in Arts degree at NDSCS, transfer directly to a four-year college or university to complete the bachelor's degree in criminal justice, and then complete the one semester Peace Officer Training (or other specific academy for their chosen area of criminal justice). The Criminal Justice transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English and humanities, math, physical sciences, social and behavioral sciences, and physical education. All colleges and universities require these core courses for students seeking a bachelor's degree. An Associate in Arts degree is awarded upon completion of the program.

Individuals interested in criminal justice have several career options available to them. Among the many options are: police, detectives, county and state patrol officers, parole, probation and corrections officers. Also, many jobs are available in the federal government such as: FBI, U.S. Marshals Service, ATF, Secret Service, and DEA.

The Criminal Justice transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

NOTE: For those students interested in becoming license eligible as peace officers in the State of N.D., a collaboration agreement has been made between NDSCS and Lake Region State College (LRSC). LRSC offers Peace Officer Training (20 credits; NDSCS graduates take 17 of those credits) in Devils Lake, Minot, Grand Forks, and Fargo. Upon completion of Peace Officer Training, the student would be license eligible as a peace officer in the State of N.D. and may choose to continue their education towards a bachelor's degree at a four-year college.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
HIST 103	United States History to 1877	3
and HIST 104	United States History Since 1877	3
or HIST 101	Western Civilization I	
and HIST 102	Western Civilization II	
Wellness Elective(s)		2
PHIL 215	Contemporary Moral Issues	3
Math, Science and Computer Information Systems Electives		13
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>		
Required:		
BIOL 115	Concepts of Anatomy and Physiology (3)	
BIOL 115L	Concepts of Anatomy and Physiology Lab (1)	
CSCI 116	Business Use of Computers (3)	
MATH 210	Elementary Statistics (3)	
Social and Behavioral Science Electives*		31
<i>From any course with CJ, POLS, PSYC or SOC prefixes within the category marked ND:SS</i>		
Required:		
CJ 160	The Legal System (4)	
CJ 201	Introduction to Criminal Justice (3)	
CJ 232	Administration of Justice (3)	
CJ 297	Internship (1-4)	
POLS 115	American Government (3)	
POLS 116	State and Local Government (3)	
PSYC 111	Introduction to Psychology (3)	
SOC 110	Introduction to Sociology (3)	
SOC 115	Social Problems (3)	
FYE 101	Science of Success	1

Total Required Credits 65

Consult academic advisor in selecting electives that are most appropriate for the intended baccalaureate program.

* Suggested Electives:

POLS 225	Comparative Politics I (3)
PSYC 103	Addictions and Alternatives (2)
PSYC 270	Abnormal Psychology (3)
SOC 220	Family (3)
SOC 221	Minority Relations (3)

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Dental Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Dentistry is a demanding profession. Academic preparation for dentistry is long and rigorous. The dental schools in the United States have no uniform requirements for pre-professional study. They do, however, recommend a bachelor's degree and a broad, general education that includes basic science requirements and the development of skills in reading, writing, and speaking. Course work must be completed in biology/zoology, general chemistry, organic chemistry, physics, mathematics, and English.

Students are chosen for admission to dental school primarily on the basis of their undergraduate grades and scores on the Dental Admission Test. Most dental schools require an interview and all require recommendations. Students should keep in mind, however, that only a certain percentage of dental school applicants are accepted. Therefore, it is important to select a major that will prepare you to pursue alternative career goals for occupational flexibility.

Students entering the Dental transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Dental transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science, and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 105	Trigonometry	2
	or MATH 165 Calculus I (4)	
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
	Computer Information Systems Elective	2
	<i>From any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
Total Required Credits		66 (68)

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics, and English. Courses that develop reading and communications skills and two years of a foreign language, if available, are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Early Childhood Education Transfer

► Contact Information

Jennifer Krueger, instructor
 Jennifer.A.Krueger@ndscs.edu
 701-671-2433
 Old Main 444

► Delivery Methods

Face-to-Face: Wahpeton
 Online: Some Classes
 Combination

This transfer curriculum plan is available to the student whose goal is a career in early childhood education, child development, family science or related fields.

Employment opportunities include parent and family life educators, extension agents, child protection service professionals, financial counselors, nursing home activity directors, credit specialists, probation agents, directors of child care licensing, and hospital child life specialists.

The Early Childhood Education transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English, humanities, math, physical sciences, social and behavioral sciences, and wellness. All colleges and universities require these core courses for students seeking a bachelor's degree.

Upon completion of the program, the student is awarded an Associate in Arts degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Recommended:		
ENGL 238	Children's Literature (3)	
Wellness Elective(s)		2
MATH 103	College Algebra	3
CSCI 116	Business Use of Computers	3
BIOL 111	Concepts of Biology	3
BIOL 111L	Concepts of Biology Lab	1
Math, Science and Computer Information Systems Electives		3
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
PSYC 111	Introduction to Psychology	3
PSYC 250	Developmental Psychology	3
PSYC 255	Child and Adolescent Psychology	3
SOC 110	Introduction to Sociology	3
SOC 220	Family	3
General Education Electives*		14
Recommended:		
HPER 217	Personal and Community Health (3)	
PHIL 215	Contemporary Moral Issues (3)	
SOC 115	Social Problems (3)	
SOC 221	Minority Relations (3)	
Free Electives		5
Recommended:		
HPER 210	First Aid and CPR (<i>Professional/Community</i>) (2)	
**EDUC 250	Introduction to Education (3)	

Total Required Credits **65**

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

**A collaborative course taken remotely through Mayville State University.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Liberal Arts

Education Transfer

► Contact Information

Wade King, department chair
Wade.King@ndscs.edu
701-671-2317
Haverty Hall 216

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

Students entering the Education transfer curriculum plan at NDSCS are exposed to a wide range of courses and disciplines. Upon completion of the requirements, students are awarded the Associate in Arts degree. Students then transfer to other colleges or universities to take their education courses and to student teach.

Secondary school teaching requires a wide variety of skills and aptitudes, including a talent for working with children; organizational, administrative and recordkeeping abilities; research and communication skills; the power to influence, motivate and train others; patience; and creativity. Preparing students for the future workforce is the major stimulus generating the changes in education. To be prepared, students must be able to interact with others, adapt to new technology, and to think logically through problems. Teachers provide the tools and environment for their students to develop these skills.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Suggested courses:

Math Education

Majors	Credits
MATH 103	3
MATH 165	4
MATH 166	4
MATH 265	4
MATH 266	3

HPER Education Majors

Please refer to the Health, Physical Education and Recreation transfer curriculum plan section.

Music Education Majors

Please refer to the Music transfer curriculum plan section.

Science Education

Majors	Credits
BIOL 150 and 150L	3/1
BIOL 151 and 151L	3/1
PHYS 211 and 211L	4/1
PHYS 212 and 212L	4/1
MATH 165	4
MATH 166	4
PHYS 251	5
PHYS 252	5

Elementary Education Majors

Please refer to the Elementary Education transfer curriculum plan section.

Social Science

Education Majors	Credits
ECON 201	3
HIST elective(s)	3

Social Science

Electives	Credits
ECON 202	3
POLS/HIST elective(s)	3
PSYC 250	3
PSYC 270	3
SOC 220	3
SOC 221	3
COMM 112	3

All Majors

All Majors	Credits
**EDUC 250	3

*EDUC 250 is a collaborative online course introducing the student to working in education. It includes observation of a working teacher and is offered by Mayville State University or other NDUS institutions. It can be taken as a recommended free elective.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
HIST 103	United States History to 1877	3
HIST 104	United States History Since 1877	3
	Wellness elective(s)	2
POLS 115	American Government	3
	Political Science or History elective	3
	<i>Any course marked ND:POLS or ND:HIST</i>	
PSYC 111	Introduction to Psychology	3
PSYC 230	Educational Psychology	3
PSYC 255	Child and Adolescent Psychology	3
SOC 110	Introduction to Sociology	3
SOC 115	Social Problems	3
	General Education electives*	10
	Humanities elective	3
	Math, Science and Computer Information Systems electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	

Total Required Credits

65

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Elementary Education Transfer

► Contact Information

Wade King, department chair
Wade.King@ndscs.edu
701-671-2317
Haverty Hall 216

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Students entering the Elementary Education transfer curriculum plan at NDSCS are exposed to a wide range of courses and disciplines. Upon completion of the requirements, students are awarded the Associate in Arts degree. Students then transfer to other colleges or universities to take their education courses and to student teach.

Kindergarten and elementary school teachers need a wide variety of skills and aptitudes, including a talent for working with children; organizational, administrative and recordkeeping abilities; research and communication skills; the power to influence, motivate and train others; patience; and creativity. Preparing students for the future workforce is the major stimulus generating the changes in education. To be prepared, students must be able to interact with others, adapt to new technology, and to think logically through problems. Teachers provide the tools and environment for their students to develop these skills.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Suggested courses	Credits
BIOL 111/L or 124/L	4
or CHEM 110/L	4
MUSC 100 or 101	3
CSCI 116	3
COMM 112	3
**EDUC 250	3

**EDUC 250 is a collaborative online course introducing the student to working in education. It includes observation of a working teacher and is offered by Mayville State University or other NDUS institutions. It can be taken as a recommended free elective.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
ENGL 238	Children's Literature	3
FYE 101	Science of Success	1
HIST 103	United States History to 1877	3
HIST 104	United States History Since 1877	3
	Wellness elective(s)	2
POLS 115	American Government	3
	Humanities elective	3
PSYC 111	Introduction to Psychology	3
PSYC 230	Educational Psychology	3
PSYC 255	Child and Adolescent Psychology	3
SOC 110	Introduction to Sociology	3
SOC 115	Social Problems	3
MATH 277	Mathematics for Elementary Teachers I	4
	Math, Science and Computer Information Systems	13
	electives from any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI	
	All students must complete one lab science course, one mathematics course and one computer science course.	
	General Education and free electives*	4

Total Required Credits 65

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Liberal Arts

Engineering Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Engineers are innovators who take a fresh look at science and technology in order to apply old knowledge to finding solutions to new problems. Fields in engineering are expanding rapidly to meet the needs of society and advances in sciences.

An engineering schedule is difficult due to the number of classes taken within a semester and to the problem-oriented nature of the course work. It is estimated that for an incoming freshman class at a major university, only one-fourth of those students will receive a degree in engineering. Anyone who feels intimidated by a large school definitely should consider NDSCS to start their studies. Successful completion of the curriculum will allow the student to transfer to a four-year engineering program.

Students entering the Engineering transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Engineering plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to engineering, other programs that a student may transfer into are chemistry, physics, astronomy, geology, and mathematics.

Course Code	Course Title	Credits
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
*ENGR 212	Fundamentals of Visual Communications	3
FYE 101	Science of Success	1
**MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
MATH 266	Introduction to Differential Equations	3
PHYS 251	University Physics I	4
PHYS 251L	University Physics I Lab	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Lab	1
	Computer Information Systems Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Recommended:	
	PHIL 215 Contemporary Moral Issues (3)	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Recommended:	
	ECON 201 or 202	
	Principles of Microeconomics/Macroeconomics (3)	
	Wellness Elective	2
Total Required Credits		66

Engineering courses are offered by collaboration with University of North Dakota (UND) – Statics, Dynamics and Introduction to Engineering.

*MATH 227 Applied Linear Algebra (3 credits) is recommended by both UND and NDSU as a course suited for students entering their Engineering Department.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

*Offered even years.

**What mathematic route a student takes will depend on their ACT or Accuplacer math score.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

General Liberal Arts Transfer

► Contact Information

Wade King, department chair
Wade.King@ndscs.edu
701-671-2317
Haverty Hall 216

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: All Classes
Combination

This option is available to the student whose goal is a bachelor's degree, but who may be unsure of his or her major. It includes first and second year core courses in a variety of areas including English and humanities, math, natural and physical sciences, social and behavioral sciences, computer information systems, and physical education. Most four-year colleges and universities require these core courses. Upon completion of the program, the student is awarded an Associate in Arts degree or an Associate in Science degree, which allows transfer to most four-year colleges and universities as a junior.

The General Liberal Arts transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

All instructors in the Liberal Arts area have graduate-level educational training in their field of expertise. The majority of the faculty in the Arts, Science and Business Division hold Master of Arts, Master of Science or doctorate degrees. The faculty also serves as student advisors to aid students in planning programs, setting up schedules, registering for classes, and ultimately deciding on a major. Career counseling is also available to help students make decisions.

Employment opportunities for the liberal arts student ultimately depend on the specialty or major the individual eventually pursues. Liberal arts provides maximum flexibility and transfer opportunities for a variety of programs and occupations. While the number of possibilities is far too numerous to list, counselors and faculty members are available to meet with students to discuss future plans, even if the student is not currently enrolled.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
	Electives* (free)	7
	General Education Electives**	19
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Math, Science and Computer Information Systems Electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Social and Behavioral Sciences Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Total Required Credits	65

* Consult your advisor for course selection of free electives.

** Consult academic advisor in selecting electives that are most appropriate for the intended A.A. or A.S. degree for transfer to a bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree or an Associate in Science degree in Liberal Arts.

Revised: May 2022

Liberal Arts

Health, Physical Education and Recreation Transfer

► Contact Information

Jane Passa, department chair
Jane.Passa@ndscs.edu
701-671-2445
Blikre Activities Center 190

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

This curriculum is available to the student planning to eventually major in physical education, health/recreation and perhaps, engage in the teaching, coaching or recreation fields as a career pursuit.

The Health, Physical Education and Recreation transfer curriculum plan provides transferable courses, which will eventually result in a major, or minor in the HPER field of study. In addition, the HPER plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

The instructors in this department have a wide variety of backgrounds in the field with the majority of them holding at least a master's degree. The average class size is small enough to allow the development of comfortable staff-student relationships. Students are assigned faculty advisors to assist them in planning their programs and working out their semester schedules.

The physical education indoor and outdoor facilities are extensive and in excellent condition. These facilities are shared by the physical education, athletic and intramural programs. They are also open many hours for individual "free play" time.

The opportunities for employment in the HPER field are excellent. Students commonly take employment as physical education instructors in elementary, junior high or high schools, athletic coaches, recreational directorships (community, private, commercial, etc.), athletic trainers or health instructors.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
HPER 100	Concepts of Fitness and Wellness	2
HPER 200	Introduction to Parks and Recreation	2
HPER 207	Prevention and Care of Injuries	3
HPER 208	Introduction to Physical Education	2
HPER 210	First Aid and CPR (<i>Professional/Community</i>)	2
HPER 217	Personal and Community Health	3
	Wellness Elective(s)	2
	General Education Electives*	12
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Math, Science and Computer Information Systems Electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Required:	
BIOL 220	Anatomy and Physiology I (3)	
BIOL 220L	Anatomy and Physiology I Lab (1)	
CIS 101	Computer Literacy (2)	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Required:	
PSYC 111	Introduction to Psychology (3)	
PSYC 230	Educational Psychology (3)	
	Total Required Credits	65

* Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Law Transfer

► Contact Information

Jeff Hart, associate professor
 Jeffrey.Hart@ndscs.edu
 701-671-2342
 Old Main 435

► Delivery Methods

Face-to-Face: Wahpeton
 Online: Some Classes
 Combination

This curriculum is available to the student whose goal is a juris doctor (J.D.) or bachelor of law (LL.B) degree. The Law transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English and humanities, math, physical sciences, social and behavioral sciences, and physical education. All colleges and universities require these core courses for students seeking a bachelor's degree. An Associate in Arts degree is awarded upon completion of the program, and the student can transfer to most four-year colleges and universities as a junior. To be accepted into law school, the student must obtain a bachelor's degree from a four-year college or university.

The Law transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
CSCI 116	Business Use of Computers	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
HIST 101	Western Civilization I	3
and HIST 102	Western Civilization II	3
or HIST 103	U.S. History to 1877 (3)	
and HIST 104	U.S. History Since 1877 (3)	
FYE 101	Science of Success	1
Lab Science Elective(s)		3/1
MATH 103	College Algebra	3
MATH 210	Elementary Statistics	3
PHIL 215	Contemporary Moral Issues	3
Wellness Elective(s)		2
General Education Electives*		7
Social and Behavioral Science Electives**		24
<i>From any courses marked ND:SS — all law transfer curriculum plan students must complete one criminal justice, one politics and one psychology or one sociology course (in addition to the required courses).</i>		
Required:		
CJ 160	The Legal System (4)	
POLS 115	American Government (3)	

Total Required Credits **65**

* Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

** Suggested Electives:

CJ 201	Introduction to Criminal Justice (3)
CJ 232	Administration of Justice (3)
CJ 297	Internship (1-4)
ECON 105	Elements of Economics (3)
ECON 201	Principles of Microeconomics (3)
ECON 202	Principles of Macroeconomics (3)
POLS 116	State and Local Government (3)
POLS 225	Comparative Politics I (3)
PSYC 111	Introduction to Psychology (3)
PSYC 250	Developmental Psychology (3)
PSYC 270	Abnormal Psychology (3)
SOC 110	Introduction to Sociology (3)
SOC 115	Social Problems (3)
SOC 220	Family (3)
SOC 221	Minority Relations (3)

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Management Information Systems Transfer

► Contact Information

Bonnie Schillinger, department chair
Bonnie.Schillinger@ndscs.edu
701-671-2496
Horton Hall 227/NDSCS-Fargo 138

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some Classes
Combination

Program purposes

The Management Information Systems transfer curriculum plan provides articulation to baccalaureate programs in management information systems. In addition, this plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Special qualifications

If you are creative, a logical thinker, pay attention to detail, are easily motivated, work well on your own, and are capable of sound decision-making, you are an excellent candidate for working in the computer area.

Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

All Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

Instruction and advising

The instructors for this program have formal educational training, industry training and certifications and work experience in Information Technology. The average class size is 25 students.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5.

Course Code	Course Title	Credits
ACCT 200	Elements of Accounting I	4
ACCT 201	Elements of Accounting II	4
CIS 164	Networking Fundamentals I	4
CIS 180	HTML and CSS	3
COMM 110	Fundamentals of Public Speaking	3
CSCI 116	Business Use of Computers	4
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II (Java)	4
ECON 201	Principles of Microeconomics	3
ECON 202	Principles of Macroeconomics	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 146	Applied Calculus I	4
PHIL 215	Contemporary Moral Issues	3
PSYC 111	Introduction to Psychology	3
SOC 110	Introduction to Sociology	3
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Science Electives		4
<i>Any course marked ND:LABSC</i>		
Wellness Elective(s)		2
Total Required Credits		68

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are upper level mathematics classes.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Mathematics Transfer

► Contact Information

Brian Hagelstrom, associate professor
 Brian.Hagelstrom@ndscs.edu
 701-671-2419
 Haverty Hall 213

► Delivery Methods

Face-to-Face: Wahpeton
 Online: Some Classes
 Combination

The Mathematics transfer curriculum plan is specifically designed for those who are planning to obtain a bachelor's degree in mathematics at a four-year college or university. Students who choose this plan will not be limited to just mathematics, since it will lay the foundation for many other college majors that rely on mathematics, such as actuarial science, chemistry, computer science, engineering, or physics.

Students choosing this plan should consult with the Mathematics and Science Department in selecting their lab science sequence and electives since future plans of study at a four-year college may have specific requirements. In addition, a student should contact the college or university of their choice to confirm a list of recommended courses.

One career opportunity for a person who has a bachelor's degree in mathematics is an actuary. An actuary will assess risk using mathematical and statistical methods and is often employed by insurance and financial institutions. An actuary needs to pass a series of professional exams dealing with probability and statistics, finance and economics. Students interested in a future career as an actuary may find ACCT 200, ACCT 201, ECON 201, ECON 202, and other electives in business, economics, and statistics useful.

Upon completion of this program, the student is awarded the Associate in Science degree which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful course to prepare for this program are biology, chemistry, computer science, English, mathematics, and physics.

Courses that develop reading and communication skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
CSCI 160	Computer Science I	4
ENGL 110	College Composition I	3
ENGL 120	*College Composition II	3
ENGL 125	*Introduction to Professional Writing	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
MATH 266	Introduction to Differential Equations	3
General Education Electives**		9
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Science Electives***		8
<i>From any course marked ND:LABSC</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		65

*Either ENGL 120 or ENGL 125, but not both, may be replaced with an alternative elective with the approval of the Mathematics and Science Department.

MATH 227 Applied Linear Algebra is recommended as a General Education Elective.

** Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

***It is recommended that students take PHYS 251/251L and PHYS 252/252L, University Physics I and II, as their science electives. It is also recommended that students choose a second Lab Science sequence for their general electives when the intended bachelor's program is not known or to choose appropriate electives with the prefix ECON and ACCT for those who may be interested in actuarial science.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading NDUS: General Education Transfer Agreement.

Revised: May 2022

Medical Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Medicine is a demanding profession. Academic preparation for a career in human medicine is among the longest and most rigorous of all professions. More than 120 accredited medical schools in the United States have no uniform requirements for pre-professional study. They do, however, recommend a bachelor's degree and a broad, general education that includes basic science requirement and the development of skills in reading, writing, and speaking. Course work must be completed in biology/zoology, general chemistry, organic chemistry, physics, mathematics, and English.

Students are chosen for admission to medical school primarily on the basis of their undergraduate grades, scores on the Medical Admission Test, recommendations and an interview. You should keep in mind only a fraction of the applicants are accepted. It is, therefore, important to select a major that will prepare you to pursue alternative career goals for occupational flexibility.

Students entering the Medical transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

This plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Medical transfer curriculum plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science, and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 105	Trigonometry	2
or MATH 165	Calculus I (4)	
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
Computer Information Systems Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		66 (68)

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading NDUS: General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics, and English. Courses that develop reading and communications skills and two years of a foreign language, if available, are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Music Transfer

► Contact Information

Bryan Poyzer, program coordinator
 Bryan.Poyzer@ndscs.edu
 701-671-2872
 Stern Cultural Center 132

► Delivery Methods

Face-to-Face: Wahpeton
 Online: Some Classes
 Combination

The NDSCS Performing Arts program has four purposes. It allows students to enjoy music and develop their skills by being in performing groups. It provides general education courses that transfer to colleges or universities. It provides a core curriculum for students planning a music major. Finally, it makes artistic contributions to the campus and community.

Performing groups open to most students include concert band and concert choir. From them, students can participate in jazz band and various vocal ensembles. Students are provided with state-of-the-art sound equipment for the touring Wildcat Singers and Wildcat Jazz Band. The Harry Stern and Ella Stern Cultural Center is one of the best auditoriums in the area. Students also may be in small performing groups or take private lessons.

Students of all abilities are welcome in the music program, whether they plan to major in music or plan to continue their enjoyment through classroom study or performance ensembles. Many school instruments are provided.

Career possibilities include instrumental and choral conductor, classroom or private teacher, studio technician, composer, and/or performer.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
Wellness Elective(s)		2
MUSC 115	Concert Band (1 credit/term)	4
or MUSC 117 Concert Choir (1 credit/term) (4)		
MUSC 122	Music Theory I	3
MUSC 123	Aural Skills I	2
MUSC 124	Music Theory II	3
MUSC 125	Aural Skills II	2
MUSC 138	Jazz Band	1
MUSC 157	Pop-Swing Choir	1
MUSC 182	Technology of Music	3
MUSC 245	Applied Music-Private Piano Lessons (1 credit/term)	2
or MUSC 160 Classic Piano I (1) and MUSC 161 Classic Piano II (1)		
Voice or Instrumental Lessons (1 credit/term)		2
Students may select from the following:		
MUSC 144 Applied Music-Private Voice Lessons (1)		
MUSC 145 Applied Music-Private Instrumental Lessons (1)		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Required:		
MUSC 100 Music Appreciation (3)		
Math, Science and Computer Information Systems Electives		13
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>		
Social and Behavioral Sciences Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
General Education Electives		6
Total Required Credits		68

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are high school band and/or high school choir.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Natural Science Transfer

► Contact Information

Shannon King, department chair
Shannon.King@ndscs.edu
701-671-2296
Haverty Hall 223

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Natural Science transfer curriculum plan is designed for the individual who is considering a career in any of the life sciences. All colleges and universities require core courses such as English, social sciences, humanities, and physical education, as well as a strong foundation in mathematics, chemistry, and biology for students seeking a bachelor's degree. The mathematics and science courses form the foundation for more advanced studies at the university.

To be successful in this field, you must be strongly motivated, possess high scholastic ability and have an interest in and an aptitude for mathematics and the sciences. Important skills include attention to details, a strongly developed sense of curiosity and imagination, self-discipline, patience, and ambition.

Students entering the Natural Science transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Natural Science plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Careers in the Natural Sciences are many and varied. Possible areas of specialization include biology, botany, genetics, ecology, microbiology, and zoology. Many job opportunities exist in education, research and government agencies. Although some entry-level positions require only a bachelor's degree, most jobs require one or more advanced degrees such as a master's or Ph.D.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		68

PHYS 212 College Physics II and PHYS 212L College Physics II Lab are also recommended but not required for graduation.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics, and English. Courses that develop reading and communications skills are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Nursing Transfer

► Contact Information

Deb Smith, department chair
Debra.Smith@ndscs.edu
701-671-2969
Mayme Green Allied Health Center 213E

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Nursing transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English, math, physical sciences, social sciences, humanities, and physical education. All colleges and universities require these core courses for students seeking a bachelor's degree. An Associate in Science degree is awarded upon completion of the program. This program provides articulation to four-year bachelors of nursing programs

Nurses are employed in a rapidly changing environment. More than one million women and men are currently employed as registered nurses, and the number is growing. The nursing professional may work in a variety of settings. Almost two-thirds of all professional nurses work in hospitals, while another third work in a variety of community health agencies. Opportunities also exist in private duty, education and industry.

- *Hospital nurses* form the largest group of nurses. Most are staff nurses who provide bedside nursing care and carry out medical regimens.
- *Office nurses* assist the physicians in private practice, clinics, surgery centers, emergency medical centers and health maintenance organizations (HMOs).
- *Home health nurses* provide periodic services, prescribed by a physician, to patients at home.
- *Long term care nurses* manage nursing care for residents with conditions ranging from fractures to Alzheimer's disease.
- *Public health nurses* work in government, private agencies, clinics, schools, retirement communities, and other community settings.

Students entering the Nursing transfer curriculum plan, who do not have the proper prerequisites, may need additional preparatory classes.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
BIOL 213	*General Pathology	3
CHEM 115	**Introductory Chemistry	3
CHEM 115L	**Introductory Chemistry Laboratory	1
CHEM 116	**Introduction to Organic and Biochemistry	3
CHEM 116L	**Introduction to Organic and Biochemistry Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
*ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
*MATH 103	College Algebra	3
or MATH 104	Finite Mathematics	
MATH 210	*Elementary Statistics	3
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 111	Introduction to Psychology	3
PSYC 250	Developmental Psychology	3
PSYC 270	*Abnormal Psychology	3
SOC 110	Introduction to Sociology	3
	CIS/CSCI Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	General Education Elective	1
Total Required Credits		65

*A placement test may be required if you have not met the English (ENGL 110) or Math (MATH 103 or higher) requirements.

*Not required by all nursing programs

**NDSU Transferees contact your advisor

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022

Optometry Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Optometry transfer curriculum plan students generally major in an area of science. Students should keep in mind, however, not all optometric school applicants are accepted. Therefore, it is important to select a major that will prepare you to pursue alternative career goals for occupational flexibility.

The optometric schools in the United States have no uniform requirements for pre-professional study. They do, however, recommend a bachelor's degree and a broad, general education that includes basic science requirement and the development of skills in reading, writing, and speaking. Course work must be completed in biology/zoology, general chemistry, organic chemistry, physics, mathematics, and English. It is also noted that most, if not all, schools require anatomy and physiology, biochemistry, and microbiology. A student should contact the college or university of their choice to confirm a list of recommended courses.

Students are chosen for admission to optometric school primarily on the basis of their undergraduate grades, scores on the Optometry College Admission Test, and letters of recommendation.

Students entering the Optometry transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Optometry plan provides preparation for the professional curriculum. This plan also meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Optometry transfer curriculum plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, and natural science.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
or PHYS 251	University Physics I (4)	
and PHYS 251L	University Physics I Lab (1)	
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
or PHYS 252	University Physics II (4)	
and PHYS 252L	University Physics II Lab (1)	
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		68

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading NDUS: General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics, and English. Courses that develop reading and communications skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Paralegal Transfer

► Contact Information

Jeff Hart, associate professor
 Jeffrey.Hart@ndscs.edu
 701-671-2342
 Old Main 435

► Delivery Methods

Face-to-Face: Wahpeton
 Face-to-Face: Fargo
 Online: Some Classes
 Combination

This curriculum is available to the student whose goal is a paralegal (BS) degree. The Paralegal transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English and humanities, math, physical sciences, social and behavioral sciences, and physical education. All colleges and universities require these core courses for students seeking a bachelor's degree. An Associate in Arts degree is awarded upon completion of the program, and the student can transfer to most four-year colleges and universities as a junior.

Paralegals, also called legal assistants, work in law offices in a variety of positions related to the legal profession. As a paralegal you may be involved with legal research, client contact, factual investigation, and drafting documents. The Bureau of Labor Statistics projects employment growth for paralegals will grow by 15 percent through 2026, which is much faster than the average growth for all occupations.

The Paralegal transfer curriculum plan meets the Liberal Arts Program Purposes listed in the NDSCS Catalog.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
CSCI 116	Business Use of Computers	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
HIST 101	Western Civilization I	3
and HIST 102	Western Civilization II	3
or HIST 103	U.S. History to 1877 (3)	
and HIST 104	U.S. History Since 1877 (3)	
FYE 101	Science of Success	1
Lab Science Elective(s)		3/1
MATH 103	College Algebra	3
MATH 210	Elementary Statistics	3
PHIL 215	Contemporary Moral Issues	3
Wellness Elective(s)		2
General Education Electives**		15
Social and Behavioral Science:		16
Required:		
CJ 160	The Legal System (4)	
CJ 201	Introduction to Criminal Justice (3)	
CJ 232	Administration of Justice (3)	
POLS 115	American Government (3)	

Total Required Credits **65**

* Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

** Suggested Electives:

ACCT 215	Business in the Legal Environment (3)
BUSN 120	Fundamentals of Business (3)
ECON 105	Elements of Economics (3)
ECON 201	Principles of Microeconomics (3)
ECON 202	Principles of Macroeconomics (3)
ENGL 125	Introduction to Professional Writing (3)
ENGL 232	Mythology (3)
MUSC 100	Music Appreciation (3)
POLS 116	State and Local Government (3)
PSYC 111	Introduction to Psychology (3)
PSYC 250	Developmental Psychology (3)
SOC 110	Introduction to Sociology (3)
SOC 115	Social Problems (3)
SOC 220	Family (3)

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Pharmacy Transfer

► Contact Information

Melissa Krava, department chair
Melissa.Krava@ndscs.edu
701-671-2114
Mayme Green Allied Health Center 213H

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Today's pharmacist is the most accessible health care professional, with the average American visiting a retail drug store every 13 days. The retail pharmacist is in a position to assist patients with a wide range of health issues regarding medications, disease states, treatments, preventive measures, and healthy lifestyles. Surveys show that people rely on their community pharmacists for health care information and admire them for it (pharmacists have been the most widely respected professionals in national surveys for several years). Hospital/institutional pharmacists interact with physicians and other professionals regarding patients' medication regimens and treatment plans, providing advice on drug usage, interactions, side effects, and patient education. These clinical pharmacists strive for rational, effective, economical drug choice and usage in their institutions.

Students entering the Pharmacy transfer curriculum plan, who do not have the proper prerequisites, may need additional preparatory classes.

The Pharmacy transfer curriculum plan provides preparation for the four-year professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSU Catalog*.

The successful pharmacy student has good communication skills, is highly motivated, possesses scholastic ability and has an aptitude for the biological, physical and medical sciences.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ECON 201	Principles of Microeconomics	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 210	Elementary Statistics	3
PHYS 211	College Physics I	3
Computer Information Systems Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		5
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		70

This curriculum does not fully meet all the educational requirements for the North Dakota State University College of Pharmacy. Additional courses required at NDSU include microbiology, communications, and biochemistry. Students applying for other colleges of pharmacy will need to check for current entrance requirements.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSU Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics, and English. Courses that develop reading and communications skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Physical Science Transfer

► Contact Information

Dr. Bill Shay, professor
William.Shay@ndscs.edu
701-671-2341
Haverty Hall 228

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Physical Science transfer curriculum plan is not generally a college major in itself, but is a springboard into a variety of college majors. Possible university majors for the physical science student to consider include astronomy, chemistry, consumer food science, geology, meteorology, physics, and mathematics.

Students should consult with their academic advisor in selecting free electives, as their future area of study may have additional requirements. For example, some students may need to take organic chemistry during their second year.

Students entering the Physical Science transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

This plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Physical Science transfer curriculum plan, other programs a student may transfer into are chemistry, physics, engineering, geology, and environmental science.

Course Code	Course Title	Credits
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
or ENGL 125	Introduction to Professional Writing (3)	
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
PHYS 251	University Physics I	4
PHYS 251L	University Physics I Lab	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Lab	1
	Electives*	5
	Computer Information System Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
Total Required Credits		65

* Depending on ACT math score or Accuplacer math score, a student may be required to take pre-calculus prior to starting the calculus sequence. This is to be determined through discussion with an academic advisor.

**MATH 266 Introduction to Differential Equations is recommended.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are chemistry, mathematics, physics, English, and computer science. Courses that develop reading and communications skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022

Liberal Arts

Psychology Transfer

► Contact Information

Jennifer Krueger, instructor
Jennifer.A.Krueger@ndscs.edu
701-671-2433
Old Main 444

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

This transfer curriculum plan is available to the student, whose goal is a career in psychology or related fields, including medicine, neurosciences, business, industry, mental health, and applied psychology.

The Psychology transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English, humanities, math, physical sciences, social and behavioral sciences, and wellness. All colleges and universities require these core courses for students seeking a bachelor's degree.

Upon completion of the program, the student is awarded an Associate in Arts degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Recommended:		
PHIL 215	Contemporary Moral Issues (3)	
Wellness Elective(s)		2
MATH 103	College Algebra	3
MATH 210	Elementary Statistics	3
BIOL 111	Concepts of Biology	3
BIOL 111L	Concepts of Biology Lab	1
or BIOL 150 General Biology I (3)		
and BIOL 150L General Biology I Lab (1)		
CSCI 116	Business Use of Computers	3
PSYC 111	Introduction to Psychology	3
PSYC 250	Developmental Psychology	3
PSYC 255	Child and Adolescent Psychology	3
PSYC 270	Abnormal Psychology	3
SOC 110	Introduction to Sociology	3
General Education Electives*		19
Recommended:		
PSYC 103	Addictions and Alternatives (2)	
PSYC 230	Educational Psychology (3)	
SOC 115	Social Problems (3)	
SOC 220	Family (3)	
SOC 221	Minority Relations (3)	

Total Required Credits 65

*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022



Liberal Arts

Social Work Transfer

► Contact Information

Char Schuler, department chair
Charlotte.Schuler@ndscs.edu
701-671-2364
Old Main 442

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

The Social Work transfer curriculum plan is designed to prepare students with the general education and introductory courses necessary to pursue a bachelor's degree in Social Work. This curriculum will also provide students with the skills, knowledge and abilities necessary to advance in their profession. Students will participate in both classroom and field experiences that are intended to provide a generalist-model foundation in helping people. This program of study also has the flexibility to allow students to tailor their educational experience with the client population of their choice.

Transfer Options

Students interested in transferring to a four-year undergraduate program will find that completion of the Social Work transfer curriculum plan will provide them with a number of options. Many students have transferred successfully into accredited Social Work programs at a number of colleges and universities.

Course Code	Course Title	Credits
PSYC 265	Motivational Interviewing	3
SWK 255	Social Work in a Modern Society	3
SWK 256	Development of Social Welfare	3
SWK 297	Student Internship	4

Related/General Education Courses

COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
PSYC 103	Addictions and Alternatives	2
PSYC 111	Introduction to Psychology	3
PSYC 250	Developmental Psychology	3
PSYC 270	Abnormal Psychology	3
PHIL 215	Contemporary Moral Issues	3
SOC 110	Introduction to Sociology	3
SOC 221	Minority Relations	3
General Education Electives		6
Suggested:		
POLS 115	American Government (3)	
ECON 201	Principles of Microeconomics (3)	
Humanities/History Elective		3
<i>Any course marked ND:HUM or ND:HIST</i>		
Math, Science and Computer Information Systems Electives		13
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>		
Required:		
BIOL 115	Concepts of Anatomy and Physiology (3)	
BIOL 115L	Concepts of Anatomy and Physiology Lab (1)	
Wellness Elective(s)		2
Total Required Credits		67

Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process. Applicants are invited to visit the program.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Arts degree in Liberal Arts.

Revised: May 2022

Liberal Arts

Wildlife Management Transfer

► Contact Information

Margaret Brady, associate professor
Margaret.Brady@ndscs.edu
701-671-2119
Haverty Hall 234

► Delivery Methods

Face-to-Face: Wahpeton
Online: Some Classes
Combination

Wildlife management is a career for persons that have an aptitude for science, an ability to work with the public and a love of the outdoors. Wildlife managers may do many kinds of work. They give lectures to groups, act as law enforcement officers, and as conservation officers. Wildlife managers survey wildlife populations (whether resident or migratory) to estimate the abundance, variety, and distribution of animals in a region and to learn whether the available food and cover will support them. Managers may establish hunting and trapping seasons.

All wildlife managers must have at least a bachelor's degree. A master's degree is common, and a doctoral degree is usually required for those who plan to go into wildlife research or teaching. Besides studies in the life sciences, students must take courses that will prepare them to work with the public, with researchers and with government agencies. Tact and communication skills are essential for managers because they often deal with people in their work.

Students entering the Wildlife Management transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Wildlife Management transfer curriculum plan provides articulation into a professional curriculum. This plan also meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, natural science, environment science, and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Laboratory	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Laboratory	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
Biology Electives		4
<i>To be determined through discussion with academic advisor</i>		
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
Total Required Credits		68

MATH 166 Calculus II and/or PHYS 212 College Physics II may be required for wildlife management majors by some universities. Consult with your advisor.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, keyboarding, chemistry, zoology, mathematics, physics, and English. Applicants may be required to complete a basic skills evaluation during the admissions process.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Revised: May 2022



Mechanical Systems

Mechanical Systems

► Contact Information

Jeff Kukert, program coordinator
 Jeffrey.Kukert@ndscs.edu
 701-671-2515
 Barnard Hall 122

► Delivery Methods

Face-to-Face: Wahpeton

The Mechanical Systems program is designed to provide the student with the basic knowledge of the plumbing code, trade skills and good work habits, and to credit the student with hours toward apprenticeship training time. The program also will offer the fundamentals of service and installation of residential and light commercial heating and air conditioning equipment. Qualified graduates will have a variety of occupational opportunities available in the HVAC/R and plumbing industries. General education and related instruction are provided so the student will have the opportunity to grow within the occupational field.

Smaller mechanical contractors may struggle to keep their employees doing just plumbing or just heating and air conditioning work. They require technicians with skills in both areas. The Associate in Applied Science in Mechanical Systems provides the training in both programs over two, nine-month periods on campus.

This curriculum involves state codes, various aspects of materials, equipment and fixtures, service, and installation procedures. This requires a working knowledge of the state code, layout of water and sanitation systems in the buildings in accordance with the code. This curriculum also involves doing take-off work from blueprints; working with a variety of materials used in piping such as cast iron, plastic, copper, and steel; the setting of various fixtures and proper hookups; and the service of various valves, controls, fixture items and domestic water systems. It will involve the operation, service, and repair or change-out of various mechanical equipment, controls, and accessories of residential and light commercial systems.

The service of mechanical equipment for heating using fossil fuels requires a knowledge of fuels, fuel-air mixtures, combustion testing, and control systems. The mechanical equipment for cooling requires knowledge of refrigerants and their systems, compressor change-out, refrigerant recovery and recycling, and system clean up. The equipment studied includes gas, oil, and electric heating equipment along with conventional cooling equipment and heat pumps.

Students are encouraged to take the bulk of their plumbing coursework first and then return the second year for their HVAC/R Technology coursework. Students who fail to complete all the required general education courses will be granted certificates in each respective program (Plumbing and HVAC/R Technology). Both the Plumbing and HVAC/R certificate course work offer students study in "Green" technologies, which are in increasing demand as skills in this career choice.

NOTE: This program requires either an HP EliteBook 850 or ZBOOK 15 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 for the EliteBook 850 and \$2100.00 for the ZBOOK 15, if purchased through NDSCS. For further information, contact the NDSCS ITS Department at 701-671-3333 option 5. **The laptop is only required in the 2nd year of the Mechanical Systems program.**

Course Code	Course Title	Credits
MSYS 151	Drafting and Sketching	2
PLMB 101	Plumbing Theory and Code I	3
PLMB 102	Plumbing Theory and Code II	5
PLMB 105	Core Curriculum for Plumbers	2
PLMB 111	Plumbing Lab I	6
PLMB 112	Plumbing Lab II	6
PLMB 114	Residential Plumbing Application	1
PLMB 132	Plumbing Drawing, Sketching and Design	3
REFG 101	Refrigeration Technology	3
REFG 102	Refrigeration Technology	3
REFG 104	Refrigerants: Chemistry and Ecology	1
REFG 112	Domestic and Residential Systems Lab	2
REFG 113	Refrigeration Systems Lab	2
REFG 121	Electrical Theory I	3
REFG 122	Electrical Theory II	3
REFG 123	Electrical Lab I	2
REFG 124	Electrical Lab II	2
REFG 253	Heating Equipment Theory	2
REFG 255	Heating Equipment Lab	3

Related/General Education

ENGL 110	English Communication	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
Math Elective(s)		6
Wellness Elective(s)		2

Total Required Credits **73**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Mechanical Systems.

Revised: May 2022

Practical Nursing – AAS

Contact Information

Jeri Christiansen, PN program coordinator
 Jeri.Christiansen@ndscs.edu
 701-671-2640
 Mayme Green Allied Health Center 213M

Delivery Methods

Face-to-Face: Wahpeton
 Face-to-Face: **Fargo
 Combination

This **two-year** program is available to high school graduates or transfer students who are interested in pursuing a career in nursing. The curriculum is five semesters and awards an Associate in Applied Science degree in Practical Nursing. The graduate has an excellent opportunity for immediate entry into the health profession and/or transfer to an associate or bachelor's program for nursing. All general education courses are transferable within the NDUS system. Application deadlines are April 1 (starting fall semester) and October 15 (starting spring semester). Practical nurses have excellent job opportunities, which include employment in hospitals, long-term care facilities, clinics, home health, hospice, schools, and industry.

The first two semesters of the program consist of classroom, laboratory, and clinical instruction at the college and local long-term care facilities. The final three semesters of the program include clinical affiliations in adult, maternal-child, psychiatric, long-term care, home health, and clinic nursing. Interactive Video Network (IVN) classroom course work is utilized in Wahpeton or Fargo. Tutoring is available at the Academic Services Center (ASC) for many general education and some nursing courses.

Criminal background checks will be required. A previous conviction may affect clinical rotations and a state board of nursing could deny an application for licensure as a Practical Nurse. If arrested, charged and/or convicted of any felony, the applicant is required to meet with the department chair. A federal criminal history background check will also be required to test for the NCLEX-PN.

The NDSCS Practical Nursing program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326, 404-975-5000, and has full approval from the North Dakota Board of Nursing, 919 South 7th Street, Suite 504, Bismarck, ND 58504, 701-328-9777.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Course Code	Course Title	Credits
NURS 101	Introduction to Nursing	5
NURS 102	Introduction to Adult Nursing	6
NURS 231	Psychiatric Mental Health Nursing	2
NURS 232	Adult Nursing	5
NURS 233	Adult Nursing Clinical	5
NURS 245	Maternal Child Nursing	4
NURS 246	Maternal Child Nursing Clinical	2
NURS 250	Leadership in the Long-Term Care Setting	2
NURS 251	NCLEX-PN Review	1
PHRM 205	Pharmacology for Nursing	3

Related/General Education Courses

*BIOL 220	Anatomy and Physiology I	3
*BIOL 220L	Anatomy and Physiology I Lab	1
*BIOL 221	Anatomy and Physiology II	3
*BIOL 221L	Anatomy and Physiology II Lab	1
**ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
*MICR 202	Introductory Microbiology	3
*MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 250	Developmental Psychology	3
SOC 110	Introduction to Sociology	3
Humanities Elective— PHIL 215 Contemporary Moral Issues		3

Total Required Credits 66

*This course has an expiration date of completion when transferring into the program. Check with the program.

**A placement test may be required if you have not met the ENGL (110 or higher) requirement.

Practical Nursing (NURS) courses must be taken in sequence. Sequencing is available on the program website at www.ndscs.edu/nursing.

Equal opportunity policy

The NDSCS Department of Nursing adheres to the NDSCS college equal opportunity policy as stated in the *NDSCS Catalog*.

Admission/Selection Requirements*

Applicants will be admitted to the program following a selection process which needs to be completed prior to the deadline date(s) of October 15 or April 1. Applicants that apply after the deadline(s) can complete the selection requirements and be placed on a waiting list. If openings become available, they may be selected, based on points, until the first day of class.

1. Complete the NDSCS Application Process for Admission. Refer to the NDSCS website at www.ndscs.edu/Admissions for details.
2. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Complete the Supplemental Program Application for the Practical Nursing Program.
4. Submit a high school transcript /GED with a 2.0 GPA or higher. If an applicant fails to meet the high school /college GPA of a 2.0, the following requirement applies: they must complete, or be in the process of completing, at least 12 general education credits from the nursing curriculum and achieve a "C" or higher to apply to the program.
5. Submit official ACT and/or placement testing results to Enrollment Services. Results must meet the criteria to enroll in ASC 93 Algebra Prep III the first semester of the program OR submit an official transcript with ASC 93 completed with a "C" or higher.
6. Complete a program selection assessment examination and meet the program benchmark composite score of **45**. Exam can be retaken once.
7. Review Essential Functions for Practical Nursing Students and submit the Essential Functions Verification form.

Criteria for Selection

A point system is utilized based on the following criteria: High School GPA or GED, assessment scores, most current college GPA (12 credits or more), grades in college level BIOL 220/220L, 221/221L and MICR 202/ 202L.

It is highly recommended the applicant contact the program periodically during the selection process to assure file completion. Incomplete files will not be considered for selection.

Selection process details contact information and forms are in the Practical Nursing-AAS Program Information and Selection Process Booklet available at www.ndscs.edu/Nursing (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

Program Selection Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information

For accepted students, specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) OR Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) ONLY), and health insurance are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on clinical site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Award

Upon successful completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science degree in Practical Nursing and be eligible for the National Council Licensure Exam for Practical Nurses (NCLEX-PN).

Revised April 2022



Nursing

Associate in Science in Nursing - ASN

• Registered Nursing (LPN to RN)

▶ Contact Information

Trina Fear, RN program coordinator
Trina.Fear@ndscs.edu
701-671-2698
Mayme Green Allied Health Center 213L

▶ Delivery Methods

Face to Face: Wahpeton
Online: Some Classes

This program is available to AAS or AS Licensed Practical Nurses who wish to continue their nursing education and become a Registered Nurse (RN). The graduate will have an excellent opportunity for immediate employment and/or transfer to a baccalaureate program in nursing utilizing the transfer (articulation) agreements the program has with select colleges.

The Registered Nursing courses follow a specific sequence as the student progresses through the program. Required general education courses may be taken at any time during the program but must be completed within three semesters of beginning the program. It is highly recommended that students complete all general education courses prior to enrolling in the RN program courses.

Criminal background checks will be required. A previous conviction may affect clinical rotations and a state board of could deny an application for licensure as a Registered Nurse. If arrested, charged and/or convicted of any felony, the applicant is required to meet with the department chair and/or RN program coordinator. A federal criminal history background check will also be required to test for the NCLEX-RN.

The RN program has been granted full approval from the North Dakota Board of Nursing (NDBON), 919 South 7th Street, Suite 504, Bismarck, ND 58504, 701-328-9777, www.ndbon.org and is initially accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta GA 30326, 404-975-5000, www.acenursing.org

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Equal Opportunity Policy

The NDSCS Department of Nursing adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog* (www.NDSCS.edu).

Course Code	Course Title	Credits
Prerequisite Courses		
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PHIL 215	Contemporary Moral Issues	3
PSYC 250	Developmental Psychology	3
SOC 110	Introduction to Sociology	3
LPN Transfer Credits		14
Total Prerequisite Credits		44

Registered Nursing Program Courses		
NURS 201	Complex Care Concepts I	3
NURS 202	Complex Care Concepts I Clinical	2
NURS 204	Maternal Child	3
NURS 205	Complex Nursing Care Concepts II	2
NURS 206	Complex Nursing Care Concepts II Clinical	1
NURS 255	Role Transition	1
NURS 262	Community/Mental Health Nursing	3
NURS 263	Leadership	2

**Registered Nursing Program General Education Courses		
COMM 110	Fundamentals of Public Speaking	3
ND: MATH***		3
ND: SS		2
HUM or HIST Elective (No PHIL Prefix)		3
ND: COMPSC		2

Total Required Program Credits **30**

A placement test may be required if you have not met the Math (**103 or higher) requirement.

At least 16 credits of the final 24 credits of the curriculum must be taken through NDSCS and be from the RN required courses.

Admission/Selection Requirements*

Applicants will be admitted to the program following a selection process. *Classes are dependent on enrollment.* The following requirements must be met by **April 15**. Applicants that apply after the deadline can complete the selection requirements and be placed on a waiting list. If openings become available, they may be selected, based on points, until the first day of class.

- Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS. Submit an official high school transcript and all official college transcripts to Enrollment Services.
- Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
- Complete the Supplemental Program Application for the ASN Nursing Program.
- Be a graduate of a Board of Nursing approved Associate in Applied Science or an Associate in Science Practical Nursing Program.
- Hold an active and unencumbered license as a Practical Nurse (LPN).
- Applicants who will be graduating from an approved associate degree granting Practical Nursing Program the semester prior to starting the RN Program can apply with the following provision: Applicants must pass the National Council Licensure Exam for Practical Nurses (NCLEX-PN) with proof of successful completion of the exam submitted to the RN Program no later than **July 15**.
- Achieve the benchmark minimum of a "C" in all prerequisite courses required for the Registered Nursing program. A minimum cumulative GPA of 2.25 is required.
- Submit official ACT and/or placement testing results to Enrollment Services. Results must meet the criteria to enroll in MATH 103 the first semester of the program OR submit an official transcript with MATH 103 completed with a "C" or higher.
- Complete selection assessment examinations and meet the program benchmarks for both assessments. Refer to *Selection Process Booklet for specific benchmark scores. The program reserves the right to change the assessments.
- Review Essential Functions for Registered Nursing Students and submit the Essential Functions Verification form.

Criteria for Program Selection

The class selection process will be determined by meeting required selection benchmark scores on selection assessment examinations, cumulative GPA of last completed semester, PN work experience, and number of RN general education courses completed. Selection order will be based on the highest total points achieved. It is highly recommended that the applicant checks with the RN program to ensure all admission requirements have been received before the application deadline.

***Program selection process details, contact information and forms are located in the Registered Nursing-ASN Program Information and Selection Process Booklet available at www.NDSCS.edu/Nursing (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.**

Selection Requirements are subject to revision. Please check with the department or program website under Program Selection Requirements for current information.

For accepted students, specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) OR Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) ONLY), and health insurance are required by the program. *Additional requirements could include but not limited to: drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on clinical/preceptor site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Award

Upon successful completion of the required courses ("C" or higher), students will be awarded an Associate in Science in Nursing (RN) degree; and be eligible for the National Council Licensure Exam for Registered Nurses (NCLEX-RN).

Revised: April 2022

Registered Nursing - AAS

► Contact Information

Trina Fear, RN program coordinator
Trina.Fear@ndscs.edu
701-671-2698
Mayme Green Allied Health Center 213L

► Delivery Methods

Face to Face: Wahpeton
Online: Some Classes

This **two-year** program is available for individuals who wish to pursue a career in nursing and become a Registered Nurse (RN). The graduate will have an excellent opportunity for immediate employment and/or transfer to a baccalaureate program in nursing.

The course sequence for the program begins fall semester and is sequenced to include general education and nursing program courses over four semesters, concluding with the national examination (NCLEX-RN) to receive licensing as a Registered Nurse (RN).

Criminal background checks will be required. A previous conviction may affect clinical rotations and a state board of nursing could deny an application for licensure as a Registered Nurse. If arrested, charged and/or convicted of any felony, the applicant is required to meet with the department chair and/or RN program coordinator. A federal criminal history background check will also be required to test for the NCLEX-RN.

The Registered Nursing program has been granted full approval from the North Dakota Board of Nursing (NDBON), 919 South 7th Street, Suite 504, Bismarck, ND 58504, 701-328-9777, www.ndbon.org and is initially accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta GA 30326, 404-975-5000, www.acenursing.org.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Equal opportunity policy

The NDSCS Department of Nursing adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog* (www.NDSCS.edu).

Course Code	Course Title	Credits
NURS 114	Role Development	1
NURS 115	Essentials for Registered Nursing I	4
NURS 116	Essentials for Registered Nursing I Clinical	1
NURS 117	Mental Health Nursing/Clinical	3
NURS 118	Essential for Registered Nursing II	4
NURS 119	Essentials for Registered Nursing II Clinical	2
NURS 201	Complex Nursing Care Concepts I	4
NURS 202	Complex Nursing Care Concepts I Clinical	3
NURS 203	Preventative Community Health	2
NURS 204	Maternal Child	4
NURS 205	Complex Nursing Care Concepts II	3
NURS 206	Complex Nursing Care Concepts II Clinical	3
NURS 207	Leadership/Preceptorship	3
NURS 208	Transition to Practice	1
PHRM 205	Pharmacology for Nursing	3

Related/General Education Courses

BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
CSCI 116/ HUM/HIST Elective		3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 250	Developmental Psychology	3

Total Required Program Credits

69

Admission/Selection Requirements*

Applicants will be admitted to the program following a point-based selection process. The following requirements must be met by **April 1st**. Applicants that apply after the deadline can complete the selection requirements and be placed on the alternate list. If openings become available the applicant may be selected, based on points, until August 1st.

1. Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
2. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Complete the Supplemental Program Application for the Registered Nursing-AAS Program.
4. Submit high school transcript/GED and all college transcripts. Cumulative GPA of 2.25 is required. If college credits total 12 or more; college GPA will be utilized otherwise, the high school GPA will be utilized.
5. Submit official ACT and/or placement testing results to Enrollment Services. Results must meet the criteria to enroll in ENGL 110 and MATH 103 the first semester of the program OR submit an official transcript with ENGL 110 and MATH 103 completed with a "C" or higher.
6. Complete a program selection assessment examination and meet the program benchmark composite score of 55. Exam can be retaken once.
7. Be a Certified Nursing Assistant (CNA) and submit a copy of the certificate. If an applicant is in process (as of April 1); they may continue the selection process and be placed on the alternate list (based on points). Once the CNA is complete, and if an opening occurs, they may be accepted up to August 1st.
8. Review Essential Functions for Registered Nursing Students and submit the Essential Functions Verification form.

Criteria for Program Selection

The point-based selection process will be determined by meeting all selection requirements, assessment score, *select* completed college level general education courses within the program plan (BIOL 2201/220L and BIOL 221/221L), overall GPA (high school or GED/college) and CNA certificate. Selection order will be based on the highest total points achieved. It is highly recommended that the applicant checks with the RN program to ensure all admission requirements have been received before the application deadline.

***Program selection process details contact information and forms are in the Registered Nursing-AAS Program Information and Selection Process Booklet available at www.NDSCS.edu/Nursing (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.**

Selection Requirements are subject to revision. Please check with the department or program website under Program Selection Requirements for current information.

For accepted students, specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) OR Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) ONLY), and health insurance are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on clinical/preceptor site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Award

Upon successful completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science (RN) degree; and be eligible for the National Council Licensure Exam for Registered Nurses (NCLEX-RN).

Revised April 2022



Occupational Therapy Assistant

Occupational Therapy Assistant

Contact Information

Beth Schlepp, department chair
AlliedHealthCareers@ndscs.edu
701-671-2982
Mayme Green Allied Health Center 213G

Delivery Methods

Face to Face: Wahpeton
Online: *Some Classes

Occupational therapy assistants are a valued team member of the healthcare setting. COTA's assess, utilize and adapt everyday occupations to improve daily living skills, promote health and wellness, and enhance independence in the daily occupations of their clients. OT practitioners can work with clients ranging from newborn to geriatric in a variety of settings including school systems, hospitals, mental health clinics, nursing homes, and rehabilitation facilities. The COTA provides intervention strategies under the supervision of a registered occupational therapist.

The program at NDSCS offers an exceptional education in a supportive learning environment. The curriculum consists of three semesters of academic preparation and one semester of full-time fieldwork education. Semester progression is based on meeting established benchmarks. Criminal background checks will be required. A felony charge and/or conviction may affect fieldwork placements, and therefore, program completion. If this issue applies, the student must meet with the department chair and fieldwork coordinator. All expenses incurred in preparation for, and during fieldwork are the responsibility of the student.

The OTA program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929. ACOTE's telephone number, C/O AOTA, is (301) 652-AOTA and the web address is www.acoteonline.org. Graduates will be eligible to sit for the National Certification Examination for the Occupational Therapy Assistant, administered by NBCOT, One Bank Street, Suite 300, Gaithersburg, MD 20878, phone number 301-990-7979, Federal ID: 52-1620299, www.nbcot.org. When application is made, the candidate will be required to disclose any previous felony conviction, which may affect the graduate's eligibility to sit for the exam. Upon successful completion of the exam, the candidate will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure, which is based on the results of the examination.

The OTA program adheres to the NDSCS equal opportunity policy as stated in the *NDSCS Catalog*.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Course Code	Course Title	Credits
OTA 101	Introduction to Occupational Therapy	3
OTA 102	Disability Awareness	1
*OTA 105	Medical Terminology	2
OTA 110	Introduction to Muscle Function	2
OTA 111	Therapeutic Media	1
OTA 112	Documentation	1
OTA 113	Physical Disabilities I: Theory and Practice	3
OTA 114	Pediatrics I: Theory and Practice	2
*OTA 115	Behavioral Health: Theory/Practice - Children and Adolescents	2
OTA 151	Fieldwork Level I — Experience I	1
OTA 213	Physical Disabilities II: Theory and Practice	2
OTA 214	Pediatrics II: Theory and Practice	3
*OTA 215	Behavioral Health: Theory/Practice - Adults	3
OTA 216	Professional Issues	2
OTA 217	Simulation Lab	1
OTA 218	Aging	2
OTA 219	Community Models of OT Practice	2
OTA 252	Fieldwork Level I — Experience II	1
OTA 253	Orientation to Fieldwork II	1
OTA 254	Fieldwork Level II — Experience I	6
OTA 255	Fieldwork Level II — Experience II	6
OTA 256	Seminar	1
Related/General Education Courses		
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology Lab I	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology Lab II	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
PSYC 250	Developmental Psychology	3
PSYC 270	Abnormal Psychology	3
**Wellness Elective		2
Total Required Credits		71

* These courses are offered in an online platform and will include some evening and weekends face-to-face classroom session. Exams for online courses follow the NDSCS Distance Education Proctoring Guidelines.

** Recommended: HPER 217 Personal and Community Health or NUTR 240 Principles of Nutrition (and Diet Therapy). OTA courses must be taken in sequence. Sequencing of courses is available on the program's website at www.NDSCS.edu/OTA.

Admission/Selection Requirements:

Applicants will be admitted to the program according to the following process:

Fall Semester (first year): Students will be *accepted* into the program on a first come basis until capacity is reached, so early application/registration is strongly encouraged. Students admitted will take all foundational OTA prefix courses offered fall semester. The following criteria must be met for fall semester selection:

1. Complete the NDSCS Admission process and submit an official high school transcript and all official college transcript(s) to **Enrollment Services**.
2. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.
3. Submit official ACT and/or Placement testing results to **Enrollment Services**. Results must meet criteria to enroll in English 110 fall semester **OR** submit an official college transcript with ENGL 110 completed with a "C" or higher.
4. Applicants (with a college transcript) must have a GPA of 2.25 or higher.
5. Review Essential Functions for Occupational Therapy Assistant Students and submit the Essential Functions Verification Form.

Spring Semester (first year): Students will be granted *continued acceptance* in the program using a point-based selection process. The following criteria must be submitted to the OTA program by **December 1**. Students will be notified of their status in the program prior to the end of fall semester.

1. Basic Entrance Exam results. Benchmark of **45**. Testing date/time to be announced.
2. Documentation of 20 hours of job shadow in Occupational Therapy or non-paid volunteer/community service.
3. Professional Development Assessment scores.
4. Departmental interview scores.
5. Additional admission points will be awarded for completion (with a "C" or higher)

of the following college level courses, as they appear on an official college transcript: BIOL 220/220L Anatomy and Physiology I, BIOL 221/221L Anatomy and Physiology II, PSYC 250 Developmental Psychology and PSYC 270 Abnormal Psychology.

6. Specific immunizations, criminal background checks, CPR certification (Basic Life Support (BLS) Provider by American Heart Association (AHA) **OR** Basic Life Support (BLS) for Healthcare Providers from American Red Cross (ARC) **ONLY**), health insurance, and First Aid Certification are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on fieldwork site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Selection process details, contact information and forms are in the Occupational Therapy Assistant Program Information and Selection Process Booklet available at www.NDSCS.edu/OTA (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

Program Selection Requirements are subject to revision. Please check the with the department or the programs website under Program Admission Requirements for current information.

Award

Upon successful completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science degree in Occupational Therapy Assistant.

Revised April 2022

Pharmacy Technician (Certificate)

Contact Information

Melissa Krava, department chair
Melissa.Krava@ndscs.edu
701-671-2114
Mayme Green Allied Health Center 213H

Delivery Methods

Face-to-Face: Wahpeton
Hybrid: Live-video and
Face-to-Face: Wahpeton

The Pharmacy Technician program is designed to prepare students for careers performing and managing the technical distributive functions in pharmacies and pharmacy-related industries. By doing so, pharmacy technicians allow the pharmacist to concentrate on clinical services such as patient consultation, physician intervention, drug therapy analysis, and other clinical topics. The pharmacy technician performs functions of pharmacy practice that do not require a pharmacist's professional education or judgment.

NDSCS offers two program options — a one-year (44 academic credits) Certificate and a two-year (68 credits) Associate in Applied Science degree. Both include eight weeks of internship in community and institutional practice settings, which occur after all classroom requirements have been completed.

This advanced level program is jointly accredited by the American Society of Health System Pharmacists (ASHP), 4500 East-West Highway, Suite 900, Bethesda, MD 20814, Phone 866-279-0681, and Accreditation Council for Pharmacy Education (ACPE), 135 S. LaSalle Street, Suite 4100, Chicago, IL 60603, Phone 312-664-3575.

Students receive classroom, laboratory and practical experience covering community and institutional practice, sterile product preparation, manufacturing, inventory management, record-keeping, medical terminology, and drug products. Students also take courses in communications, writing and psychology that will help provide them with the skills to advance in their careers. Upon completion of our program, the graduate will be eligible to become registered with the North Dakota Board of Pharmacy (which is required for employment) and are eligible for national certification.

Most pharmacies employ several technicians, and opportunities within the field are steadily increasing. Pharmacy technicians are found in community, hospital, and home health care pharmacies, as well as research institutions, manufacturers, and other industrial settings. Our graduates have enjoyed 100 percent job placement since our program's inception in 1994.

Completed application for a federal criminal background checks will be required prior to internships. A previous felony conviction, alcohol or drug related misdemeanor may affect internship placements. The applicant must visit with the department chair regarding this issue if it applies.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Admission Requirements*

1. High school graduate or G.E.D.
2. Be 18 years of age before completion of the program.
3. Complete the NDSCS admission process and submit an official high school transcript and all official college transcript(s) to Enrollment Services
4. Submit official ACT and/or placement testing results to Enrollment Services. Results must meet criteria to enroll in English 110 and ASC 93 Math or higher.
5. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.

Students will be allowed to take PRMT 101 and PRMT 111 prior to admittance.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Course Code	Course Title	Credits
PHRM 123	Pharmacology for Pharmacy Technicians I	2
PHRM 124	Pharmacology for Pharmacy Technicians II	2
PRMT 101	Orientation to Pharmacy Practice	1
*PRMT 102	Pharmaceutical Calculations	3
PRMT 111	Pharmacy Law and Ethics	1
PRMT 112	Pharmacy Records and Inventory Management	2
PRMT 216	IV and Sterile Product Preparation	1
PRMT 216L	IV and Sterile Product Preparation Lab	1
PRMT 217	Pharmacy Practice	3
PRMT 217L	Pharmacy Practice Lab	1
PRMT 221	Chemical/Physical Pharmacy	2
PRMT 221L	Chemical/Physical Pharmacy Lab	1
PRMT 231	Pharmacy Internship-Community Based	4
PRMT 241	Pharmacy Internship-Hospital Based	4

Related/General Education Courses:

BADM 234	Customer Service	1
BIOL 115	Concepts of Anatomy and Physiology	3
BOTE 171	Medical Terminology	4
ENGL 105	Technical Communications	3
FYE 101	Science of Success	1
HPER 210	CPR/First Aid (<i>Professional/Community</i>)	2
PSYC 100	Human Relations in Organizations	2

Total Required Credits **44**

(Eight of the credits for both programs are experiential hours normally completed during the summer semester.)

Courses with the prefix PHRM, PRMT, BIOL115, and BOTE 171 must be completed with a "C" or higher.

*PRMT 102 has a Math entrance requirement of a minimum ACT score of 19 or completion of ASC 092.

Associate in Applied Science degree is also available. Please see separate fact sheet for additional information.

NOTE: It is recommended for applicants to have taken algebra and chemistry while in high school.

For experiential hours, specific immunizations, criminal background checks, and health insurance, are required by the program. Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on experiential site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.

Selection process details, contact information and forms are located in the Pharmacy Technician Program Information and Selection Process Booklet available at www.ndscs.edu/Pharmacy-Tech (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

Award

Upon successful completion of the required courses, students will be awarded a certificate in Pharmacy Technician.

Revised May 2022



Pharmacy Technician

Pharmacy Technician (AAS Degree)

► Contact Information

Melissa Krava, department chair
Melissa.Krava@ndscs.edu
701-671-2114
Mayme Green Allied Health Center 213H

► Delivery Methods

Face-to-Face: Wahpeton
Hybrid: Live-video and
Face-to-Face: Wahpeton

The Pharmacy Technician program is designed to prepare students for careers performing and managing the technical distributive functions in pharmacies and pharmacy-related industries. By doing so, pharmacy technicians allow the pharmacist to concentrate on clinical services such as patient consultation, physician intervention, drug therapy analysis, and other clinical topics. The pharmacy technician performs functions of pharmacy practice that do not require a pharmacist's professional education or judgment.

NDSCS offers two program options — a one-year (44 academic credits) Certificate and a two-year (68 credits) Associate in Applied Science degree. Both of these include eight weeks of internship in community and institutional practice settings, which occur after all classroom requirements have been completed.

This advanced level program is jointly accredited by the American Society of Health System Pharmacists (ASHP), 4500 East-West Highway, Suite 900, Bethesda, MD 20814 Phone 866-279-0681, and Accreditation Council for Pharmacy Education (ACPE), 135 S. LaSalle Street, Suite 4100, Chicago, IL 60603, Phone 312-664-3575.

Students receive classroom, laboratory and practical experience covering community and institutional practice, sterile product preparation, manufacturing, inventory management, record-keeping, medical terminology, and drug products. Students also take courses in communications, writing, psychology and speech that will help provide them with the skills to advance in their careers. Upon completion of our program, the graduate will be eligible to become registered with the North Dakota Board of Pharmacy (which is required for employment) and are eligible for national certification.

Most pharmacies employ several technicians, and opportunities within the field are steadily increasing. Pharmacy technicians are found in community, hospital, and home health care pharmacies, as well as research institutions, manufacturers, and other industrial settings. Our graduates have enjoyed 100 percent job placement since our program's inception in 1994.

Completed application for the federal criminal background checks will be required prior to internships. A previous felony conviction, alcohol or drug related misdemeanor may affect internship placements. The applicant must visit with the department chair regarding this issue if it applies.

This program requires access to a personal laptop and printer, capable of completing the assignments/testing required by the program, with a current operating system and webcam/microphone. Tablets and Chromebooks are not compatible with online classes/testing.

Admission Requirements*

1. High school graduate or G.E.D.
2. Be 18 years of age before completion of the program.
3. Complete the NDSCS admission process and submit an official high school transcript and all official college transcript(s) to Enrollment Services.
4. Submit official ACT and/or placement testing results to Enrollment Services. Results must meet criteria to enroll in English 110 and ASC 93 Math or higher.
5. Applicants without a United States high school transcript (four years), will be required to complete English language proficiency exam(s) and meet the benchmark score(s) prior to continuing the selection process. Contact the program to schedule the assessments if this applies.

Students will be allowed to take PRMT 101 and PRMT 111 prior to admittance.

*Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Course Code	Course Title	Credits
PHRM 123	Pharmacology for Pharmacy Technicians I	2
PHRM 124	Pharmacology for Pharmacy Technicians II	2
PRMT 101	Orientation to Pharmacy Practice	1
*PRMT 102	Pharmaceutical Calculations	3
PRMT 111	Pharmacy Law and Ethics	1
PRMT 112	Pharmacy Records and Inventory Management	2
PRMT 216	IV and Sterile Product Preparation	1
PRMT 216L	IV and Sterile Product Preparation Lab	1
PRMT 217	Pharmacy Practice	3
PRMT 217L	Pharmacy Practice Lab	1
PRMT 221	Chemical/Physical Pharmacy	2
PRMT 221L	Chemical/Physical Pharmacy Lab	1
PRMT 231	Pharmacy Internship-Community Based	4
PRMT 241	Pharmacy Internship-Hospital Based	4

Related/General Education Courses:

BADM 234	Customer Service	1
BIOL 115	Concepts of Anatomy and Physiology	3
BIOL 213	General Pathology	3
BOTE 171	Medical Terminology	4
ENGL 110	College Composition I	3
ENGL/COMM	Elective (choose one):	3
COMM 110	Fundamentals of Public Speaking	
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
FYE 101	Science of Success	1
HPER 210	CPR and First Aid (<i>Professional/Community</i>)	2
PHIL 215	Contemporary Moral Issues	3
PSYC 111	Introduction to Psychology	3
General Education Electives		14

Total Required Credits **68**

(Eight of the credits for both programs are experiential hours normally completed during the summer semester.)

Courses with the prefix PHRM, PRMT, BIOL115, and BOTE 171 must be completed with a "C" or higher.

*PRMT 102 has a Math entrance requirement of a minimum ACT score of 19 or completion of ASC 092.

Certificate is also available. Please see separate fact sheet for additional information.

NOTE: It is recommended for applicants to have taken algebra and chemistry while in high school.

For *experiential hours*, specific immunizations, criminal background checks, and health insurance, are required by the program. *Additional requirements could include but not limited to; drug screening/ finger printing, state background checks, and COVID-19 vaccinations dependent on experiential site-specific student prerequisites. *All requirements must remain current while in the program and will be at the students' expense.*

Selection process details, contact information and forms are located in the Pharmacy Technician Program Information and Selection Process Booklet available at www.NDSCS.edu/Pharmacy-Tech (click on Program Selection Process) or contact the program at AlliedHealthCareers@ndscs.edu.

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Pharmacy Technician.

Revised: May 2022

Plumbing

Plumbing

► Contact Information

Tanner Oliphant, instructor
Tanner.Oliphant@ndscs.edu
701-671-2585
Mechanical Systems 111

► Delivery Methods

Face-to-Face: Wahpeton

The Plumbing program at NDSCS provides both lecture and lab opportunities for the student. While approximately 55% of the semester time is in lab, it is felt the remainder of the time (when they are immersed in theory, plumbing code and drafting/design classes) will benefit them in career advancement as well as increase their success on the Journeyman's exam which they will eventually take. The hands-on training in labs helps to prepare students for work in both the residential and commercial plumbing fields. The lab classes require students to learn to work with copper, plastic and PEX piping methods and also learn the proper procedures for installing fixtures. Along with good, safe plumbing practices, the lab courses also help to create good work habits and to further develop students' interpersonal skills.

The theory and design classes arm students with the knowledge of pipe sizing and proper placement of piping and fixtures within the structure. All aspects of installation and design are performed with the Uniform Plumbing Code as a reference. Code-specific classes each semester raise awareness and preparation for state licensure in the future. Upon successful completion of the NDSCS Plumbing program, up to 2,040 schooling hours may be credited by the ND State Plumbing Board, 1,750 hours by the Minnesota Plumbing Board and 1,900 by the South Dakota Plumbing Board toward their plumbing apprenticeship.

The program's transition to more commercial plumbing materials and practices will offer employers a more well-rounded employee in the future. During the print reading class, students will gain valuable experience in construction/project management utilizing Procore software and will receive a certification for their knowledge of that program. To enhance students' residential experience, the plumbing students will provide the plumbing services (piping and fixture installation) for the house which the Building Construction Technology students build on campus each year. For the more competitive students NDSCS offers the opportunity to compete at the college level in the ND Skills USA competition in the spring. Students also will write an industry competency exam at the end of the year to measure their learning against other students nation-wide. Lastly, all aspects of the plumbing instruction provide students with the knowledge of and exposure to up-to-date materials and practices which lead to more efficient uses of our natural "greener" resources within the plumbing industry.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate in Plumbing.

Course Code	Course Title	Credits
Certificate		
MSYS 103	Math for Mechanical Systems Technicians	3
MSYS 151	Drafting and Sketching	2
PLMB 101	Plumbing Theory and Code I	3
PLMB 102	Plumbing Theory and Code II	5
PLMB 105	Core Curriculum for Plumbers	2
PLMB 111	Plumbing Lab I	6
PLMB 112	Plumbing Lab II	6
PLMB 114	Residential Plumbing Application	1
PLMB 132	Plumbing Drawing, Sketching and Design	3

A student will earn a certificate in Plumbing after completing the above courses and the appropriate credits of general education courses as listed below. An Associate in Applied Science degree in Mechanical Systems may be earned by taking the additional classes listed from the HVAC/R Technology curriculum.

Related/General Education Courses

ENGL 105	Technical Communications	3
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	2
	Recommended:	
	• CIS 101 – Computer Literacy – 2 cr	
FYE 101	Science of Success	1

Total Required Credits **37**

A student will earn a certificate in Plumbing after completing all the above courses. An Associate in Applied Science degree in Mechanical Systems may be earned by taking the additional REFG (HVAC/R) courses listed under the Mechanical Systems AAS Degree.

Revised: May 2022



Powersports Technology

Powersports Technology

► Contact Information

Luke Kasowski, program coordinator
 Luke.Kasowski@ndscs.edu
 701-671-2544
 Schuett Hall 125

► Delivery Methods

Face-to-Face: Wahpeton

The Powersports Technology program prepares students for employment in the vast and broad recreational powersports equipment industry. This program provides learning experiences that enable the student to learn and advance on the job and grow with the occupational field. Students' abilities in communications, human relations and other aspects of general education will be enhanced.

Students are provided with classroom and hands-on laboratory experiences emphasizing diagnostic and repair skills development. Students develop skills and abilities necessary to test, diagnose, adjust and repair various systems on all types of recreational powersports equipment.

This practical education and technical training will allow graduates to work on outdoor power equipment, snowmobiles, motorcycles, ATVs, personal watercraft, outboard, and inboard marine equipment. Graduates may choose to be employed with motorcycle, ATV, snowmobile or marine dealerships, independent repair shops, recreational equipment manufacturers, hardware or rental stores, implement dealers or marinas. Positions such as a service technician, partsman or salesman will be readily available. Many graduates go into business for themselves or advance as service, parts or sales managers, shop foremen, factory representatives and vocational technical teachers.

Career opportunities for this skilled occupation will be plentiful in any geographical region for a competent and dependable graduate. Salaries will advance rapidly as experience and knowledge of the profession grow. Students interested in pursuing an advanced degree will find the Associate in Applied Science degree in Powersports Technology provides transfer options to four-year colleges and universities in related fields.

Employers are looking for trained powersports technicians who have a working knowledge of the latest technological advances in 2- and 4- stroke engines regarding emissions reduction. As the government increases regulation of the emissions produced by powersports engines, it becomes even more important that these workers have the most up-to-date pollution control training in this field.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	<u>NEXT GENERATION</u>
English – 15	Reading – 240
	Writing – 237

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit with the academic counselor at 701-671-2257 or the Powersports Technology program coordinator at 701-671-2544 for strategies to meet the admission requirements.

*Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.

Course Code	Course Title	Credits
MFGT 110	Industrial Shop Practices	2
PST 101	Outdoor Power Equipment Technology	5
PST 102	Snowmobile Technology I	5
PST 104	Motorcycle and ATV Technology I	5
PST 105	OPE and Snowmobile Fuel Systems	2
PST 110	Powersports Technology Internship I	6
PST 122	Fundamentals of Electricity	3
PST 201	Motorcycle and ATV Technology II	5
PST 202	Outboard Technology	5
PST 203	Stern Drive Technology	5
PST 205	Outboard Fuel Systems	2
PST 210	Powersports Technology Internship II	6

Related/General Education Courses

Diploma

FYE 101	Science of Success	1
ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
Wellness Elective (HPER 210 recommended)		1

Associate in Applied Science

FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
Wellness Electives (HPER 210 recommended)		2

Total Required Credits for Diploma 64

Total Required Credits for Associate in Applied Science 70

Award

Upon successful completion of the required courses, students will be awarded a diploma or an Associate in Applied Science degree in Powersports Technology.

Revised May 2022

Precision Machining Technology



Precision Machining Technology

Contact Information

Steve Johnson, department chair
Steve.Johnson@ndscs.edu
701-671-2478
Tech Center 29

Delivery Methods

Face-to-Face: Wahpeton

The Precision Machining Technology curriculum is designed to provide students experience in machining as it pertains to machining, toolmaking and mold making.

This program provides education and training in CNC programming, CNC set-up and operation, production machining, mold making, die making, toolmaking, automated manufacturing, human relations, communications and other aspects of general education.

Career opportunities offer a wide range of employment possibilities in the manufacturing, machining, toolmaking, mold making and production areas. Recent placement has been 98 percent.

NOTE: This program requires an EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. For further information, contact Steve Johnson, department chair, at 701-671-2478.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate, diploma, or Associate in Applied Science degree in Precision Machining Technology.

Course Code	Course Title	Credits
Certificate		
MATL 101	Machine Tool Theory I	4
MATL 102	Machine Tool Theory II	4
MATL 111	Machine Tool Lab I	7
MATL 112	Machine Tool Lab II	7
MFGT 137	Print Reading I	2
MFGT 141	Print Reading II	2
Diploma and Associate in Applied Science		
MATL 101	Machine Tool Theory I	4
MATL 102	Machine Tool Theory II	4
MATL 111	Machine Tool Lab I	7
MATL 112	Machine Tool Lab II	7
MATL 201	Toolmaking Theory I	3
MATL 202	Toolmaking Theory II	2
MATL 205	CNC Theory and CAD-CAM Operation	4
MATL 206	CNC and CAD-CAM Programming	3
MATL 213	Machinist Lab I	7
MATL 214	Machinist Lab II	7
MFGT 137	Print Reading I	2
MFGT 141	Print Reading II	2
Related/General Education Courses		
Certificate		
MATH 130	Technical Mathematics	2
MATH 136	Technical Trigonometry	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		2
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
FYE 101	Science of Success	1
Diploma		
ENGL 105	Technical Communications	3
or ENGL 110 College Composition I (3)		
MATH 130	Technical Mathematics	2
MATH 136	Technical Trigonometry	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
Wellness Elective		1
FYE 101	Science of Success	1
Associate in Applied Science		
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
Wellness Electives		2
FYE 101	Science of Success	1
Total Required Credits for Certificate		33
Total Required Credits for Diploma		65
Total Required Credits for Associate in Applied Science		71

Revised: May 2022

Robotics, Automation and Mechatronics Technology



RAMT-General Technician

► Contact Information

Lonnie Wurst, program coordinator
Lonnie.Wurst@ndscs.edu
701-671-2832
Barnard Hall 206

► Delivery Methods

Face-to-Face: Wahpeton

The Robotics, Automation and Mechatronics Technology (RAMT) program is designed to provide students with the knowledge, skills, and abilities necessary to succeed in industries utilizing robotics and automated systems.

This program combines disciplines such as electronics, networking, computers, mechanics, and fluid power utilized in manufacturing and production facilities.

Industries that hire RAMT graduates with the skill sets learned in this program include; manufacturing, pharmaceutical, food production, energy, defense, and agriculture.

A RAMT technician graduating from this program may work performing installations, troubleshooting, repairing, and programming for automated systems.

A Robotics, Automation and Mechatronics Technology student will experience a combination of lecture and lab classes with knowledgeable instructors, using hands-on real-world applications and scenarios which will prepare the student for a lifelong career.

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. For further information, contact Lonnie Wurst, program coordinator, at 701-671-2832.

Course Code	Course Title	Credits
ECAL 241	Basic Motor Controls Lab	3
MFGT 110	Industrial Shop Practices	2
RAMT 101	Applied DC Theory	4
RAMT 103	Applied AC Theory	4
RAMT 107	Mechanical Drives and Maintenance I	2
RAMT 109	Mechanical Drives and Maintenance II	2
RAMT 137	Print Reading, Drafting and Safety	2
RAMT 202	PLC's II	3
RAMT 203	Machine Safety and Panel Building	3
RAMT 208	Information Technology for Technicians	2
RAMT 221	Robotics II	3
RAMT 223	Solid State Systems Lab	4
RAMT 224	Robotics Systems I	3
RAMT 225	Digital and Pneumatic Systems	2
RAMT 240	Principles of Project Management	2
RAMT 243	PLC's I	3
RAMT 244	System Integration and Troubleshooting	2
RAMT 246	Quality Assurance Standards and Methods	3
RAMT 250	Drives and Servo Systems	2
RAMT 297	Cooperative Education	2

Related/General Education Courses

CIS 101	Computer Literacy	2
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
Wellness Electives		2
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
PSYC 100	Human Relations in Organizations	2

Total Required Credits

72

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Robotics, Automation and Mechatronics Technology.

Revised: May 2022

RAMT-Mechatronics Engineering Technology

► Contact Information

Lonnie Wurst, program coordinator
Lonnie.Wurst@ndscs.edu
701-671-2832
Barnard Hall 206

► Delivery Methods

Face-to-Face: Wahpeton

The Mechatronics Engineering Technology (MET) program is designed to provide students with the knowledge, skills and abilities necessary to succeed in industries utilizing robotics and automated systems while preparing them for transfer into four-year engineering and/or engineering technology programs.

The program combines disciplines such as robotics, computer networking, automated controls, mechanics, and fluid power utilized in manufacturing and production facilities.

Industries that hire MET graduates with the skill sets learned in this program include; manufacturing, pharmaceutical, food production, energy, defense, and agriculture.

A MET program graduate may work performing installations, troubleshooting, repairing, and programming for automated systems, or may fulfill the roles of an entry-level engineering technician.

A Mechatronics Engineering Technology student will experience a combination of lecture and lab classes with knowledgeable instructors, using hands-on real-world applications and scenarios which will prepare the student for a lifelong career while preparing for follow-on education of four-year institution, if desired.

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065.00 if purchased through NDSCS. For further information, contact Lonnie Wurst, program coordinator, at 701-671-2832.

Course Code	Course Title	Credits
ECAL 241	Basic Motor Controls Lab	3
MFGT 107	Introduction to CNC	2
MFGT 110	Industrial Shop Practices	2
RAMT 101	Applied DC Theory	4
RAMT 103	Applied AC Theory	4
RAMT 109	Mechanical Drives and Maintenance II	2
RAMT 120	3D Modeling and Design	3
RAMT 202	PLC's II	3
RAMT 203	Machine Safety and Panel Building	3
RAMT 208	Information Technology for Technicians	2
RAMT 221	Robotics II	3
RAMT 224	Robotics Systems I	3
RAMT 225	Digital and Pneumatic Systems	2
RAMT 240	Principles of Project Management	2
RAMT 243	PLC's I	3
RAMT 244	System Integration and Troubleshooting	2
RAMT 246	Quality Assurance Standards and Methods	3
RAMT 250	Drives and Servo Systems	2
RAMT 297	Cooperative Education	2

Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
Wellness Electives		2
MATH 103	College Algebra	3
MATH 105	Trigonometry	2
PHYS 211	College Physics	3
PHYS 211L	College Physics I Lab	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		

Total Required Credits **72**

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Robotics, Automation and Mechatronics Technology – Mechatronics Engineering Technology.

Revised: May 2022



Technical Studies

Technical Studies

► Contact Information

Academic Counselor
NDSCS-Wahpeton
701-671-2257

Academic Counselor
NDSCS-Fargo
701-231-6940

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: Some classes
Combination

This custom-designed program allows individuals to combine elements of various disciplines in a meaningful and logical sequence that meets their career goals. The Technical Studies program addresses a recognized need for business and industry to attract highly trained workers with a variety of skills and to retain current workers. Individuals may pursue this program of study for career advancement or increase in job responsibility or salary. Students work with an advisor to identify career goals and plan a program of study.

For example, a Technical Studies program may be appropriate if a student wanted to combine certain elements of a Business Management curriculum with parts of an Information and Communications Technology program. Another illustration of a Technical Studies program might include a program of study that consists of parts of Electrical Technology, HVAC/R Technology and Plumbing.

Green technology could be a large part of a student's customized program. In today's market that includes "smart" buildings, sustainable building materials, alternative fuels and changing technology, students may choose to customize plans that help them gain entry into a variety of new and emerging fields.

Students enrolled in this program may earn Credit for Prior Learning for previous occupational experience.

Students may choose to build a program that will allow them to earn a certificate, a diploma, or an associate degree. The objective of the individual, the occupational experience, and the needs of the work place will be considered in selecting courses.

For more information, contact the academic counselor at 1-800-342-4325, ext. 3-2257 or NDSCS-Fargo at 701-231-6901, ext. 1-6940.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate, diploma or an Associate in Applied Science degree in Technical Studies.

Course Code	Course Title	Credits
Certificate		
Technical credits*		19
General Education Electives in at least two disciplines		5
FYE 101	Science of Success	1
Diploma		
Technical credits*		38
English/Communication Elective		3
Mathematics and/or Science Elective		3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
General Education Elective		1
Wellness Elective		1
FYE 101	Science of Success	1
Associate in Applied Science		
Technical credits*		46
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Mathematics and/or Science Electives		3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
General Education Electives		3
Wellness Electives		2
FYE 101	Science of Success	1
Total Required Credits for Certificate		25
Total Required Credits for Diploma		51
Total Required Credits for Associate in Applied Science		65

* Technical credits may be earned by a combination of college courses and/or Work-Based Learning Experiences.

Work-Based Learning Experience (internship, affiliation, directed practice, cooperative education, practicum or supervised occupational experience) is a structured experience, which allows the student to learn on the job while under the direction and supervision of the designated college department. Usually earned after matriculation in a custom-designed program.

Credit for Prior Learning refers to learning that occurs before a student enrolls at NDSCS and may be applied to technical courses or work-based learning credits in the Technical Studies curriculum. It may be academic credit awarded for learning that does not occur in the classroom. The award of this type of credit must be based on college-level learning, not simply experiences or time elapsed. A key consideration in awarding Credit for Prior Learning in this form of learning must be described, demonstrated and documented before it can be awarded.

Revised May 2022

Journeyworker Track

► Contact Information

Academic Counselor
NDSCS-Wahpeton
701-671-2257

Academic Counselor
NDSCS-Fargo
701-231-6940

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Online: All classes
Combination

The Technical Studies – Journeyworker Track program is designed to allow advanced standing to individuals who have completed a USDOL or federally approved apprenticeship training program of at least 6,000 hours (including a minimum of 400 related study hours). It is a flexible program providing students the opportunity to earn an Associate in Applied Science degree by combining their previous apprenticeship training with college credit course work. Students will work with an advisor to design their own plan of study based on their personal career goals. The completion of this program will help students develop the skills and abilities needed for advancement in their current profession.

Green technology could be a large part of a student's customized program. In today's market that includes "smart" buildings, sustainable building materials, alternative fuels and changing technology, students may choose to customize plans that help them gain entry into a variety of new and emerging fields.

Individuals who are currently employed and are not able to relocate will find many of their courses are available in an online format or offered by NDSCS at a distant site. Availability of classes is limited by the student's own plan of study.

For more information, contact the academic counselor at 1-800-342-4325, ext. 3-2257 or NDSCS–Fargo at 701-231-6901, ext. 1-6940.

Students who wish to continue their education will find there are transfer options to four-year colleges and universities. For more information, see the academic counselor.

Admission Requirements*

The applicants must be high school graduates or equivalent. To receive advanced standing, they must provide official documentation of a completed USDOL or federally approved apprenticeship training program of at least 6000 hours (including a minimum of 400 related study hours). Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Technical Studies.

Course Code	Course Title	Credits
Journey-Level Certificate		
PLA 202	Prior Learning Assessment	12
PLA 202	Prior Learning Assessment	10
PLA 202	Prior Learning Assessment	10

General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Mathematics and/or Science Electives		3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations in Organizations – 2 cr		
General Education Electives		3
Wellness Electives		2
Technical, Business and/or General Education Electives*		14

Total Required Credits **64**

* - Individuals who have completed an approved apprenticeship program exceeding 400-hours of related studies may be granted up to 5 additional credits. (Calculated at one credit per 36-hours of instruction.) These credits will count toward the required technical, business and/or general education course credits.

- Consult academic advisor in selecting electives that are most appropriate. An academic plan must be developed and be placed on file in the Records office.

- Internships and cooperative education credits will not be accepted in lieu of the technical, business and/or general education course credits.

PLA 202 credits will be transcribed after the successful completion of one NDSCS course.

Individuals seeking this degree will need to meet the NDSCS graduation requirement stating: At least 16 of the final 24 credits of the curriculum must be taken through NDSCS.

Revised May 2022



Unmanned Aircraft Systems

Unmanned Aircraft Systems (Certificate)

► Contact Information

Seth Simonson, associate professor
Seth.Simonson@ndscs.edu
701-671-2345
Horton Hall 235

► Delivery Methods

Face-to-Face: Wahpeton

The Unmanned Aircraft Systems (UAS) certificate program is designed to provide a broad understanding of the use of UAS in a commercial environment to include, but not limited to: Unmanned aircraft types, various purposes for different UAS types, legal guidelines for operating UAS in a commercial environment, peripheral systems for operating UAS, preflight planning, piloting UAS, data collection with UAS, data processing, and data analysis.

Students from a wide variety of majors will have the opportunity to earn a certificate by taking specialized courses specific for UAS. The courses required for the UAS certificate will enhance the students' knowledge and skill set regarding UAS and make them more marketable when entering the workforce.

This certificate program is structured to be taken in conjunction with another NDSCS academic program option.

NOTE: This program requires a ZBOOK 15 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$2100.00 if purchased through NDSCS. For further information, contact Randy Stach, department chair, at 701-671-2116.

Course Code	Course Title	Credits
UAS 111	Introduction to UAS	2
UAS 112	Unmanned Aircraft Systems Certification	2
UAS 121	UAS Advanced Data Collection	2
UAS 122	UAS Photography and Videography	2
UAS 132	Advanced UAS Flight	2

Related/General Education Courses

General Education Elective		3
Recommended:		
*COMM 110	Fundamentals of Public Speaking (3) OR	
*CSCI 116	Business Use of Computers (3)	
Free Elective		3
FYE 101	Science of Success	1

Total Required Credits for UAS Certificate: 17

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate in Unmanned Aircraft Systems (UAS).

Revised: May 2022

Welding Technology

Welding Technology Certificate

► Contact Information

Clint Gilbertson
program coordinator – NDSCS Wahpeton
Clinton.Gilbertson@ndscs.edu
701-671-2329
Trade Tech II – 158

Mitchell Van Vleet
program lead – NDSCS-Fargo
Mitchell.Vanvleet@ndscs.edu
701-231-6902
NDSCS-Fargo 145

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Combination

Course Code	Course Title	Credits
Certificate		
MFGT 101	Robotics I	2
MFGT 110	Industrial Shop Practices <u>OR</u>	
MFGT 135	Basic Metallurgy	2
MFGT 123	Fabrication Methods I	2
MFGT 137	Print Reading I	2
WELD 151	Welding Theory I	3
WELD 152	Welding Theory II	3
WELD 153	Welding Lab I	5
WELD 154	Welding Lab II	5

Related/General Education Courses Certificate

MATH 130	Technical Mathematics	2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4

Total Required Credits for Certificate **31**

The Welding Technology curriculum is designed to provide students experience in welding as it pertains to assembly, manufacturing, energy and construction.

This program provides education and training in welding and cutting processes, robotics, print reading, metallurgy, and other aspects of general education.

Career opportunities offer a wide range of entry level employment possibilities in the manufacturing, steel construction, mining, energy and other areas of the welding industry.

The NDSCS Welding program is an American Welding Society SENSE certified facility. AWS Level I certification is available in the certificate program.

The NDSCS Welding program is an educational partner with Weld-Ed, the National Center for Welding Education and Training.

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065 if purchased through NDSCS. For further information, contact Clint Gilbertson, NDSCS Wahpeton Welding program coordinator at 701-671-2832 or Mitchell Van Vleet, NDSCS-Fargo program lead at 701-231-6902.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information.*

Award

Upon successful completion of the required courses, students will be awarded a certificate in Welding Technology.

Revised: May 2022



Welding Technology

Welding Technology Diploma or Associate Degree

► Contact Information

Clint Gilbertson
program coordinator – NDSCS Wahpeton
Clinton.Gilbertson@ndscs.edu
701-671-2329
Trade Tech II – 158

Mitchell Van Vleet
program lead – NDSCS-Fargo
Mitchell.Vanvleet@ndscs.edu
701-231-6902
NDSCS-Fargo 145

► Delivery Methods

Face-to-Face: Wahpeton
Face-to-Face: Fargo
Combination

The Welding Technology curriculum is designed to provide students advanced experience in welding as it pertains to assembly, manufacturing, energy, and construction.

This program provides education and training in advanced welding and cutting processes, robotics, computer numerical control operations, inspection, print reading, fabrication, pipe and plate welding, math, communications, and other aspects of general education.

Career opportunities as a Welding technician offer a wide range of employment possibilities in the manufacturing, steel construction, mining, energy, and welding inspection. A diploma or Associate in Applied Science degree will provide higher level employment opportunities in the welding industry.

The NDSCS Welding program is an American Welding Society SENSE certified facility. AWS Level I and Level II certification is available.

The NDSCS Welding program is an educational partner with Weld-Ed, the National Center for Welding Education and Training.

NOTE: This program requires an HP EliteBook 850 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately \$1065 if purchased through NDSCS. For further information, contact Clint Gilbertson, NDSCS Wahpeton Welding program coordinator at 701-671-2832 or Mitchell Van Vleet, NDSCS-Fargo program lead at 701-231-6902.

Admission Requirements*

The applicants must be high school graduates or equivalent. Students considered for acceptance must complete all admission requirements.

Please Note: Students are placed into English, math and reading courses based on ACT, ACCUPLACER or other nationally recognized tests. Please see www.ndscs.edu/current-students/student-success/test-center for the NDSCS Course Placement Policy and testing information. Students may be on an extended plan of study pending their course placement.

Additional Admission Requirements

The Diploma and Associate in Applied Science Degree 2nd year option in Welding Technology is a limited enrollment program. Applicants will be selected on a point system. The following criteria are used to rank students for selection.

1. Completion of the Welding certificate program or substantial progress toward completion of the certificate program.
2. Cumulative NDSCS GPA from fall semester plus midterm assessment of the spring semester in the certificate program.
3. Successful completion of all certificate program core welding and manufacturing courses with a "C" or higher.

Course Code	Course Title	Credits
Diploma and Associate in Applied Science		
MFGT 101	Robotics I	2
MFGT 110	Industrial Shop Practices OR	
MFGT 135	Basic Metallurgy	2
MFGT 123	Fabrication Methods I	2
MFGT 137	Print Reading I	2
MFGT 140	Fabrication Methods II	2
MFGT 141	Print Reading II	2
WELD 151	Welding Theory I	3
WELD 152	Welding Theory II	3
WELD 153	Welding Lab I	5
WELD 154	Welding Lab II	5
WELD 201	Welding Theory III	4
WELD 202	Welding Theory IV	4
WELD 211	Welding Lab III	7
WELD 212	Welding Lab IV	7

Related/General Education Courses

Diploma

ENGL 105	Technical Communications	3
	or ENGL 110 College Composition I (3)	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
	Wellness Elective	1
FYE 101	Science of Success	1

Associate in Applied Science

ENGL 110	College Composition I	3
	English/Communication Elective (choose one)	3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
	Wellness Electives	2
FYE 101	Science of Success	1

Total Required Credits for Diploma 63

Total Required Credits for Associate in Applied Science 69

**Program Admission Requirements are subject to revision. Please check the department or program website under Program Admission Requirements for current information*

Award

Upon successful completion of the required courses, students will be awarded a diploma or Associate in Applied Science degree in Welding Technology.

Revised: May 2022

COURSE DESCRIPTIONS

(ABOD) AUTO BODY REPAIR AND REFINISHING TECHNOLOGY

- ABOD 101 Basic Auto Body Repair Techniques Lab (4 credits)**
This is a laboratory course covering the basic fundamentals of auto body repair. Emphasis is placed on learning the basic repair methods stressing quality of repair. Laboratory tasks are performed on donated salvage vehicles. Tasks are assigned according to the NATEF task list. (F)
- ABOD 102 Basic Auto Body Production Lab I (4)**
ABOD 102 applies basic procedures learned in ABOD 101 to production-type vehicles. Using NATEF task lists, the student will take vehicle from damaged state through the initial priming stage. Prerequisite: ABOD 101 and ABOD 113. (F)
- ABOD 103 Basic Auto Body Production Lab II (4)**
This is a continuation of ABOD 102. The procedures learned in ABOD 101, 102, 103, 113, 115, 116 and 120 will be applied to production vehicles. The student will take a vehicle from primer to refinish and perform final detailing to produce a satisfied customer. Prerequisites: ABOD 102 and ABOD 115. (S)
- ABOD 104 Basic Auto Body Production Lab III (4)**
This is a continuation of ABOD 103. The procedures learned in ABOD 101, 102, 103, 113, 115, 116 and 120 will be applied to production vehicles. The students will take a vehicle from primer to refinish and perform final detailing to produce a satisfied customer. Prerequisites: ABOD 103 and ABOD 116. (S)
- ABOD 113 Basic Auto Body Repair Techniques I (2)**
This is a lecture and demonstration course covering the basic fundamentals of auto body repair. Emphasis is placed on learning the basic repair methods, stressing the quality of the repair. (F)
- ABOD 115 Basic Auto Body Repair Techniques II (2)**
This is a lecture and demonstration course covering the basic fundamentals of auto body repair. Emphasis is placed on learning the basic repair methods, stressing the quality of the repair. Prerequisites: ABOD 101 and ABOD 113. (F)
- ABOD 116 Refinishing Equipment/Plastic Repair (2)**
This is a lecture course covering the basic equipment of auto body repair and plastic repair. Emphasis is placed on learning the basic uses and maintenance of the repair equipment. Tasks are assigned according to the NATEF task list. Prerequisites: ABOD 102 and ABOD 115. (S)
- ABOD 117 Refinishing Materials (2)**
This is a lecture course covering the materials used in auto body repair. Emphasis is placed on learning the refinish materials used in auto body repair and the application methods safely. Tasks are assigned according to the NATEF task list. Prerequisites: ABOD 103 and ABOD 116. (S)
- ABOD 200 Mechanical/Electrical Components (3)**
This course is a practical introduction to electrical and electronic systems, brake systems, air conditioning systems, cooling systems, drive train, fuel, intake and exhaust systems, and restraint systems. Major emphasis is the utilization of lecture, discussion and demonstrations to the production lab on customer production projects. Prerequisites: All ABOD 100-level courses. (F)
- ABOD 201 Steering, Suspension and Wheel Alignment (2)**
This theory/lab course covers the tasks necessary to diagnose, repair and replace various steering, suspension and wheel alignment related components. It also involves the understanding and usage of various types of equipment used to perform these tasks. Prerequisites: All ABOD 100-level courses. (F)
- ABOD 202 Structural Repair Equipment (2)**
This theory/lab course covers the setup and usage of equipment used to measure, anchor and repair full frame, unibody and structural parts on today's vehicles. Prerequisites: All ABOD 100-level courses. (F)
- ABOD 203 Advanced Damage Analysis Lab I (8)**
This lab course will provide the student practical application in advanced repair methods. This will include frame, body, suspension, glass, refinishing, and related procedures. Prerequisites: ABOD 100 level courses. (F)

ABOD 204 Structural Repair Techniques (2)

This theory/lab course covers tasks necessary to repair and replace frame, unibody and structural parts on today's vehicles. Various types of frame repair equipment will be used in this course. Prerequisites: ABOD 201, ABOD 202, and ABOD 203. (S)

ABOD 205 Estimating and Job Costing (2)

This theory/lab course covers common practices used when estimating vehicles that have been involved in a collision to get an accurate repair cost and job costing each vehicle to show a profit or loss. Prerequisites: ABOD 201, ABOD 202, and ABOD 203. (S)

ABOD 206 Advanced Damage Analysis Lab II (8)

This lab course will continue to provide the student practical application in advanced repair methods. This will include frame, body, suspension, glass, refinishing, and related procedures. Prerequisites: ABOD 201, ABOD 202, ABOD 203. (S)

ABOD X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

ABOD 297 Cooperative Education (1-5)

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

ABOD 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(ACCT) ACCOUNTING**ACCT 102 Fundamentals of Accounting (3 credits)**

This course is designed for non-accounting majors. Coverage includes elements of the financial statements and the full accounting cycle. (F/F-Online)

ACCT 118 Applied Accounting (3)

This course is designed for non-accounting majors and has a special emphasis on the applications of accounting software. The course introduces students to the accounting cycle, basic accounting policies and procedures, and exposes students to accounting software applications. QuickBooks Pro is used to give students direct experience with setting up and working with accounting software. (S/S-Online)

ACCT 200 Elements of Accounting I (4)

This course is a study of financial accounting concepts. Topics include the reporting of current and fixed assets, current liabilities, income and expense recognition, and the financial statements. (F/F-Online)

ACCT 201 Elements of Accounting II (4)

The emphasis of this course is on managerial and financial accounting issues. Topics include the reporting of long-term liabilities and investments; the accounting for corporations, partnerships and LLCs; the statement of cash flows; and the use of accounting information for analysis and decision making. Prerequisite: ACCT 200. (S/S-Online)

ACCT 215 Business in the Legal Environment (3)

This course is an overview of the legal environment of business and governmental regulation. Specific topics within civil and criminal law units include: contracts, torts, ethics, attorney-client privilege, misdemeanors, felonies, property, estate planning, strict liability, and alternative dispute resolution. (F/F-Online)

ACCT X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

ACCT 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(AGEC) AG ECONOMICS

- AGEC 141 Introduction to Agribusiness Management (1 credit)**
This is an introductory course dealing with the economic importance of the agribusiness community and the potential for employment with the agribusiness industry. (F, S)
- AGEC 142 Agribusiness Internship Orientation I (1)**
A combination of individual and group meetings designed to develop knowledge and skills pertinent to agricultural industries. This course prepares a student for an internship in agriculture. Topics covered include career exploration, self-evaluation, employment skills development, and job acquisition correspondences (F)
- AGEC 143 Agribusiness Internship Orientation II (1)**
A combination of individual and group meetings designed to develop knowledge and skills pertinent to agricultural industries. This course prepares a student for an internship in agriculture. Topics covered include goal setting, career skill inventory, and interpersonal relationship development. (S)
- AGEC 145 Farm Records (3)**
This is a basic course in farm balance sheets, accounts, inventories, enterprise and production records, and various other financial records. The course also includes, but is not limited to, crop and feed check, monthly inventory, and family living expenses. The course will cover paper-based as well as computerized farm recordkeeping systems. (S)
- AGEC 197 Farm and Ranch Management Internship (1-9)**
This course will begin the student's knowledge of the recordkeeping process. The student will be responsible for completing a set of records for their family farm or a practice farm as directed by the instructor. The student will also begin a FINPACK analysis by completing a beginning balance sheet for their family farm or for a practice farm. (S, Su)
- AGEC 231 Professional Selling Skills (3)**
AGEC 231 explores some of the human elements of agribusiness. It is designed for students studying agriculture who plan a professional career in agribusiness. The course is also highly practical for students outside of agriculture who are interested in pursuing a career in professional selling. It recognizes the wide diversity of backgrounds; interest areas and problems young professionals are likely to face as they begin their careers. The approach taken in this class is highly pragmatic and attempts to give the student more than a glimpse of a wide array of concepts of human behavior and professional selling techniques. (S)
- AGEC 242 Introduction to Agricultural Management (4)**
Farm or agribusiness management concepts, measuring management performance, developing and improving management skills such as managing risk, managing income taxes, farm business analysis, controlling and using land, human resource management, and machinery management. (F, S)
- AGEC 244 Introduction to Agricultural Marketing (3)**
A study of the agricultural marketing system to include cash marketing, commodity futures trading, branded products merchandising and the interrelationship of the government and international trade. (F)
- AGEC 245 Commodity Market Analysis (3)**
Addresses advanced commodity market concepts and tools. Includes the study and application of fundamental and technical analysis of the grain and livestock markets. Prerequisite: AGEC 244 (S)
- AGEC 246 Introduction to Agricultural Finance (3)**
Introduction to agricultural finance provides background in farm and agribusiness credit use and evaluation. Discussion of specific financial conditions on farms and in agribusiness. (S)
- AGEC 247 Agricultural Land Resource Acquisition (2)**
The study and application of management and financial considerations involved with renting and purchasing farmland. (F)
- AGEC 248 Introduction to Risk Management and Insurance (3)**
This course presents principles of loss control, insurance, and financial risk management, as they apply to current farm operations. Basic concepts of financial risk management, crop insurance, property, liability, and disability insurance, life and health insurance, and functional and financial operations of insurers will be examined. Primary emphasis is placed on applying risk management principles to farm operations in order to manage risk exposure and improve financial security and profitability. (S)

- AGEC 250 **Agribusiness Sales (3)****
The principles of salesmanship applied to the agricultural business. Topics include attitudes and value systems, basic behavioral patterns, relationship of sales to marketing, selling strategies, preparing for sales calls, making sales presentations, and closing sales. (S)
- AGEC 297 **Farm and Ranch Management Internship (1-9)****
In this course the student will gather data in order to complete a set of annual farm accounting records and learn to complete a whole farm and enterprise analysis of those records. The student will be responsible for completing a farm analysis for their family farm or a practice farm as directed by the instructor. (F, S)
- AGEC X92 **Experimental Course (1-9)****
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
See also Agriculture (AGRI), Animal Science (ANSC), Plant Science (PLSC) and Soil Science (SOIL)

(AGRI/PAG) AGRICULTURE

- AGRI 110 **Rural Safety (2 credits)****
Agriculture is one of the most hazardous industries in the nation. Farming is one of the few industries in which the families (who often share the work and live on the premises) are also at risk for fatal and nonfatal injuries. This class is designed to address the many safety concerns and issues that face modern farm workers and their families. (F)
- AGRI 135 **Applied Math (2)****
This course will include a review of mathematics including fractions, decimals, percentages and basic algebra. The course will emphasize problem-solving in agriculture applications using spreadsheet software. (F, S)
- AGRI 191 **First Year Seminar (1)****
This course is designed as a forum for presentations on a variety of agriculture topics and to strengthen communication skills including the use of professional speaking skills, demonstrating professional etiquette, and challenging critical thinking skills through questioning presenters. (S)
- AGRI 241 **Farm Management Education (1-6)****
Farm Management Education is designed as a practical study of the farming business for farm families currently engaged in managing their farms or ranches.
- AGRI 242 **Advanced Farm Management Education (1-4)****
This course continues the application of farm management principles for decision-making. Prerequisite: AGRI 241 or department approval.
- AGRI 291 **Second Year Seminar (1)****
This course will hone your abilities to present current agricultural topics in a professional manner to a large group of your peers. Furthermore, you will practice your professional etiquette during presentations, challenge your critical thinking skills through questioning presenters and increase your knowledge of current agricultural topics. (S)
- AGRI X92 **Experimental Course (1-9)****
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- AGRI 197/297 **Internship (Agriculture Department) (1-9)****
Provides opportunities to explore career interests and develop professional skills through work experiences. Under supervision of the employer and the instructor while receiving credit. May be repeated. (F, S, Su)
- AGRI 299 **Special Topics (1-9)****
A course designed to meet special departmental needs.
- PAG 275 **Introduction to Precision Agriculture (3)****
This course is designed to introduce the student to precision production agriculture. Students will receive hands-on experience using hand-held global positioning systems and a vehicle equipped with a differentially corrected global positioning system. Students will use software that collects, analyzes and creates maps which can be used in agronomic decision-making. (F)

- PAG 276 Data Collection and Management (3)**
This course will experiment with types and methods of data collection of spatial data. The majority of the course will concentrate on data logging using GPS receivers (various monitors, rugged handheld units, and iPads), utilizing mobile software and geospatial apps. The course also will include downloading data from the Internet and evaluation and purchase of data from commercial sources. Students will learn data collection processes based on a real-world project. They will be responsible for identifying a study area, a question or management issue, and the data needed to answer the questions. Prerequisites: AGRI 275. (F)
- PAG 285 Precision Agriculture Software Systems (3)**
This course introduces various precision farming software in real-world applications. Discussion of how Geographic Information Systems (GIS) can be used to input and store data, assist in the analysis of data and create interpretive maps. It focuses on initial setup of software, data management and evaluation, saving and unloading data cards, processing field data, and compiling prescription application maps. Prerequisite: AGRI 275. (S)
- PAG 286 Advanced Mapping (3)**
This course covers the use of spatial data for recordkeeping, analytical decision making and modeling prescription maps for variable rate applications. Student will use various data sets and apply GIS functions to answer management questions. A major component of this course will be determining relationships and establishing patterns in yield and other cropping factors and interpretation of these patterns and relationships. Prerequisite: AGRI 285. (S)
- See also Ag Economics (AGEC), Animal Science (ANSC), Plant Science (PLSC) and Soil Science (SOIL)*

(ANSC) ANIMAL SCIENCE

- ANSC 114 Introduction to Animal Sciences (3 credits)**
General principles of the livestock industry and relationship to mankind. (F)
- ANSC 116 Animal Reproduction (3)**
This course will investigate the anatomy, physiology and endocrinology of animal reproduction and the techniques for the control and manipulation of reproductive processes. (S-alternating)
- ANSC 118 Livestock Health Management (3)**
This introduction to infectious diseases affecting livestock provides students with an introduction to infectious diseases and details the animal husbandry practices influencing the host-pathogen interactions. (S-alternating)
- ANSC 123 Feeds and Feeding (3)**
Principles of feeding livestock including digestive systems, nutrient requirements, nutrient characteristics and sources utilized in the formulation of balanced rations. (F-alternating)
- ANSC 220 Livestock Production (3)**
Livestock production is intended to cover the general production and management of livestock species in North Dakota. Emphasis will be placed on beef, dairy, swine and sheep. Specific topics will include: production systems, genetics and breeding systems, herd health, nutrition, reproduction and waste management. (F-alternating)
- ANSC 224 Applied Livestock Feeding (3)**
Applied livestock feeding will discuss practical diets and feeding for beef, dairy, swine and sheep. An emphasis will be placed on nutritional needs of ruminants in the upper Midwest and utilizing common co-products available in the region. (F-alternating)
- ANSC 231 Livestock Evaluation (2)**
The study of evaluating breeding and market livestock based on records, appearance, and soundness. (F-alternating)
- ANSC 241 Survey of Meat Science (2)**
This class is taught in collaboration with North Dakota State University at the NDSU meat processing lab. Introduction to aspects of fresh and processed meat technology. Corequisites: ANSC 234, ANSC 244, and ANSC 245.
- ANSC 243 Slaughter and Processing of Domestic Livestock (4)**
This class is taught in collaboration with North Dakota State University at the NDSU meat processing lab. This course will teach the principles and procedures of meat animal humane slaughter, carcass fabrication, and meat processing. You will be required to help in all processes of slaughter, fabricating, processing, and cleaning. Corequisites: ANSC 241, ANSC 244, and ANSC 245.

ANSC 244 Value-added Meats Processing (2)

This class is taught in collaboration with North Dakota State University at the NDSU meat processing lab. An investigation of factors involved in the production of processed and value-added meat products by hands-on training and classroom instruction. Corequisites: ANSC 241, ANSC 243, and ANSC 245.

ANSC 245 Hazard Analysis and Critical Control Points (HACCP) (2)

This class is taught in collaboration with North Dakota State University at the NDSU meat processing lab. Students will become familiar with hazard analysis, critical control point, and food safety plans, including good manufacturing practices and standard operating procedures for safe food production. Corequisites: ANSC 241, ANSC 243, and ANSC 244.

ANSC 236 Introduction to Range Management (2)

Principles of range management which include plant identification, range evaluation and range improvement. (S-alternating)

ANSC 252 Large Ruminant Production (3)

Large ruminant production will explore common production practices of beef and dairy in the upper Midwest. A focus of the class will be making production decisions based on profitability and efficiency. (S-alternating)

ANSC 260 Introduction to Equine Studies (3)

A review of evolution, historical roles of the horse, breeds, and the modern-day equine industry. Introduction to anatomy, physiology, selection, nutrition, health care, and stable design/management. A lab component will accompany this course. (F)

ANSC X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

See also Ag Economics (AGEC), Agriculture (AGRI), Plant Science (PLSC) and Soil Science (SOIL)

(ARCT) ARCHITECTURAL MODELING & DESIGN TECHNOLOGY**ARCT 101 Architectural Modeling I (3 credits)**

This course is a beginning Architectural Drafting course and will cover basic AutoCAD drafting skills as applied to residential drafting concepts. These concepts include sketching, interior planning, exterior style, blueprint reading, and code interpretation. The students will learn the step-by-step process for designing and laying out a set of working drawings for a residential home. Prerequisite: ARCT 120 or CAD 120. (F)

ARCT 102 Architectural Modeling II (4)

This course is a continuation of residential design and drafting. Students will draw a complete set of working drawings for a two-story house. Stair sections, framing plans, truss types, and a study of kitchen layouts and elevations are included. Students will use both AutoCAD and Revit software throughout this course. Prerequisite: ARCT 101. (S)

ARCT 110 Graphic Communications (3)

This course is an introduction to print reading, sketching, and manual drafting. The course will cover the proper use of tools and equipment, freehand lettering techniques, technical drafting skills, sketching, orthographic projection, and isometric drawing in addition to a basic understanding of residential print reading. (F)

ARCT 120 AutoCAD for Architecture (2)

This course is an introduction to the operation and application of computer-aided drafting utilizing the latest AutoCAD software as it relates to residential drafting. Drawing and editing commands are studied and utilized in final projects. (F)

ARCT 121 Revit Architecture (2)

This course is an introduction to Building Information Modeling (BIM). We will specifically be using the latest version of the Autodesk Revit software. Students will use the Revit software to create a virtual working model of a commercial project. (S, O)

ARCT 122 Structural Modeling (2)

Structural modeling is an introduction to modeling the structural system in Autodesk Revit. Various structural systems will be explored and modeled. The student will model and annotate the structural system for a high-rise, steel-frame building and complete other various projects. Prerequisite: ARCT 121. (S)

- ARCT 131 Construction Methods and Materials I (3)**
This course is an introduction to the methods, terminology, and materials associated with building construction. Students will be introduced to a wide variety of construction methods and materials. (F)
- ARCT 144 Construction Estimating I (3)**
This course is an introduction to residential material estimating. The basic principles of construction estimating are covered. Material lists, calculations and costs are made for several different houses and projects.
Prerequisite: ARCT 133. (S)
- ARCT 152 MEP Modeling (2)**
This course will introduce Revit MEP basics, including HVAC, electrical, and piping/plumbing components, as well as familiarize students with tools required to create, document, and print the parametric model.
Pre-requisite: ARCT 121. (S)
- ARCT 162 Construction Experience (1)**
In this course students will enhance their understanding of construction methods and materials by visiting multiple construction job sites and by working in the Building Construction Technology lab on a residential construction project. (S)
- ARCT 201 Architectural Modeling III (4)**
This course involves the development of a partial set of working drawings for a two story eight-plex wood framed apartment building. Students will use Revit software to develop the drawings for their project.
Prerequisite: ARCT 102 and ARCT 121. (F)
- ARCT 202 Architectural Modeling IV (4)**
This course includes an extensive introduction to pre-engineered metal buildings and a more in-depth coverage of light commercial conventional buildings, including masonry and steel in commercial design. The course will explore the relationship between design and building codes. Prerequisite: ARCT 201. (S)
- ARCT 212 Architectural Presentations (2)**
Course material covers the techniques of graphic communication, three-dimensional modeling, materials, lighting, and photo-realistic computer renderings and animations. Special presentation software is introduced and utilized to provide rendered presentations using a computer. Prerequisite: ARCT 201. (S)
- ARCT 214 Architectural Portfolio (1)**
This seminar course will guide the student through the creation of two portfolios of their architectural related work. Organization and presentation skills will be emphasized. Prerequisite: ARCT 212. (S)
- ARCT 221 Structural Detailing (3)**
Structural detailing provides the student with an introduction to devising and drafting large-scale details of structural systems and connections. Other covered topics will include precast concrete detailing and structural steel shop drawings. Both Autodesk Revit and AutoCAD will be used to complete projects in this course.
Prerequisite: ARCT 122. (F)
- ARCT 223 Renovation and Design (3)**
This course is a practical introduction to the techniques of upgrading, rehabilitation and design of residential and/or commercial structures to meet the needs of today's customer. Prerequisites: ARCT 102, ARCT 133 and ARCT 144. (F)
- ARCT 231 Construction Methods and Materials II (3)**
This course is a continuation of study for construction methods, terminology and use of construction materials with an emphasis on commercial construction. Students will work as part of a team to select methods and materials for a commercial project. This course will also introduce methods and materials used in foundation systems, masonry, steel, light gauge metal framing, precast, roofing, and internal and external finishes as they relate to commercial construction. Students may visit job sites to examine the latest methods of commercial construction.
Prerequisite: ARCT 133. (F)
- ARCT 241 Construction Estimating II (3)**
This course will build upon student's knowledge of manual estimating to create Excel spreadsheets and utilize the On Screen Take-off software. Students become familiar with contracting and estimating procedures. The study of pre-engineered metal building terminology and the Butler Advantage software is also covered.
Prerequisite: ARCT 144.

- ARCT 242 Construction Estimating III (3)**
This course covers manual and computer-aided takeoff procedures for commercial buildings. Calculations may utilize manual ledger forms, excel spreadsheets, and computer assisted estimating programs. Students become familiar with contracting and estimating procedures. Calculating labor hours for various construction tasks is also included. Prerequisite: ARCT 241. (S)
- ARCT X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- ARCT 297 Cooperative Education (1-5)**
Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- ARCT 299 Special Topics (1-15)**
A course designed to meet special departmental needs.

(ASC) ACADEMIC SERVICES CENTER

- ASC 060 English Language and Grammar Skills (1-2 credits)**
This course teaches grammar, punctuation, mechanics, spelling, and vocabulary based on individual needs. Emphasis is on grammar and usage in sentence structure. Upon recommendation of the instructor, this course may be repeated for additional credit. (O)
- ASC 067 English as a Second Language (1-2)**
This course helps students who speak English as a second language or other language to communicate more effectively in academic and daily life. Areas of study include emphasis on speaking and listening. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)
- ASC 082 Effective Reading (2)**
Introduces strategies for developing college level reading skills with emphasis on improving reading efficiency by building vocabulary and improving basic reading and study skills. (F, S, Su, O)
- ASC 084 Critical Reading (2)**
Develops critical reading comprehension and thinking skills through interpretation of selected reading materials and by building vocabulary. Includes distinguishing between fact and opinion, drawing inferences and conclusions, analyzing the organization of material, and seeing relationships. (F, S, Su, O)
- ASC 086 College Writing Prep I (2)**
This course is designed to help students gain the skills of sentencng and paragraphing. Through conferencing, the instructor and student identify and prioritize writing problems. This course is designed to prepare students for College Writing Prep II. (F, S, Su, O)
- ASC 087 College Writing Prep II (2)**
This course is designed to help students gain the skills of paragraphing and essay writing. Through conferencing, the instructor and student identify and prioritize writing problems. This course offers a transition to entry-level English composition courses. (F, S, Su, O)
- ASC 088 Composition Lab (1)**
Provides supplemental and developmental instruction for students currently enrolled in an English 110 course. Instruction in grammar and essay writing is based on student need with time allowed for the English course assignments. This course may be repeated when additional English courses are taken. (F, S, Su, O)
- ASC 089 Math Companion Lab (1)**
To provide supplemental and developmental instruction for students taking any mathematics course. This course is taken the same semester as the required math course. Instruction based on student need with time allowed for application to math course assignments. This course may be repeated when taking another math course. This course may be required due to ACCUPLACER test results and the course placement policy. (F, S)

- ASC 090 Math Prep (2)**
This course improves basic math computational skills: addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals. Includes a study of percent and percent applications. Study skills will be incorporated throughout the course. Credit earned does not count towards any degree, nor does it transfer. Placement: ACT math score of 1-12, or appropriate ACCUPLACER score. This course may be required due to ACCUPLACER test results and the course placement policy. (F, O)
- ASC 091 Algebra Prep I (2)**
This course begins with the development of the fundamental skills required for the successful completion of studies in college level mathematics courses. Topics include operations with whole numbers, fractions and percent problems, operations on real numbers, order of operation, simplification and evaluation of expressions, solving one and two step linear equations and applications. Study skills will be incorporated throughout the course. Credit earned does not count towards any degree, nor does it transfer. Prerequisite: ACT math score of 13-15, appropriate ACCUPLACER score, or successful completion of ASC 090. (F, S, O)
- ASC 092 Algebra Prep II (2)**
This course continues the development of the fundamental skills required for the successful completion of studies in college level mathematics courses. Topics include linear equations, linear inequalities, systems of linear equations, exponents and polynomials, and rational exponents and radicals. Study skills will be incorporated throughout the course. Credit earned does not count toward any degree, nor does it transfer. Prerequisites: ACT-math score of 16-18, appropriate ACCUPLACER score, or successful completion of ASC 091. (F, S, O)
- ASC 093 Algebra Prep III (2)**
This course continues the development of the fundamental skills required for the successful completion of studies in college level mathematics courses. Topics include factoring, rational equations, quadratic equations, and functions. Study skills will be incorporated throughout the course. Credit earned does not count towards any degree, nor does it transfer. Prerequisites: ACT math score of 19-20, appropriate ACCUPLACER score, or successful completion of ASC 092. (F, S, O)
- ASC 099 Special Topics (1-9)**
A course designed to meet special departmental needs. Upon recommendation of the instructor, this course may be repeated for additional credit.
- ASC 180 Prior Learning Assessment (1)**
This course is designed for the adult learner to assemble their knowledge from work experiences, leisure, independent study, etc. into a portfolio for faculty evaluation of potential college academic credits. (O)

(AST) AUTONOMOUS SYSTEMS TECHNOLOGY

- AST 101 Ground Systems I (2 credits)**
Students will learn about the fundamentals of ground-based autonomous technologies and their application in various industries such as, agriculture, transportation, manufacturing, and defense. Students will gain a foundational understanding of the system components that are required for autonomous operations on any machine or vehicle. Autonomous system safety requirements will also be covered during this class. (F)
- AST 102 Ground Systems II (2)**
Students will receive an introduction to some of the autonomous system control methods and algorithms used to operate a ground-based autonomous system. Control methods to be covered will include area mapping and lead/follow. A brief introduction to control logic methods and the PID algorithm will be covered during this course. Prerequisite: AST 101. (S)
- AST 103 Autonomous Sensing Systems (2)**
Students will learn about various sensor systems used on autonomous platforms for positioning, movement, data collection, and other tasks, along with the basic scientific principles behind the respective sensor's operation. Sensing methods to be covered will include ultrasound, radar, color, vision, and global positioning. This class will include introductory hands-on sensor installation and commissioning exercises. Prerequisite: AST 101. (S)
- AST 111 Introduction to Data Science (2)**
Students will be introduced to basic data collection techniques and how this collected data is analyzed for use by autonomous equipment. (F)

- AST 220 Autonomous Systems Capstone (2)**
In this course students will use the knowledge and skills obtained in their previous AST coursework to configure a small ground-based vehicle for autonomous operation. Students will be assigned a specific task for their vehicle to perform and will test their vehicle's ability to complete this task as determined by the instructor. (S)
- AST X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- AST 299 Special Topics (1-15)**
A course designed to meet special departmental needs.

(AUTO) AUTOMOTIVE TECHNOLOGY

- AUTO 103 Power Trains/Brakes (3 credits)**
A lecture, demonstration, and performance type course covering brakes, differentials, clutches, standard transmissions and transaxles. Included in the course is the study of operation, construction differences, and repair procedures and use of special tools. This is a half semester course.
- AUTO 133 Power Trains I (1)**
An applied automotive course intended for the student who is interested in pursuing a career in automotive technology or related fields. This course is a lecture, demonstration, and performance course that covers the basic mechanical principles and fundamentals of operation, disassembly, and adjustment procedures of the following components: manual transmissions, transaxles, clutches, driveshafts, u-joints, half shafts and CV joints.
- AUTO 134 Power Trains II (1)**
An applied automotive course intended for the student who is interested in pursuing a career in automotive technology or related fields. This course is a lecture, demonstration, and performance course that covers the basic mechanical principles and fundamentals of operation, disassembly, and adjustment procedures of the following components: differentials, transfer cases, and automatic transmissions.
- AUTO 143 Steering, Suspension and Wheel Alignment (3)**
A lecture, demonstration, and performance type course covering steering gears, power steering pumps, steering linkage, suspension systems, two- and four-wheel alignment, and wheel balance. Included in the course is the study of the operation, construction differences, diagnosing, and repair procedures of the steering, suspension and wheel alignment systems, and driveshafts and driveshaft servicing. This is a half semester course. (F, S)
- AUTO 155 Brakes I (1)**
An applied automotive course intended for the student who is interested in pursuing a career in automotive technology or related fields. This course is a lecture, demonstration, and performance course that covers the principles of operation, disassembly, and adjustment procedures of the following components: brake system hydraulics, boost systems, drum and disc brake systems.
- AUTO 161 Automotive Electronic Systems (2)**
This is a lecture, demonstration, and performance type of course which covers the principles of electricity as it applies to electrical circuits along with wire schematic reading, and component and connector locations to locate and find electrical faults. This includes the study of Ohms Law, Snap-On Multi-meter and Ethos certification.
- AUTO 163 Automotive Charging and Starting (3)**
This is a lecture, demonstration, and performance type of course which covers the principles of electricity and applies it to electrical circuits, batteries, starters, and alternators. It will include Ohm's Law, schematic reading, test instruments, starter testing and repair, alternator testing and repair and learning electrical fundamentals as well as troubleshooting starter and alternator electrical problems.
- AUTO 165 Automotive Electrical and Electronics (5)**
This is a lecture, demonstration, and performance type of course which covers the principles of electricity as it applies to electrical circuits, schematics, batteries, starters, and alternators. This includes the study of Ohm's Law, multi-meter functions and faults found in electrical circuits along with many hands-on practices, and multi-meter certification. This is a half semester course.
- AUTO 168 Hybrid and Electric Vehicle Systems (1)**
A lecture, demonstration and performance type course covering the fundamentals of hybrid and electric vehicles. Includes the study of history, safety, regulations, and equipment required for vehicle service. High and low voltage systems, powertrains, brakes, HVAC, and cooling systems will be covered. Prerequisite: AUTO 165. (S)

AUTO 188

Driveability Procedures I (5)

A lecture, demonstration and performance type course covering the basics of engine diagnosis in the areas of engine condition, fuel delivery, ignition systems, emission control and scan tool diagnostic procedures to include hands-on training in all of these areas. This will also include industry-based training and operations of Snap-On scan tools. This is a half semester course. Prerequisites: AUTO 165.

AUTO 206

Chassis Repair/Body Electrical (7)

This course covers the operation, testing/diagnosing, servicing of the chassis mechanical and electrical system. The systems covered will be anti-lock braking, four-wheel alignment, supplemental restraints, 4WD and AWD, automatic climate control, anti-theft systems, cruise control and other chassis related systems. The course will begin with a review of fundamentals of the systems mentioned and lead to how the system operates on the vehicle along with diagnosis/servicing system components. This is a half semester course.

Prerequisites: AUTO 103, AUTO 143, AUTO 165 and TECH 109.

AUTO 209

Advanced Chassis Repair and Body Electrical (4-8)

A production lab class where the student works on customer owned vehicles. The students are in charge of writing repair orders, diagnosing vehicle problems, repair of the vehicle and figuring labor time of the individual labor charges for the services they performed. Lab work will be performed on the following units: brakes, alignment, suspension and steering, electrical accessories, instrumentation, air conditioning, standard transmissions/transaxles, clutches, differentials, and many other areas which pertain to the chassis.

Prerequisites: AUTO 103, AUTO 165, AUTO 143, TECH 109, AUTO 206 and AUTO 207. Must be arranged with Automotive Department program coordinator.

AUTO 216

Engine Repair (7)

Theory and lab course covering the rebuilding of gas and diesel engines. Topics covered are: proper removal, installation, cleaning, valve grinding, cylinder head servicing, engine bearings, hydraulic lifters, camshaft servicing, cooling, oiling systems and engine noises. This course is offered both fall and spring semesters.

Prerequisites: MFGT 110, AUTO 165, and AUTO 188.

AUTO 219

Advanced Engine Rebuilding (4-8)

An advanced course in engine rebuilding including complete cylinder head service, camshaft degreasing and other related areas. This is a half-semester course. Must be arranged with Automotive Department chairman.

Prerequisite: AUTO 216.

AUTO 226

Automatic Transmission/Transaxles (7)

A lecture and lab type course that covers automatic transmissions and automatic transaxles. A study of torque converters, planetary gears, hydraulic and electronic controls, oil circuits, valve body assemblies, linkage and band adjustments, pressure checks, hydraulic, electrical, and mechanical diagnostic procedures for transmission failures. Student will also learn in lab hands-on operation, procedures and repair of various types of automatic transmissions and transaxles including removal, disassembly, measuring various components, reassembly, and installation back into the vehicle. This is a half semester course. Prerequisites: AUTO 103, AUTO 143, AUTO 165 and MFGT 110.

AUTO 229

Advanced Automatic Transmissions/Automatic Transaxles (4-8)

An advanced course in automatic transmission/transaxles service, including overhaul procedures, and hydraulic and electrical diagnosis procedures. Computer controlled shifting and clutches will be diagnosed using volt/ohmmeters and scan tools. Diagnosis and repair will be performed on current models. This is a half-semester course. Must be arranged with Automotive Department program coordinator. Prerequisite: AUTO 226.

AUTO 286

Driveability Procedures (7)

This course covers the operation, diagnosis and testing of the following: emission controls, ignition systems and fuel systems on domestic and foreign passenger vehicles. The student will be instructed in using diagnostic equipment to test various vehicles. This is a half semester course. Prerequisites: AUTO 165 and AUTO 188.

AUTO 289

Electronic and Computer Systems (4-8)

An advanced automotive electronics course emphasizing the diagnosis and repair of the computerized systems currently found in the automotive industry. The course offers extensive training in the various electronic ignitions, fuel injection, emission, electronic instrumentation and other electronic control devices now being used by most automobile manufacturers. Students will be working on a wide variety of current model automobiles. This is a half-semester course. Must be arranged with Automotive Department program coordinator.

Prerequisite: AUTO 286.

- AUTO X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- AUTO 297** **Cooperative Education (1-5)**
Cooperative education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- AUTO 299** **Special Topics (1-8)**
A course designed to meet special departmental needs.

(BADM) BUSINESS ADMINISTRATION AND MANAGEMENT

- BADM 103** **Leadership Techniques (1 credit)**
This course provides students with the opportunity to develop or hone their leadership skills through the Collegiate DECA, a national organization of college students preparing for a variety of career areas. Activities promoted by DECA integrate with and enhance the student's college curriculum. Students will participate in leadership activities and conferences. Membership in Collegiate DECA is a requirement. (S)
- BADM 110** **Introduction to eBusiness (3)**
This is a study of e-commerce which provides a foundation for understanding the e-marketing environment and presents planning considerations that contribute to effective e-marketing operations. Practical strategies for building a Website with its own unique qualities that will attract visitors and turn them into customers. (O)
- BADM 201** **Principles of Marketing (3)**
This course is an overview of marketing and distribution and all activities that direct the flow of goods from producer to consumer. The course focuses on the components of the marketing mix — product, price, place, and promotion — and examines the consideration that needs to be made to effectively implement a marketing plan. The student will take learned knowledge and translate it into a marketing plan for an existing or fictitious business. (F, O)
- BADM 202** **Principles of Management (3)**
This course is a study of the management activities of planning, organizing, directing, and controlling. Various internal and external factors which affect business will be explored, including how marketing and management decisions can contribute to the overall success of a business venture. (S, O)
- BADM 205** **Supervisory Management (3)**
Introduction to management theory and applications intended to increase supervisory effectiveness. Topics include planning, leading, organizing, controlling, coordinating and decision-making at the supervisory level. (As needed)
- BADM 217** **Promotion and Advertising (3)**
This is a study of the integrative role of the use of promotion to inform, persuade or remind consumers of the business or organization. This includes a discussion on how to utilize the elements of promotion (advertising, publicity, sales promotion, personal selling) in a coordinated way to meet organizational objectives. Students will develop and present an advertising/promotional campaign for a product or business as a culminating course activity. (F, O)
- BADM 230** **Marketing Information Analysis (3)**
This course teaches students the fundamental skills required to provide relevant information to market and management decision makers for effective decision-making related to marketing activities. These activities may include product(s), pricing, distribution, branding and promotion. Defining the problem, researching the problem, designing research methods, administering the instruments and collecting data, and making recommendations to decision makers will be covered. (S/S-Online)
- BADM 234** **Customer Service (1)**
Students will learn how to build a loyal, long-term customer relationship by meeting the needs and wants of customers, handling difficult customers with tact and skill, respecting diversity, and providing superior customer service in person, online, and via telephone in a variety of customer service environments. (F-Online)

BADM 240

Sales (3)

A basic course in the principles and psychology of selling with an emphasis on techniques and human relations in the selling situation. The steps of a sale including feature-benefit analysis, handling objections, and closing the sale are included. Students participate in exploring product knowledge, understanding and analyzing the consumer, and investigating the competition using experiential exercises. (F, S, O)

BADM 241

Sales Management (3)

Professional sales management integrates sales and marketing management. Emphasis is on relationship selling, which seeks to establish long-run partnerships with customers based on trust, quality and mutual respect. More attention is given to industrial sales than to consumer sales, selling products and services to businesses. This includes planning and organizing the sales force, estimating the market potential and developing, directing, motivating and leading the sales force, as well as consideration of controlling and evaluating sales performance. Prerequisite: BADM 240. (As needed)

BADM 244

Sales Seminar (3)

This course is designed to address the direct, industrial and professional salesperson's approach to problem-solving and understanding the buyer's needs and communicating that understanding to the buyer. The student will develop an awareness of the selling process toward mutual satisfaction for both the seller and buyer of goods and/or services. (S, O)

BADM 251

Personal Finance (3)

Personal Finance studies the economic management of personal finances. The course provides an overview of various decision-making concepts, tools and practical knowledge to assist the student in effective management of personal financial affairs. Topics include: budgeting, borrowing, career choices, consumer credit, financial statements, insurance, real estate, retirement planning, tax planning, transportation, savings and investing. (S-Online)

BADM 281

Organizational Behavior (3)

Organizational Behavior is a study that investigates the impact that individuals, groups, and structure have on behavior within an organization, and then applies that knowledge to make organizations work more effectively. The course will focus on how managers can improve productivity, reduce absenteeism and turnover, and increase employee citizenship and job satisfaction. (S, O)

BADM 282

Human Resource Management (3)

A course that is a survey of human resource management, including job analysis, recruitment, selection, performance appraisal, compensation, training and labor relations. The impact of environmental influences, such as legislation, court decisions and unions on human resource activities are addressed. (F, O)

BADM 291

Career Seminar (3)

The student has the opportunity to participate in various projects and activities to demonstrate and perhaps improve his/her competency level in regard to desired student outcomes of the Business Management program. Activities will consist of a number of topics utilizing team interactions, role-playing, problem identification, problem-solving, creative thinking, decision-making, verbal and written communications and other personal and professional development exercises necessary for successful employment in business. (S, O)

BADM X92

Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

BADM 297

Cooperative Education (1-5)

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

BADM 299

Special Topics (1-9)

A course designed to meet special departmental needs.

(BCT) BUILDING CONSTRUCTION TECHNOLOGY

BCT 110 Concrete and Sitework (4 credits)

This course is an introduction to the techniques of forming, placing, and finishing concrete. Students will gain experience and knowledge of footings, walls, and flat work as well as the tools used in the concrete construction industry. The course is conducted during the first eight weeks of the fall semester and is primarily lab. The students actually prep the sub-grade, construct the form-work, install the reinforcement, place and finish the concrete, strip and clean the forms, and backfill the work site as required. Skid steer operation as well as the use of other construction equipment is incorporated into this hands-on training experience. (F)

BCT 111 Concrete Theory (2)

This course gives the students an understanding of proper procedures and techniques for placing, finishing, jointing, curing, and protection of concrete flatwork. (F)

BCT 115 Introduction to Light Commercial Construction (3)

This course is an introduction to framing techniques to include constructing a floor system, framing of walls, constructing and installing rafters, applying sheathing, installing windows and doors, installing siding and soffits, and installing shingles. Both wood and metal is used in the construction of small utility type structures. The students use blueprints to construct these projects and work in small teams. This course is primarily lab. (F)

BCT 131 Rough Carpentry (3)

This course is primarily laboratory focused consisting of proper construction of floor, wall and roof assemblies using appropriate means and methods in regards to building codes and applicable drawings. The students are also developing their skills as a leader and crew member. Students are required to give daily safety toolbox talks, plan daily tasks, and track daily logs and timesheets. (S)

BCT 132 Exterior Finish Construction (3)

This course is primarily laboratory focused consisting of proper construction of exterior weather barriers, windows and doors, and exterior finishes while following appropriate building codes, manufacturer's instructions and applicable drawings. The students are also developing their skills as a leader and crew member. Students are required to give daily safety toolbox talks, plan daily tasks, and track daily logs and timesheets. (S)

BCT 133 Carpentry Fundamentals (2)

This course is primarily lecture focused on the basics of carpentry. Course modules consist of orientation to the trade, building materials and fasteners, hand and power tools, floor assemblies, wall assemblies, roof assemblies, building envelopes, and basic stair layout. (F)

BCT 140 Intro to Print Reading (2)

This is a comprehensive lecture-based course that covers print reading fundamentals, construction materials, and light frame construction used in residential and light commercial buildings. The course provides information applicable to carpentry, electrical, mechanical, and general building trades. It provides an authentic print reading experience using contemporary prints. Also included is updated coverage on building codes, CSI Master Format, LEED Certification, and Green Building Technology. (F)

BCT 201 Supervised Occupational Experience I (6)

The student will receive on-the-job experience on a construction project. This will allow the student to practice and utilize the skills and knowledge learned during the previous on-campus instructional period. The work experience will be supervised by the NDSCS Supervised Occupational Experience coordinator. (Su)

BCT 202 Construction Seminar (2)

The student will receive customized learning modules based on evaluations acquired from Supervised Occupational Experience I. The course will require a minimum of 64 hours over a two-week period. Students will be assigned learning objectives necessary for the successful completion of Supervised Occupational Experience II. (F)

BCT 203 Supervised Occupational Experience II (4)

The student will receive on-the-job experience on a construction project. This will allow the student to practice and utilize the skills and knowledge learned during the previous on-campus instructional period. The work experience will be supervised by the NDSCS Supervised Occupational Experience coordinator. (F)

BCT 212 Steel Frame Construction (3)

This course provides experience and knowledge of how to work with commercial construction materials. Methods of constructing pre-engineered structures and steel construction including commercial frame, floor, roof, and interior systems will be taught. Hollow metal doors, frames and hardware will be included. Equipment usage and safety will be emphasized. (F)

- BCT 220** **Project Supervision (3)**
This is a lecture/discussion-based class in supervisory training. Individual participation is highly recommended and encouraged. It is a comprehensive, competency-based program that gives new field managers a step-by-step approach to honing their natural abilities, developing essential skills, and generally improving their performance as leaders. Students will learn management skills in problem solving, planning, estimating, safety supervision, scheduling, controlling costs and resources, and, perhaps most important, managing people. These are skills most easily acquired through formal education. (S)
- BCT 222** **Construction Safety (2)**
This course is designed to parallel the 29CFR1926 OSHA Construction Industry Regulations. The course covers both the compliance as well as best practices in the construction industry as they pertain to safety. Upon completion of this course students will receive a "30 Hour OSHA Safety Card." Attendance at each of the 30 hour sessions is mandatory.
- BCT 224** **Building Layout (2)**
The course will be held in a classroom and outdoor environment where the student will learn basic site layout and determining elevations. Students will utilize basic site layout tools during the lab portion of the class.
- BCT 231** **Interior Finishes (3)**
This course provides a hands-on lab-based experience and knowledge of the skills and techniques to perform in the field of carpentry. Methods of laying out and installing insulation, vapor barrier, drywall and getting to a finished wall state (painted). Organization, quality control, estimating materials and coordination with others will be emphasized. (S)
- BCT 232** **Finish Carpentry (3)**
This course provides a hands-on lab-based experience and knowledge of the skills and techniques to perform in the field of finish carpentry. Methods of laying out and installing frames/doors, cabinet/counter installation, millwork, floor coverings, tile and finish hardware. Organization, quality control, estimating materials and coordination with others will be emphasized. (S)
- BCT 233** **Commercial Finishes (3)**
"Carpentry Framing and Finishing from the National Center for Construction Education and Research" (NCCER), along with "Fundamentals of Building Construction" are used to educate the student in areas of commercial and residential finishes. Some specific topics covered are cold-formed steel framing; thermal and moisture protection; doors and door hardware; drywall installation; window, door, floor, and ceiling trim; cabinet installation; selecting interior finishes; interior walls and partitions; and finish ceilings and floors. It is to develop the students' vocabulary and knowledge of the commercial construction industry relating to construction practices and construction material requirements within our industry. (S)
- BCT 240** **Commercial Print Reading (3)**
This course provides a print reading experience relating to commercial construction. The course covers the skills needed to interpret plans and specifications commonly included on prints for large commercial structures. Expanded topics include materials and methods, the roles of building-process participants, and project delivery methods. Included are types of construction, specifications, site work, structural steel construction, reinforced concrete construction, mechanical and electrical systems, and finish construction found on commercial projects. Students will become familiar with terms and symbols that are commonly used in commercial blueprints. (F)
- BCT X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- BCT 299** **Special Topics (1-9)**
A course designed to meet special departmental needs.

(BIOL) BIOLOGY

- BIOL 109** **The Living World (3)**
This is an introductory level biology course that has no lab. The class is not for biology majors. Includes: Basic concepts in Biology, Natural History, Sociobiology, Human Bio-Social interaction. (S)
- BIOL 111** **Concepts of Biology (3 credits)**
Concepts of Biology is an introductory level non-majors transferable class that focuses on basic science literacy including the topics of cellular and molecular biology, genetics, evolution, taxonomy and environmental biology. Corequisite: BIOL 111L. (F-Fargo, S-Wahpeton/Fargo) ND:LABSC

- BIOL 111L** **Concepts of Biology Lab (1)**
 Concepts of Biology Lab is an introductory level non-majors transferable class that focuses on basic science literacy including the topics of cellular and molecular biology, genetics, evolution, taxonomy and environmental biology. Corequisite: BIOL 111. (F-Fargo, S-Wahpeton/Fargo) ND:LABSC
- BIOL 115** **Concepts of Anatomy and Physiology (3)**
 A one-semester course that integrates the structure and function of the human body and is an introduction to basic chemistry, the cell, tissues and all major organ systems. Corequisite: BIOL 115L. (F, S, O) ND:LABSC
- BIOL 115L** **Concepts of Anatomy and Physiology Lab (1)**
 A one-semester course that integrates the structure and function of the human body. This course is a hands-on experience utilizing a variety of learning tools and is an introduction to basic chemistry, the cell, tissues and all major organ systems. Corequisite: BIOL 115. (F, S, O) ND:LABSC
- BIOL 124** **Environmental Science (3)**
 Relation of humans to their environment. Emphasis is placed on understanding current environmental issues from a scientific standpoint. Topics explored in the course include climate change, energy, natural resource consumption/management, pollution, population growth, sustainability, and waste management. Corequisite: BIOL 124L. (F, O) ND:LABSC
- BIOL 124L** **Environmental Science Lab (1)**
 Relation of humans to their environment. Emphasis is placed on understanding current environmental issues from a scientific standpoint. Laboratory activities will address: climate change, energy, natural resource consumption/management, pollution, population growth, sustainability, and waste management. Corequisite: BIOL 124. (F, O) ND:LABSC
- BIOL 150** **General Biology I (3)**
 A two-semester sequenced study of the fundamental topics of biology with an emphasis on cellular biology. The course is designed for science majors. Corequisite: BIOL 150L. (F) ND:LABSC
- BIOL 150L** **General Biology I Lab (1)**
 A two-semester sequenced study of the fundamental topics of biology with an emphasis on cellular biology. To be taken in conjunction with BIOL 150. The course is designed for science majors. Corequisite: BIOL 150. (F) ND:LABSC
- BIOL 151** **General Biology II (3)**
 A two-semester sequenced study of the fundamental topics of biology, with an emphasis on organismal biology. The course is designed for science majors and focuses on evolution, taxonomy, and ecology. Prerequisites: BIOL 150 and BIOL 150L. Corequisite: BIOL 151L. (S) ND:LABSC
- BIOL 151L** **General Biology II Lab (1)**
 A two-semester sequenced study of the fundamental topics of biology, with an emphasis on organismal biology. The course is designed for science majors and utilizes a variety of learning tools to study evolution, taxonomy, and ecology. Prerequisites: BIOL 150 and BIOL 150L. Corequisite: BIOL 151. (S) ND:LABSC
- BIOL 170** **General Zoology (3)**
 A survey of the animal kingdom, from simple to complex. Major invertebrate and vertebrate animal groups will be covered with emphasis on structure, function, life history characteristics and evolutionary advancements of each. Topics of animal ecology, with emphasis on regional species, concludes the course. Three one-hour lectures per week. Prerequisite: BIOL 150 or BIOL 151. Corequisite: BIOL 170L. (S-even years) ND:LABSC
- BIOL 170L** **General Zoology Lab (1)**
 A laboratory course to be taken in conjunction with BIOL 170. The structure and function of representatives of all major animal groups will be examined. Dissection and use of the microscope will be emphasized. The course will include a field trip to local terrestrial and aquatic habitats. One two-hour lab per week. Corequisite: BIOL 170. ND:LABSC
- BIOL 213** **General Pathology (3)**
 A general overview of the disease process and the mechanisms by which the human body copes with disease. Also, a survey of the more common diseases affecting various body systems. Prerequisite: BIOL 115 or Corequisite: BIOL 221. (S, O)
- BIOL 220** **Anatomy and Physiology I (3)**
 The first semester in the study of structure and function of the human body as an integrated whole. Corequisite: BIOL 220L. (F, S, Su, O) ND:LABSC

- BIOL 220L Anatomy and Physiology I Lab (1)**
A self-directed laboratory study of structure and functions of the human body that examines the general plan of body cells, tissues, and the skeletal, muscular, and nervous systems. This course emphasizes actual “hands-on” learning utilizing a variety of learning tools. This is the first semester of a two-semester course.
Corequisite: BIOL 220. (F, S, Su, O) ND:LABSC
- BIOL 221 Anatomy and Physiology II (3)**
The second semester in the study of structure and function of the human body as an integrated whole.
Prerequisite: BIOL 220. Corequisite: BIOL 221L. (F, S, Su, O) ND:LABSC
- BIOL 221L Anatomy and Physiology II Lab (1)**
A self-directed laboratory study of structure and functions of the human body that includes the anatomy and physiology of the endocrine, circulatory, respiratory, digestive, urinary, and reproductive systems. This course emphasizes actual “hands-on” learning utilizing a variety of learning tools. This is the second semester of a two-semester course. Corequisite: BIOL 221. (F, S, Su, O) ND:LABSC
- BIOL X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- BIOL 299 Special Topics (1-9)**
A course designed to meet special departmental needs.
See also Microbiology (MICR)

(BIOT) BIOTECHNOLOGY

- BIOT 101 Introduction to Biotechnology I (3 credits)**
This course is the first part of a two-course sequence designed to serve as an introduction to the field of biotechnology, its historical development, its current and future status and the technologies used to achieve the progress to date. All aspects of biotechnology’s impacts on our society are explored including the agriculture, medical, food science, pharmaceutical and environmental segments. The course covers the science behind the developments, the ethical challenges and societal implications associated with the past, current and future developments. Specific focus is given to developing a foundational understanding of the vocabulary and basic science associated with this field along with an appreciation for the extent the biotechnology field plays in the US and world economies. (O)
- BIOT 102 Introduction to Biotechnology II (3)**
This course is the second part of a two-course sequence designed to serve as an introduction to the field of biotechnology, its historical development, its current and future status and the technologies used to achieve the progress to date. All aspects of biotechnology’s impacts on our society are explored including the agriculture, medical, food science, pharmaceutical and environmental segments. The course covers the science behind the developments, the ethical challenges and societal implications associated with the past, current and future developments. Specific focus is given to developing a foundational understanding of the vocabulary and basic science associated with this field along with an appreciation for the extent the biotechnology field plays in the US and world economies. Prerequisite: BIOT 101. (O)
- BIOT 210 Biotechnology Methods I (3)**
This course is the first semester of a two-semester sequence of courses designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized within the biotechnology industry. This course will emphasize technical skills development, record keeping and communication skills, compliance with federal regulations and conformity to cGMP/cGLP standards. The course will meet for one hour of lecture and four hours of lab each week. Additional lab time may be required for completion of certain units.
- BIOT 220 Biotechnology Methods II (3)**
This course is the second semester of a two-semester sequence of courses designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized within the biotechnology industry. This course will emphasize technical skills development, record keeping and communication skills, compliance with federal regulations and conformity to cGMP/cGLP standards. The course will meet for one hour of lecture and four hours of lab each week. Additional lab time may be required for completion of certain units.

BIOT 230 Fundamentals of Bioprocessing (3)

This course is designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized within the biotechnology industry in the manufacturing/bioprocessing of biologically derived products. The course will emphasize the basic science, cellular metabolism and growth techniques used in the industry, specific examples of bioprocessed products currently on the market, compliance with federal regulations and conformity to cGMP/cGLP standards. Prerequisite: BIOT 210, BIOT 220. (O)

BIOT X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

BIOT 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(BOTE) BUSINESS, OFFICE AND TECHNOLOGY EDUCATION**BOTE 108 Business Mathematics (3 credits)**

Review of mathematical fundamentals with emphasis on business applications and problem-solving. The fundamentals of the four basic operations involving whole numbers, fractions and decimal numbers and proceeding into business computations involving bank records, payroll, simple and compound interest, percentages, promissory notes, markups, purchasing, selling, present value and annuities. Note: This course may not be used with MATH 123 to fulfill mathematics requirements for the associate of applied science degree. (F, S, O)

BOTE 171 Medical Terminology (4)

Study of prefixes, suffixes and root words of medical terminology and their meaning, spelling and pronunciation. Emphasis on building a working medical vocabulary based on body systems. Study the anatomy, physiology, diseases, laboratory and diagnostic procedures, medical and surgical procedures, drugs and abbreviations commonly used in the body systems and medical specialties. Prerequisite and/or corequisite: None. Web-based instruction. (F, S, Su, O)

BOTE X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

BOTE 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(BUSN) BUSINESS MANAGEMENT**BUSN 120 Fundamentals of Business (3 credits)**

An introduction to the basic principles of business organizations and enterprises in society which provide a function for personal business and entrepreneurial decision-making. Beneficial for individuals as employees or entrepreneurs. Explores the American business system, ownership forms, labor management relations, banking and finance, risk management, the legal environment and the government's role in business. (F/F-Online)

BUSN 170 Entrepreneurship (3)

This is an introductory course focusing on understanding the characteristics and role of the entrepreneur in the free-market economy. Students will develop an awareness of the opportunities for business ownership and develop some of the skills needed to effectively run a business. A capstone project will allow students to develop a business plan for a venture of their choosing. (S/S-Online)

BUSN 254 Financial Statement Analysis (3)

A course that interprets and analyzes accounting data and the financial statements with the use of Microsoft Excel. Topics include ratio analysis, budgeting and forecasting, time value of money, and capital budgeting. Prerequisite: CIS 101 or CSCI 116. (S)

BUSN 282 Professional Development (1)

This course will address professional skills which are necessary for students in their future role as both employees and supervisors. It aims to stimulate enthusiasm, interest and preparations for interpersonal skills and leadership development. Membership in Collegiate DECA is a requirement and this organization is the vehicle used to enable students to put into action the skills they have acquired. There will be an overnight excursion to attend a leadership conference. (F)

- BUSN 297 Internship (2)**
The development of business skills through work experience. A required total of 180 hours of supervised work at an approved business organization. Students will perform tasks as established in a training agreement between the business and the college. Two total semester credits required (by arrangement 2 credits per semester). (F, S, Su-as arranged)
- BUSN X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- BUSN 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(CAD) COMPUTER AIDED DRAFTING

- CAD 120 Introduction to AutoCAD (3 credits)**
This course is an introduction to the operation and application of computer-aided drafting utilizing AutoCAD software. Drawing and editing commands are studied and utilized in a final project. (F, O)
- CAD X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- CAD 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(CHEM) CHEMISTRY

- CHEM 110 Survey of Chemistry (3)**
Course designed for non-science majors who wish to obtain a basic understanding of chemistry as applied in the world today. (S)
- CHEM 110L Survey of Chemistry Lab**
CHEM 110L is the laboratory component of CHEM 110. Course designed for non-science majors who wish to obtain a basic understanding of chemistry as applied in the world today. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the chemistry laboratory, such as safety, techniques and documentation of experimental work. Corequisite: CHEM 110. (S)
- CHEM 115 Introductory Chemistry (3 credits)**
Introductory chemistry is a one-semester course designed to be an introduction to fundamental concepts used in general chemistry. The course topics include measurement, atomic theory, chemical bonding, ionic and covalent compounds, naming, shape, intermolecular forces, states of matter, solutions, reaction rates, equilibrium and acid-base chemistry. Prerequisite: ASC 092 and/or ASC 093 or equivalency exam. (F) ND:LABSC
- CHEM 115L Introductory Chemistry Laboratory (1)**
CHEM 115L is the laboratory component of CHEM 115. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the chemistry laboratory, such as safety, techniques and documentation of experimental work. Corequisite: CHEM 115. (F) ND:LABSC
- CHEM 116 Introduction to Organic and Biochemistry (3)**
This course is a one-semester course designed to be an introduction to organic chemistry and biochemistry. The course topics include alkanes, alkenes, alkynes, aromatics, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, amides, carbohydrates, lipids, amino acids, proteins, nucleic acids, enzymes and metabolism. Prerequisite: CHEM 115. (S) ND:LABSC
- CHEM 116L Introduction to Organic and Biochemistry Laboratory (1)**
CHEM 116L is the laboratory component of CHEM 116. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the organic and biochemistry laboratory, such as safety, techniques and documentation of experimental work. Prerequisite: CHEM 115L. Corequisite: CHEM 116 (S) ND:LABSC

- CHEM 121 General Chemistry I (4)**
 This course is the first semester of a two-semester sequence in general chemistry. General Chemistry I is focused on the fundamental concepts of chemistry, such as measurement, matter, molecules, ions chemical equations, ideal gases, atomic structure, ionic and covalent bonding, periodicity and molecular geometry.
 Corequisite: MATH 103 or department approval. (F) ND:LABSC
- CHEM 121L General Chemistry I Laboratory (1)**
 CHEM 121L is the laboratory component of CHEM 121. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard laboratory practices, such as safety, techniques and documentation of experimental work. Corequisite: CHEM 121. (F) ND:LABSC
- CHEM 122 General Chemistry II (4)**
 This course is the second semester of a two-semester sequence in general chemistry. General Chemistry II involves the applications of the first semester topics toward the study of intermolecular forces, solutions, reaction rates, equilibrium, solubility and complex ions, acids and bases, thermodynamics, electrochemistry and nuclear chemistry. Prerequisite: CHEM 121. (S) ND:LABSC
- CHEM 122L General Chemistry II Laboratory (1)**
 CHEM 122L is the laboratory component of CHEM 122. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide additional experience with standard laboratory practices, such as safety, techniques and documentation of experimental work. Prerequisite: CHEM 121L. Corequisite: CHEM 122. (S) ND:LABSC
- CHEM 241 Organic Chemistry I (4)**
 This course is the first semester of a two-semester sequence in organic chemistry intended for students in the sciences and pre-professional programs. Organic Chemistry I is focused on the study of structure and properties of organic compounds, with an emphasis on structure and bonding, nomenclature, stereochemistry, reactions, mechanisms and synthesis. Prerequisite: CHEM 121 and 122. (F) ND:LABSC
- CHEM 241L Organic Chemistry I Laboratory (1)**
 CHEM 241L is the laboratory component of CHEM 241. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the organic laboratory, such as safety, techniques, reactions, product analysis and documentation of experimental work. Prerequisites: CHEM 121L and 122L. Corequisite: CHEM 241. (F) ND:LABSC
- CHEM 242 Organic Chemistry II (4)**
 This course is the second semester of a two-semester sequence in organic chemistry intended for students in the sciences and pre-professional programs. Organic Chemistry II is further focused on the relationship of reactivity of organic compounds, with an emphasis on reactions, synthesis, mechanisms and spectroscopic methods. Prerequisite: CHEM 241. (S) ND:LABSC
- CHEM 242L Organic Chemistry II Laboratory (1)**
 CHEM 242L the laboratory component of CHEM 242. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide further experience with standard practices in the organic laboratory, such as safety, techniques, reactions, multi-step syntheses, product analysis and documentation of experimental work. Corequisite: CHEM 242. Prerequisite: CHEM 241L. (S) ND:LABSC
- CHEM X92 Experimental Course (1-9)**
 A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- CHEM 299 Special Topics (1-9)**
 A course designed to meet special departmental needs.

(CIH) Case IH

- CIH 106 Case IH Shop Service Management (2 credits)**
 This course covers operational policies followed by the dealership service department. Included will be discussion on shop service management, publications, tech manuals, ASIST (Technical Information Reference Tool) and eTIM (Electronic Technical Information Manual).
- CIH 110 Case IH Internship I (4)**
 The student will receive on-the-job experience at a Case IH dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the fourth 8-weeks of the first year. (S)

- CIH 210 Case IH Internship II (4)**
The student will receive on-the-job experience at a Case IH dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the first 8-weeks of the second year. (F)
- CIH 215 Case IH Engine Rebuild (6)**
A theory and lab course covering Case IH engine operating principles, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures, measurement fundamentals and basic engine troubleshooting. Prerequisite: DTEC 115. (F)
- CIH 216 Case IH Equipment Operation and Adjustments (4)**
This course will cover the operation, adjustments and repair of Case IH harvesting and planting equipment. Equipment inspections and calibration is included in this course. Students may operate and make field adjustments to this equipment for optimum performance, conditions permitting. (Su)
- CIH 225 Case IH Power Trains (4)**
A lab/lecture course covering the power train systems used in Case IH equipment. Mechanical shift, power shift and CVT transmissions will be covered in this course. Students will disassemble, reassemble, adjust and test these components found on Case IH equipment. Prerequisite: DTEC 125. (Su)
- CIH 255 Case IH Electrical/Electronics Diagnostics (5)**
This course involves the understanding of electrical sensors, actuators, and computer operation which is applied to Case IH equipment. Techniques of circuit diagnostics will be demonstrated and practiced using the electrical diagnostic manual, DVOM, test light, and special manufactures tools. Electrical work will involve the Case IH equipment which utilizes electronics to control mechanical operation. The student will perform hands-on testing, computer diagnostics, and calibration of various Case IH components and equipment. Prerequisite: DTEC 155.
- CIH 260 Case IH Advanced Farming Systems (3)**
A lab/lecture course designed to introduce the student to the Case IH Advanced Farming Systems (AFS). Basic GPS equipment guidance systems, operation and diagnostics will be utilized. Types of GPS signals and their applications currently used by Case IH Accuguide systems will be covered. AFS display setup and applications used on current Case IH equipment will be performed.
- CIH 265 Case IH Hydraulics Systems (5)**
A lab/lecture course covering the diagnostics, service and repair of the hydraulic functions on Case IH agricultural and mobile equipment. Open-center, closed-center and load sensing systems are covered as well as steering, hydrostatic drives and hydraulic functions of Case IH equipment. Prerequisite: DTEC 164.
- CIH X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- CIH 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(CIS) COMPUTER INFORMATION SYSTEMS

- CIS 101 Computer Literacy (2 credits)**
This course is designed to provide non-Computer Science majors with an introductory-level course in computer usage that prepares them for contemporary work environments. It is a hands-on lab-based course intended to introduce the student to the Windows operating system, Word, Excel and PowerPoint. Windows PC required. (Credit awarded for CIS 101 or CSCI 116, not both.) (F, S, Su, O) ND:COMPSC
- CIS 128 IT Essentials I (3)**
This course covers the fundamentals of computer hardware and software. This course helps students prepare for the CompTIA A+ Essentials exam (220-1001), which covers the fundamentals of computer technology, networking, and security, and validates the communication skills and professionalism required of all entry-level IT professionals. Students who complete this course will be able to describe the internal components of the computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. Topics included are laptops and portable devices, wireless connectivity, security, safety and environmental issues, and communication skills. Hands-on activities are essential items of the course. Virtual learning tools are integrated into the course. (F, O)

CIS 129 IT Essentials II (3)

This course covers the advanced concepts of computer hardware and software. It is designed to build on the knowledge and skills attained in CIS 128. This course helps students prepare for the CompTIA A+ Practical Application exam (220-1002). It implements more of a hands-on orientation and scenarios in which troubleshooting and tools must be applied to resolve problems. Prerequisite: CIS 128. (S, O)

CIS 142 Cybersecurity Operations (4)

Today's organizations are challenged with rapidly detecting cybersecurity breaches and effectively responding to security incidents. Teams of people in Security Operations Centers (SOCs) keep a vigilant eye on security systems, protecting their organizations by detecting and responding to cybersecurity threats. CCNA Cybersecurity Operations prepares candidates to begin a career working with associate-level cybersecurity analysts within security operations centers. (S, O)

CIS 164 Networking Fundamentals I (4)

The course introduces the architectures, models, protocols, and networking elements that connect users, devices, applications, and data through the internet and across modern computer networks - including IP addressing and Ethernet fundamentals. By the end of the course, students can build simple local area networks (LANs) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches. (F, O)

CIS 165 Networking Fundamentals II (4)

The course focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLANs) and security concepts. Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, and configure and secure a basic WLAN. Prerequisite: CIS 164. (S, O)

CIS 166 Windows Support (3)

In this course the student will develop skills to support Windows including setup, configuration, customization, optimization, network integration, administration, troubleshooting, messaging and other support issues. (As needed)

CIS 180 HTML and CSS (3)

This course will introduce students to HTML, XHTML and CSS. The students will learn how to write HTML code. The student will be able to identify and apply various codes and styles when creating a Web page. This will include writing HTML and CSS code for color, links, images, alignment, text styles, tables, forms and formatting values. Correct design aspects will be used along with learning about planning a Website, typography, promoting and maintaining a Website, and ways to attract visitors to your site. (F, S, O)

CIS 181 Web Authoring Software (3)

This course will introduce students to Web authoring software. Students will learn how to utilize this software package to create and design Web pages and Websites. The student will be able to identify and apply various tools associated with the software when creating a Web page. Students will utilize tools in the software package to develop Web pages with color, links, images, alignment, text styles, tables, forms and formatting. Prerequisite: CIS 180. (S, O)

CIS 182 Image Editing Software (3)

This course will introduce students to graphic editing software. Students will learn how to utilize this software package to create and edit images for Web pages and Websites. The student will be able to identify and apply various tools associated with the software such as layers, slices, incorporating color techniques, using painting tools, special effects, clipping masks and transforming type. Prerequisite: CIS 180. (S, O)

CIS 183 Social Media (3)

This course provides students with the concepts to observe an organization's current presence and competition on the social web, followed by the establishment of realistic social media goals and effective strategies to achieve them. Students will learn how to define an organization's target market on the social web and identify the social media platforms with the highest concentrations of its target audiences and determine how they are participating on those platforms and to select the optimal social media platforms for reaching its target audiences. In addition, students will also learn how to monitor and measure the progress made in reaching social media goals. (F, O)

- CIS 188 Application Design (3)**
This course provides an introduction to the field of human-computer interaction (HCI). Students will learn practical principles and guidelines needed to develop high quality interface designs—ones that users can understand, predict, and control. Students explore theoretical foundations, design processes, examples of direct manipulation, menu selection, and form fill-in to gain an understanding of excellence in design. Current HCI topics are explored with balanced emphasis on mobile devices, Web, and desktop platforms. It addresses the profound changes brought by user-generated content of text, photo, music, and video and the raised expectations for compelling user experiences. (F, S)
- CIS 191 First Year Seminar (1)**
This course provides students with the knowledge and opportunity to create an online portfolio where they can showcase their education and skills to obtain employment in their field of study. Students use tools in an online portfolio environment to create a product that includes their resume, documentation of their employment and education history, along with references. The goal is to create a usable and easily accessible platform for students to demonstrate their employability skills to prospective employers. (S, O)
- CIS 197 Internship (1-3)**
Students need to have completed one full semester of course work prior to taking this class. The internship is an industry work experience for the student. The student will work with/for an NDSCS industry partner. The length of the internship will be determined by the industry partner. Prerequisite: First-year core classes. (F, S, Su)
- CIS 212 Microsoft Windows Operating System Client (3)**
The purpose of this course is to offer all the critical information students need to successfully move into a role as an IT professional and support Windows Client OS in a business environment. Many hands-on exercises are included which allow students to practice skills as they are learned. (F)
- CIS 215 Implementing a Microsoft Windows Server Environment (4)**
This course provides students with the knowledge and skills necessary to install and configure Microsoft Windows Client computers that are part of a workgroup or domain. In addition, this course provides the skills and knowledge necessary to install and configure Windows Server to create file, print, Web and terminal servers. (F, O)
- CIS 216 Implementing a Microsoft Windows Network Infrastructure (4)**
This course teaches students, through lectures, discussions, scenarios, demonstrations, chapter review questions, textbook exercises, and classroom labs, the skills and knowledge necessary to configure, manage, and troubleshoot a Windows network infrastructure. (S, O)
- CIS 220 Operating Systems (UNIX) (3)**
This course will focus on the Linux operating system. Students will learn how to use basic Linux command-line commands as well as various Linux graphical user interfaces. Students will also work with and learn basic system administration for Linux. (F, S, O)
- CIS 232 Graphics Design (3)**
The students will explore and learn the concepts and skills behind a comprehensive vector-draw software application. They will learn how to apply smart design principles to multimedia products such as dynamic graphics, animation, and Websites. Students will create everything from simple graphics, icons, and text to complex and multi-layered illustrations, all of which can be used within a page layout, in a multimedia presentation or on the Web. (F, O)
- CIS 234 Networking (Windows NT) (4)**
This class will teach students how to configure, customize, optimize, integrate and troubleshoot Microsoft Windows NT operating systems in a single domain environment, focusing on implementing intranets and using Microsoft technology. (As needed)
- CIS 241 IT Forensics I (4)**
This course introduces the student to the fundamental concepts of digital forensics. Labs using primarily open source, free software and a variety of hardware reinforce the concepts discussed in classroom instruction. This class is primarily a hands-on experience. (F, O)
- CIS 242 IT Forensics II (4)**
This course teaches the student to apply the concepts of digital forensics. Labs using primarily open source, free software and a variety of hardware reinforce the concepts discussed in classroom instruction. This class is primarily a hands-on experience. The student will create a digital forensics workstation and will apply digital forensic analysis techniques to process and analyze digital evidence. (S, O)

- CIS 244 Web Server Management (3)**
 This course provides the student with an introduction to the basics of a Web server management role. The textbook covers installation, configuration and administration of Web servers. The student will be exposed to topics for both Linux and a Microsoft Windows server environment. They will work with Microsoft Windows Server and/or Red Hat Linux, Internet Information Services (IIS), Apache Web server, Microsoft SQL Server, MySQL, Microsoft Exchange Server, sendmail and more. (Assumes students have a basic background in networking.) (S, O)
- CIS 267 Intermediate Networking I (4)**
 The course describes the architectures and considerations related to designing, securing, operating, and troubleshooting enterprise networks. This course covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access. The course also introduces software-defined networking, virtualization, and automation concepts that support the digitalization of networks. Students gain skills to configure and troubleshoot enterprise networks and learn to identify and protect against cybersecurity threats. They are introduced to network management tools and learn key concepts of software-defined networking, including controller-based architectures and how application programming interfaces (APIs) enable network automation. Prerequisites: CIS 164, CIS 165. (F, O)
- CIS 279 Security Awareness and Policy (1)**
 This course is intended to provide a basic survey of the importance of Information Technology security awareness and data confidentiality. This security awareness-training course walks users through every aspect of Information Security in a broad, easy to understand way. It explains to the user the value of securing data, both for themselves and the organization. The class will introduce legislation, local, state and federal privacy policies and liability of individuals and institutions related to data confidentiality and integrity, to include HIPAA and Gramm Leach Bliley act. This course will introduce basic concepts of risk management, security policies, common threats and countermeasures. Best practices in access control and password policies will also be covered. (F, O)
- CIS 280 Fundamentals of Network Security I (4)**
 Introduction to Network Security course focusing on the overall security processes with particular emphasis on hands-on skills in the following areas: security policy design and management; security technologies, products and solutions; secure router design, installation; configuration and maintenance; AAA implementation using routers; Intrusion Detection implementation using routers; and Virtual Private Networks implementation using routers. Prerequisite: CIS 164. (S, O)
- CIS 282 Computer System Security (4)**
 This course introduces the basics of network security. The student will be introduced to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course will expose the student to network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. (F, O)
- CIS 284 Managing Network Security (4)**
 Increases the scope and depth of the skills and knowledge acquired in Network Security Fundamentals by focusing on the advanced capabilities of network defense strategies including Virtual Private Networks, Host Intrusion Detection Systems and Network Intrusion Detection Systems. Students will learn the evolution and current best practices of applying these technologies, which are universally deployed in networks of all sizes. (S, O)
- CIS X92 Experimental Course (1-9)**
 A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- CIS 297 Cooperative Education (1-5)**
 Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- CIS 299 Special Topics (1-9)**
 A course designed to meet special departmental needs.

(CJ) CRIMINAL JUSTICE

CJ 160 The Legal System (4 credits)

Function and ethics of the legal assistant in the law office and legal system. An introduction to the federal and state court systems, personnel in the legal field, and the historical development and nature of the law. (S-odd years)

CJ 201 Introduction to Criminal Justice (3)

Examination of the criminal justice system and process including crime, law-making, criminality, prosecution, police, courts, and corrections. (F) ND:SS

CJ 232 Administration of Justice (3)

For criminal justice students or laymen; designed to broaden the understanding of the student concerning the various agencies involved in the administration of criminal law. Emphasis is placed upon the more important law-enforcement functions and interrelationships from arrest to executive pardon. (S)

CJ 297 Internship (1-4)

Supervised placement in local agencies (Wahpeton Police Department, NDSCS Campus Police, and Richland County Sheriff's Office) to give students experience in various areas of policing and corrections and to cultivate career exploration. (F, S)

(CMT) CONSTRUCTION MANAGEMENT TECHNOLOGY

CMT 120 Surveying Fundamentals (2 credits)

This course covers the instruction and practice in the use of surveying instruments and equipment. Types of surveys, units of measure, elementary leveling, field notes, and benchmarks are covered. (F)

CMT 121 Plane Surveying (2)

This course is a continuation of CMT 120. The course will cover the instruction and practice in the use of surveying instruments and equipment. Types of surveys, field notes, benchmarks, traversing with transits or total stations, traverse calculations, bearing calculations, remote elevations and distances are covered. (F)

CMT 150 Construction Document Management (2)

This course is an introduction to construction document management in a digital world. Students will receive PROCORE certification training and utilize the PROCORE software for managing construction documents related to a construction project. Other software will include navigating a project with Revit Architecture and printing digital documents. Utilization of BlueBeam as it relates to construction document management will also be covered in the course. (S)

CMT 165 Residential and Project Experience (1)

This course provides students with the opportunity to be on a team that competes in the National Association of Home Builder's Residential Construction Management Competition. The event gives first year students the opportunity to apply skills learned in the classroom to a real construction company by completing a management project/proposal. Proposals are submitted to a group of construction company executives who act as judges. During the International Builder's Show, students defend their proposals to the judges in front of an audience. All students must be a member of the Home Builders Association in order to enroll in the course. (S)

CMT 225 Mechanical and Electrical Systems (2)

This course focuses on the mechanical and electrical equipment, their functions, and testing requirements as they relate to the construction industry from a construction management perspective. Terminology and general knowledge of the construction industry as it relates to mechanical and electrical systems will be emphasized. Prerequisite: BCT 140. (S)

CMT 251 Construction Documents and Specifications (3)

This course is designed to cover the fundamental understanding of construction contracts and specifications. Various contract delivery methods and an understanding of contract language will be studied. Navigating and interpreting construction specifications will be another focus in the course. Students will utilize actual specifications from several construction projects in the learning process. The course will primarily cover the 16 divisions of the CSI Master Format and an introduction the new CSI Format of 50 divisions. (F)

CMT 252**Project Management (3)**

This course focuses on the processes and tasks required for successful management of construction projects based on the NCCER curriculum. Students will gain a thorough understanding of all aspects of project coordination and contract administration. Topics will include project delivery systems, safety administration, project communication, interpersonal skills, conflict resolution, contract interpretation, construction planning, estimating and cost control, resource control, and continuous improvement. Ethics as it relates to project management and customer relations will also be discussed. Prerequisite: BCT 220.

CMT 253**Construction Scheduling (3)**

Students will study the importance of planning and scheduling in construction. This course will provide students with the fundamental skills necessary to plan and schedule the entire construction process. Students will work with several scheduling techniques commonly used in the construction industry and incorporate the use of scheduling software to schedule projects for a timely and economically successful completion. Prerequisite: BCT 220. (S)

CMT 265**Residential Project Experience (1)**

This course provides students with the opportunity to be on a team that competes in the National Association of Home Builder's Residential Construction Management Competition. The event gives students the opportunity to apply skills learned in the classroom to a real construction company by completing a management project/proposal. Proposals are submitted to a group of construction company executives who act as judges. During the International Builder's Show, students defend their proposals to the judges in front of an audience. All students must be a member of the Home Builder's Association in order to enroll in the course. (S)

CMT 297**Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

CMT 299**Special Topics (1-9)**

A course designed to meet special departmental needs.

(COMM) COMMUNICATION**COMM 110****Fundamentals of Public Speaking (3 credits)**

The theory and practice of public speaking with emphasis on content, organization, language, delivery and critical evaluation of messages. (F, S, Su, O) ND:COMM

COMM 112**Understanding Media and Social Change (3)**

Exploration of the purpose, function, and impact of media on society. (F) ND:SS

COMM 212**Interpersonal Communication (3)**

This course teaches students the fundamental skills required to provide relevant information to market and management decision makers for effective decision-making related to marketing activities. These activities may include product(s), pricing, distribution, branding and promotion. Defining the problem, researching the problem, designing research methods, administering the instruments and collecting data, and making recommendations to decision makers will be covered. (S/S-Online)

COMM X92**Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

COMM 299**Special Topics (1-9)**

A course designed to meet special departmental needs.

(COOP) COOPERATIVE EDUCATION**COOP 197****Cooperative Education (1-5 credits)**

Cooperative Education provides students the opportunity to explore career interests and develop professional skills through work experiences that are designed to unite career, social and personal growth into the educational process. This program requires supervision of the employer and program coordinator.

COOP 297

Cooperative Education (1-5)

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

(CSCI) COMPUTER SCIENCE

CSCI 102

Fundamentals of CyberLaw (3)

This course addresses issues which have arisen as a result of the explosive growth of the Internet and World Wide Web. It covers the following topics: ethical values, regulating of the Internet, controlling content and privacy, and intellectual property. (S, O)

CSCI 116

Business Use of Computers (3-4)

3 credits – This course is designed to teach the use of Microsoft Office in the business environment covering the most critical topics of Windows and Microsoft Office, to include Word, Excel, Access and PowerPoint, along with Cloud Computing. Students will be able to apply technology skills to enhance both their personal and professional lives. Additional topics include email basics and use of the Internet. No prior computer experience is assumed. Windows PC required.

4 credits – This course adds on to the 3-credit version by reflecting upon the role various forms of electronic and digital technology can play in today's information age. Students will integrate the Office applications and be introduced to additional technologies including Pivot Tables, OneNote and sharing documents in their Cloud Storage. (Credit awarded for CIS 101 or CSCI 116, not both.) (F, S, Su, O) ND:COMPSC

CSCI 133

Database Concepts I (SQL) (3)

This course provides students with an introduction to database concepts. The students will use the select statement to query databases and produce the correct outcomes. Students will use functions, join multiple tables and create sub-queries. (F, O)

CSCI 134

Database Design and Management (3)

This course focuses on the steps used for designing a relational database. Students will design and implement a relational database. (F, S)

CSCI 135

Web Programming (XML) (3)

This course will introduce students to JavaScript and Principles of Web design. The students will learn about using JavaScript to affect the appearance and characteristics of a Web page integrating social media and optimizing a Website for search engines. JavaScript allows you to create dynamic content and make the Web page interactive. The student will also be able to identify and apply various scripting languages such as HTML, Cascading Style Sheets (CSS) and JavaScript. Students will also learn to author Web pages utilizing principles of Web design. The students will learn how to apply CSS rules and properties to enhance tables, forms, images, colors, etc. Prerequisite: CIS 180. (S, O)

CSCI 160

Computer Science I (4)

An introduction to computer science including problem-solving, algorithm development and structured programming in a high-level language. Emphasis on design, coding, testing and documentation of programs using accepted standards of style. An introductory course in applying structured computer programming logic and concepts. A structured, systematic approach will be used in program development including problem analysis, structured logic design, program coding, program testing, debugging and documenting. An object-oriented language will be used for programming projects. Concepts of programming will include screen generation, keyboard and file input, data validation of input data, arithmetic formulas and functions, logical operations, and design and production of organized output. (F, O) ND:COMPSC

CSCI 161

Computer Science II (Java) (4)

Advanced concepts in computer science including data structures, algorithm analysis, and standard problems such as searching and sorting and memory management issues. A continuation of CSCI 160. Programming concepts to be demonstrated and utilized within programs include: using output screens with menus, various looping structures, file input and output, writing and utilizing functions, using arrays, multidimensional arrays, structures and pointer data types, and searching and sorting using array data structures. Program efficiency and debugging techniques will be included. Prerequisite: CSCI 160. (S) ND:COMPSC

CSCI 162 Web Application Programming (3)

This course uses concepts learned in CSCI 160 and CSCI 161 to develop web applications suitable for use by today's mobile users. This course will introduce students to JavaScript. The students will learn about using JavaScript to affect the appearance and characteristics of a Web page. JavaScript allows you to create dynamic content and make the Web page interactive. The student will also be able to identify and apply various scripting languages such as HTML, Cascading Style Sheets (CSS), and JavaScript. (S, O)

CSCI 183 Database Concepts II (SQL) (3)

Continuation of CSCI 133. The students will design databases, create and modify the tables, create views, create stored procedures and create cursors. Prerequisite: CSCI 133. (S, O)

CSCI 230 Web Database I (ASP/PHP) (3)

This course teaches beginning and intermediate students the fundamentals of Web applications. This includes the concepts and theories of creating and building Web applications. Students will learn about database planning, designing and programming. To practice and demonstrate their learning of web application fundamentals, students will create programs using PHP. (F, O)

CSCI 231 Web Database II (ColdFusion) (3)

This course introduces the student to concepts of creating dynamic Websites by using ColdFusion Markup Language. The students will learn how to extract information from databases to provide current information about products and services. They will also learn how to add and change database records based on user selections, keep information up-to-date, and enhance their Web-based skills. (Prior knowledge base: Internet, HTML, Microsoft Access 2000, Netscape Navigator or Internet Explorer, and relational database concepts.) (S)

CSCI 263 Computer Science III (Java) (3)

This course is a continuation of CSCI 160 and CSCI 161. Programming concepts to be demonstrated and utilized within Java programs include: Graphics, Class Inheritance, Java Swing components, Layout Managers, Exception Handling, File input/out and Multithread animation. Prerequisites: CSCI 160, CSCI 161. (F, O)

CSCI 290 Programming Capstone (4)

This course is a summative course. Students taking this class will be required to combine skills gained from previous CIS/CSCI classes. This class will require the student to use the following languages and tools: SQL, Visual Basic.NET, ASP.NET, Java and HTML. Prerequisites: CSCI 160/161, CSCI 122/172, CSCI 133/183. (S)

CSCI 297 Internship (3-5)

The development of computer skills through work experience (440 hours of work in a computer center environment). Prerequisite: Department approval. (F, S, Su)

CSCI X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

CSCI 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(CT) CIVIL ENGINEERING AND SURVEYING TECHNOLOGY**CT 111 Civil Plans and Specifications (2 credits)**

This course is an introduction to basic fundamentals of civil engineering and surveying. Emphasis is placed on familiarization, reading and understanding highway/heavy plans, specifications and contracts. (F)

CT 113 Introduction to Civil Design Applications (3)

Introduction to Civil 3-D software focusing on the user interface of the software, points and point management, lines and curves, annotation, styles, surfaces, figures, and grading objects. During this course, the student will work on projects that will be used in future course work in courses such as Land Use Planning and Highway and Street Design. Software utilized will be Civil 3D. Prerequisite: CAD 120. (S)

CT 121 Surveying I (4)

Instruction and practice in the use of surveying instruments and equipment. Types of surveys, units of measure, elementary leveling, transit problems, basic building layout, field notes and benchmarks are included. Equipment utilized will be automatic levels, transits and total stations. (F)

- CT 122** **Surveying II (4)**
Advanced survey traverse and triangulation calculations and adjustments including error analysis, error distribution, subdivision of sections, contouring, route locations, grade determinations, earthwork measurements, map plotting, and coordinate geometry such as inverting between points and line intersections. The course will include fieldwork such as; traversing, direct and reverse angles, property corner searches, EDM calibration, construction location and grade staking, and building layouts with offset stakes. These labs will be done using Total Stations, Data Collectors, and GPS. Prerequisites: CT 121 and MATH 136. (S)
- CT 132** **Materials Testing/Quality Control (3)**
This course covers the field-testing procedures that are prominent in the highway/heavy construction projects and commercial construction projects. The materials consist of soils, aggregates, portland cement concrete, and asphalt. This course's main focus is on standardized testing procedure of the most commonly performed field testing procedures and includes background of the need for testing, conducting measurements, performing calculations, and recording results of testing. Results of the various reports will be explained so students will have the ability to interpret and understand the results of each report. (S)
- CT 142** **Construction Safety for Civil Technicians (1)**
This course will cover safety related to Civil Engineering and Surveying Technicians. Student will cover the content and have the opportunity to earn the OSHA 10-Hour certification. Most of the course will be lecture, video and group discussion. (F)
- CT 211** **Introduction to Geographic Information Systems (3)**
This course looks at Geographic Information Systems (GIS) and how they are used. Students will look at all aspects of GIS in terms of design, maintenance, analysis and industry usage. This class will teach students GIS concepts while applying those concepts to unit assignments using Esri and ArcGIS software. Students will apply all concepts to a final project. Prerequisite: CAD 120. (S)
- CT 212** **GIS Applications (3)**
This course will provide the general knowledge and applications a student will need to perform advanced analysis of data, data management and file transformation, data collection and compilation of spatial data, web mapping and data in the cloud. This course will be based on hands-on projects using Esri and ArcGIS software. Prerequisite: CT 211. (S)
- CT 214** **Highway and Street Design (3)**
This course covers the fundamentals of highway and street design. Included in the course are design safety considerations, design cost effectiveness, geometric features, construction plan development, print reading, and other highway design criteria. A construction design project will be developed during the course using Autodesk Civil 3D. Prerequisite: CT 215. (F)
- CT 215** **Land Use Planning and Development (3)**
This course will take an undeveloped parcel of land and develop it into a residential subdivision. The parcel boundary will be surveyed in an earlier surveying class using GPS, Total Stations and Data Collectors. The point files will be downloaded into the latest version of Civil 3-D for design and drafting use. Each student will create his or her own subdivision given the parcels boundary. In addition to the subdivision, the student will create contour maps, drainage plans, subdivision plats, etc. Prerequisite: CT 113. (F)
- CT 216** **Utility and Drainage Design (3)**
This course covers the fundamentals of water supply and distribution, sanitary sewage and collection methods, and storm water collection and management. Included in the course are topics on hydraulics, hydrology, water distribution and collection systems, and storm water management. Fundamentals in Civil 3D drainage design and analysis, as well as the creation of water, storm, and sanitary pipe networks. A final project will be rendered using Autodesk 3DSMax. Prerequisite or Corequisite: CT 214. (S)
- CT 221** **Surveying III (4)**
This course is comprised of field work, with emphasis on data collection procedures, and drawing with Civil 3-D, following standards set by ALTA. The students will collect boundary and topographic data utilizing the latest technology in equipment, such as Total Stations, GPS, Robotic Total Stations, etc. The students will take a project, divide it up between groups, perform survey work, merge data files and draw the entire project following ALTA Standards. Prerequisites: CT 113 and CT 122. (F)

- CT 222 Surveying IV (4)**
This course is comprised of field work and classroom work. The classroom work includes theoretical work in highway and railroad curve alignment, compound curves, reverse curves and vertical curves. The field work includes advanced GPS such as static networks, advanced alignment stakeout, infill surveys, and 3D scanning. A student project performed on their own following procedures taught for boundary research, data collection, data analysis and the creation of a certificate of survey for the project. Prerequisite: CT 221. (S)
- CT 223 Boundary Control and Legal Principles (3)**
The study of the laws and systems of land description and subdivision including: history of land ownership; terminology used in Real Property Law; methods of property transfer; abstracts of titles; types of titles; filing and recording deeds; legal principles of retracements; reversion of rights; riparian and littoral rights; mining claims; Public Land Survey System; and the preparation of metes and bounds descriptions and records of surveys. (F)
- CT 224 Research and Analysis (3)**
This class serves as a capstone class and will focus on land and real property ownership. Students will research original survey notes and plats, will gain an understanding of recording practices and will conduct research projects in the County Recorder's Office and NDRIN, research railroad and highway plats, monument records, easements, etc. Students will perform calculations of the restoration of lost corners by single and double proportion. (S)
- CT 261 Machine Control and Project Layout (2)**
This course will provide the skills necessary to set up control on a construction site, recreate 3d models for proper equipment operation, provide proper data for machine control, compute volumes of project and what is needed for quality control of a project. Students will learn equipment set-up and operations on a skidsteer with GPS guided attachment. Prerequisite: CT 216. (S)
- CT X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- CT 297 Cooperative Education (1-5)**
Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- CT 299 Special Topics (1-15)**
A course designed to meet special departmental needs.

(CULA) CULINARY ARTS

CULA 101 Food Preparation Laboratory (8 credits)

CULA 102 Food Preparation Laboratory (9)

Provides practical experience with the tools, equipment, materials and products used in food service and hospitality industry. Includes the properties and composition of food along with the basic knowledge of meats, produce, dairy products and staple groceries. Practical experience in the preparation of appetizers, salads, soups, sauces, meats, seafood, vegetables and farinaceous products. Practical experience in fabrication and preparation of beef, veal, pork, lamb, poultry and seafood along with the theory of service for these items. Practical experience in preparing and serving of food products is achieved through various banquets, special functions, daily preparation, fabrication and serving individuals and groups throughout both semesters. NOTE: The hospitality industry utilizes items that contain alcohol to flavor and flame food products that will be served to customers. These items include wine, flavored liquors, and spirits. The Culinary Arts Department, in an attempt to offer experiences and products that are as close to the work environment as possible, utilizes the same types of products in the preparation and service of food items prepared in the laboratory. Prerequisite for CULA 102: CULA 101, CULA 110. (CULA 101, F; CULA 102, S)

CULA 110

Sanitation and Safety (2)

A study of health and sanitation conditions as well as effective sanitary application measures, types of organisms and adulterates responsible for food contamination and spoilage. Special emphasis is placed on the conditions conducive to the transmittal and methods of preventing the growth of organisms and contaminating food products. The Active Managerial Control system of food protection is introduced. Personal hygiene and appearance is a significant part of sound sanitation practices and is stressed throughout the course. The National Restaurant Association's ServSafe® Certification Program is a nationally recognized food safety program, and the students are required to become ServSafe® Certified. Safety procedures and laws are reviewed and practiced in relationship to food and personal safety. Corequisite: CULA 101. (F)

CULA 119

Culinary Nutrition (2)

A study of basic nutrition, including how nutrients are utilized in the body. The requirements of the various nutrients in the body, and suggested daily nutritional needs are covered. A study of food products and their impact on the nutritional needs of the customer. The hospitality industry's role and responsibility in providing for the nutritional needs of the general public is emphasized. A computer analysis software program is used to evaluate diets throughout the course. Corequisite: CULA 101. (F)

CULA 120

Menu Planning (2)

Includes principles and practices related to preparing menus. Included are menu formats, preferences of the public, and trends within the industry. Menus are planned to meet nutritional needs and the desires of our ever-changing customers that are eating in various institutional and commercial food services. Students research, prepare and complete a menu project that is a large portion of the course. A nutrition computer analysis software program is used as a tool to aid in evaluating the menus in the course. Corequisites: CULA 102 and CULA 121. (S)

CULA 121

Food Cost and Portion Control (2)

The study of the principles involved when operating a sound food service operation combined with the study of the basic principles of effective food cost control and the procedures used by various operations. Practice in the application of these procedures and principles is achieved through various projects and specific units. Computer programs are introduced to aid in menu costing, inventory control and recipe sizing. Corequisite: CULA 120. (S)

CULA 201

Principles of Baking and Specialty Desserts (9)

A study of the basic baking ingredients and how they function in the baking process. Practical application in preparation of pies, cakes, yeast breads and pastries as they would be prepared in bakeries, hotels, and restaurant kitchens. A wide variety of pastry and dessert products are prepared by students and many are sold in a program market or are utilized in the campus Dining Services facilities. Skills in formula interpretation and conversion, accuracy in weighing of ingredients, proper mixing methods, and correct bake shop procedures are emphasized. Prerequisites: CULA 101 and CULA 102. (F)

CULA 202

Short Order Cookery (2)

Short order cooking emphasizes the concepts of mien en place, the establishment of rhythm, pace, and orderliness vital to any effective operation. This course focuses on training in fryer, flat grill, and broiler cookery through sandwich, pasta, and breakfast cookery. Hands-on short-order cookery experiences are available through a program restaurant operated by students. Corequisite: CULA 222. (F)

CULA 203

Gourmet Foods/Catering and Banquet Service (4)

This course is a continuation of food preparation techniques as taught in previous courses with opportunities for more specialized preparations. A variety of ethnic cuisines are explored, some of which are prepared and served in the campus restaurant. Food planning, purchasing and receiving procedures are studied. Catering projects and special functions serve as opportunities to practice these procedures along with food and labor costing. Advanced bake shop techniques are practiced. (See CULA 101 regarding the use of alcohol in food preparation). Prerequisites: CULA 101 and CULA 102. Corequisites: CULA 202 and CULA 221. (S)

CULA 220

Dining Room Service (1)

Students actively learn the importance of teamwork among kitchen personnel and techniques of service, menu preparation, suggestive selling, point-of-sale procedures, organizing and placing orders, techniques for bus station, and dining room setup. Emphasis is on personal appearance, customer relations, attitude, hygiene and safety. Practical experience in customer relations is provided in an actual dining room setting. Corequisite: CULA 221. (F)

- CULA 221 Principles of Restaurant Management (2)**
Basic principles of food service management emphasizing food and labor management and problem-solving. Menu development, costing and inventory are practiced utilizing computer software designed for food service use. This course is designed to build the skills necessary to operate a successful and profitable food service operation. Corequisite: CULA 220. Prerequisites: CULA 120 and CULA 121. (F)
- CULA 222 Restaurant Service and Production Management (6)**
Students execute the day-to-day operations of a restaurant in this course. Dining room service and restaurant production are explored through a combination of classroom and operations-based lab activities. Students will practice management skills such as sales forecasting, record of sales, inventory, point-of-sale operation, ordering, scheduling, customer service, meeting management, kitchen service, and employee training in an actual restaurant setting. Students and faculty practice a management style which emphasizes the team approach to attaining a common goal. (See CULA 101 regarding the use of alcohol in food preparation). Prerequisites: CULA 120 and CULA 221. Corequisites: CULA 202 and CULA 203. (S)
- CULA X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- CULA 297 Cooperative Education (1-5)**
Cooperative education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- CULA 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(DAST) DENTAL ASSISTING

(DAST 101, 102 and 103 are not part of the accredited dental assisting program and are for employees currently working in a dental office.)

- DAST 105 Office Practice and Management (1)**
A study of the business aspects of dentistry including resumes and interviewing, staff and patient management, office communication skills, inventory and recall systems, dental forms, business records, and legal and ethical aspects of dentistry. Prerequisite: Satisfactory completion of DAST 111. (S)
- DAST 106 Pre-Clinic for the Dental Assistant (1)**
This course provides basic information discussing the life-cycle of plaque, disease development and methods of controlling and preventing dental diseases. Prerequisite: Acceptance in the Dental Assisting program. Corequisite: DAST 111. (F)
- DAST 110 Oral Anatomy for the Dental Assistant (2)**
This course provides basic instruction in root and tooth anatomy, charting of human dentition, muscles, TMJ, occlusion, and oral embryology and histology. Clinical considerations of dental anatomy are stressed. Prerequisite: Acceptance into the Dental Assisting program. (F)
- DAST 111 Introduction to Chairside Assisting (3)**
This course is a study of dental team dynamics, infectious disease development and methods of control, didactic and laboratory instruction in basic chairside procedures, patient communication and restorative dentistry. The didactic part of this course will be online. Prerequisite: Acceptance into the Dental Assisting program. Hybrid. (F)
- DAST 115 Dental Radiology for the Dental Assistant (3)**
This course is designed to provide a fundamental knowledge of dental radiology. Emphasis will be placed on operator and patient safety, quality assurance, radiology principles and radiographic imaging and developing laboratory competency in basic radiology skills. The didactic part of this course will be online. Prerequisite: Acceptance into the Dental Assisting program. Hybrid. (F)
- DAST 120 Dental Assisting Expanded Functions (2)**
This course is an introduction to dental assisting expanded functions legal in this region. The course will focus on pre-clinical and clinical skills associated with coronal polishing, fluoride application, pit and fissure sealants, dental dam, excess cement/bonding removal, suture removal, periodontal dressing and orthodontic procedures. Prerequisite: Satisfactory completion of DAST 111. (S)

- DAST 132 Clinical Training I (3)**
A continuation of Introduction to Chairside Assisting (DAST 111). The course will focus on dental specialties, management of patients with special needs, medical emergencies, the history of dentistry, and encompasses educational and licensure requirements for dental professionals, and professionalism in the dental field. Prerequisite: Satisfactory completion of DAST 111. (S)
- DAST 132L Clinical Training I: Clinic (1)**
This course will provide the student with an opportunity to begin developing clinical skills by assisting in a variety of clinical assignments. The course will focus on assisting in the general and specialty dental offices and actively participating in the NDSCS Allied Dental Education Clinic. Prerequisite: Satisfactory completion of DAST 111. (S)
- DAST 133 Clinical Training II (5)**
A continuation of Clinical Training I (DAST 132). The primary focus of this course is to provide dental assisting experience in selected dental offices. A capstone mockboard project will be completed in this course. Prerequisite: Satisfactory completion of DAST 132L. (Su)
- DAST 142 Dental Materials for the Dental Assistant (3)**
A study of the characteristics, physical properties, manipulation, uses and care of dental materials. Includes laboratory experience in the manipulation and preparation of those materials commonly used in dental practice. Safety procedures relating to each material and procedure are incorporated. Prerequisite: Acceptance in the Dental Assisting program. (F)
- DAST 144 Biodental Science (2)**
This course also includes an introduction to microbiology, dental pharmacology, and nutrition, including its role in the maintenance of oral health. Prerequisite: Satisfactory completion of DAST 111. (S)
- DAST 151L Dental Assisting Simulation Lab I (1)**
This course is designed to provide immersive learning experiences for dental assisting students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for patient treatment. Topics may include vital signs, medical emergencies, patient assessment, radiology, dental materials, and general chairside techniques. Students will participate in classroom activities and outside assignments such as case studies, task analysis, self-assessment, problem solving skills, communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. Corequisite: DAST 111. (F)
- DAST 152L Dental Assisting Simulation Lab II (1)**
This course is designed to provide immersive learning experiences for dental assisting students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for patient treatment. Topics may include vital signs, medical emergencies, patient assessment, radiology, dental materials, and general chairside techniques. Students will participate in classroom activities and outside assignments such as case studies, task analysis, self-assessment, problem solving skills, communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. Corequisite: DAST 132L. (S)
- DAST X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- DAST 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(DCAT) CATERPILLAR DEALER SERVICE TECHNICIAN

- DCAT 110 Caterpillar Engine Fundamentals (4 credits)**
A lecture/lab course covering engine operating principles, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures and measurement fundamentals on Caterpillar engines. Caterpillar engines are used for lab disassembly and assembly.
- DCAT 111 Introduction to Caterpillar Service (2)**
This course introduces the student to the Caterpillar organization history and the different parts of the company. Instruction and lab experiences in the shop include safety, shop operation and a major emphasis on how to obtain information using CAT Specific Software Systems.

DCAT 112 Fundamentals of Hydraulics (3)

A lecture/lab course designed to teach the basic hydraulic fundamentals. Identification and function of the various components used in Caterpillar hydraulic systems will include vane pumps, gear pumps and piston pumps. Also covered is ISO hydraulic symbol identification and tracing oil flows used in Caterpillar hydraulic systems. Lab exercises include disassembly and assembly of Caterpillar hydraulic components.

DCAT 113 Caterpillar Fuel Systems (3)

A lecture/lab course introducing the student to fuel systems used on Caterpillar engines. Combustion chamber design, injectors and injection pumps are covered in this class. Also covered are diagnosing faults in fuel injection and combustion systems, and lab exercises include disassembly and assembly of fuel components used in Caterpillar fuel systems.

DCAT 114 Fundamentals of Electricity (3)

A lecture/lab course that introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair the complex electrical systems installed on Caterpillar machines. Included is the study of Ohm's law, series and parallel circuits, test instruments and various components found on Caterpillar equipment. The course does not teach specific machine systems.

DCAT 115 Air Conditioning Fundamentals (3)

A lecture, discussion and lab-type course covering the basic theory and operating principles of air-conditioning systems as they relate to Caterpillar equipment. Lab exercises consist of leak detecting, evacuation, reclaiming, charging, component repair and use of test equipment to diagnose and repair malfunctions. (Su)

DCAT 116 Fundamentals of Transmission and Torque Converters (3)

A lecture/lab course that covers the basic components, clutches, torque converters, and various transmissions used in Caterpillar equipment. This course also covers constant mesh, sliding gear, hydrostatic synchromesh, and power shift transmissions involving planetaries. At the completion of this course, the student will have working knowledge of basic power train theory. (Su)

DCAT 117 Machine Hydraulic Systems (3)

A lecture/lab course designed for inspecting, testing, servicing and diagnosing Caterpillar hydraulic systems and components. Students will conduct testing and adjusting procedures on Caterpillar equipment, utilizing Caterpillar service procedures and test equipment. (Su)

DCAT 150 Internship I (2)

This internship is to follow DCAT 111, DCAT 113, and DCAT 114. The student will maintain a daily log book. The intern dealer will provide a mentor for the student. During the course of the internship period an evaluation will be completed between the mentor, instructor, manager, and student. (F)

DCAT 151 Internship II (2)

This internship is to follow DCAT 110 and DCAT 112. The student will maintain a daily log book. The intern dealer will provide a mentor for the student. During the course of the internship period an evaluation will be completed between the mentor, instructor, manager, and student. (S)

DCAT 200 Undercarriage/Final Drives (3)

A lecture/lab course that introduces the student to undercarriage and drive systems used on the many different types of Caterpillar track machines. Also covered are final drives and braking systems used in Caterpillar track and wheel equipment. This course is a continuation of DCAT 116 Fundamentals of Transmissions and Torque Converters.

DCAT 201 Machine Electronic Systems (3)

A lecture/lab course that covers the electronic systems used on Caterpillar equipment. This course provides the background needed to diagnose and repair the electronics and computerized circuits found on Caterpillar equipment and engines. Basic electronic concepts, component function and system operation are covered. Caterpillar's procedures are taught to identify malfunctions and to test the system properly.

DCAT 202 Engine Performance (2)

A lecture/lab course that teaches the skills necessary to make CAT engines run at peak performance. The student will be provided with a thorough understanding of the necessary diagnostic skills required for troubleshooting Caterpillar engines and fuel systems. Emphasis will be placed upon knowledge and skills necessary to assure product reliability and performance.

DCAT 203

Diagnostic Testing (2)

This course introduces the student to machine problem identification using diagnostic tooling and reference material to properly diagnose and repair the complex systems installed on caterpillar machines. The course will concentrate on repair logic and applications using a troubleshooting and diagnosis process to solve machine faults in the power train, hydraulic system, and electrical system. The remainder of the course will focus on solving actual machine malfunctions, utilizing all diagnostic principles, tooling, and electronic troubleshooting applications.

DCAT 204

Machine Specific Systems (3)

This course is designed to expose students to different types of specialty equipment used for various operations, utilizing CAT equipment. Testing and adjustment of equipment will also be covered as per Caterpillar service procedures.

DCAT 250

Internship III (6)

This internship is to follow DCAT 115, DCAT 116, and DCAT 117. The student will maintain a daily log book. The intern dealers will provide a mentor for the student. During the course of the internship period an evaluation will be completed between the mentor, instructor, manager and student. (F)

DCAT 251

Internship IV (6)

This internship is to follow DCAT 200 and DCAT 201. The student will maintain a daily log book. The intern dealers will provide a mentor for the student. During the course of the internship period an evaluation will be completed between the mentor, instructor, manager and student. (S)

DCAT X92

Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

DCAT 299

Special Topics (1-9)

A course designed to meet special departmental needs.

(DHYG) DENTAL HYGIENE

DHYG 101

Pre-Clinic (1 credit)

This course provides basic information discussing the life cycle of plaque, disease development and methods of controlling and preventing dental diseases. Prerequisite: Acceptance into Dental Hygiene program. Corequisite: DHYG 101L. (F)

DHYG 101L

Pre-Clinic Lab (3)

This course provides basic instruction in fundamental principles of clinical dental hygiene instrumentation, prevention of disease transmission, implementation and evaluation procedures. Prerequisite: Acceptance into the Dental Hygiene program. (F)

DHYG 102

Clinic I (1)

This course provides instruction on fundamentals of medical histories/medical emergencies, principles of root morphology, ultrasonic scaler, air polisher, aspiration and tobacco cessation, professionalism and patient motivation. Prerequisites: DHYG 101, DHYG 101L. Corequisite: DHYG 102L. (S)

DHYG 102L

Clinic I Lab (4)

This course provides instruction and continuing information on fundamental principles of clinical dental hygiene. Clinical dental hygiene is that portion of the dental hygiene curriculum focused on developing the cognitive, affective and psychomotor skills necessary for delivery of preventive, educational and therapeutic services to the public. This comprehensive care involves an assessment of patient needs, dental hygiene assessment, planning for treatment and disease control, implementation of various clinical dental hygiene services and an evaluation of both patient and operator efforts and the results. Prerequisites: DHYG 101, DHYG 101L. Corequisite: DHYG 102. (S)

DHYG 103

Clinic II (1)

This course provides a continuation of fundamental principles of clinical dental hygiene. Areas of focus will be local anesthesia and pain control, trauma, caries risk assessment and prevention counseling, sealant application, child management, family abuse, and hypersensitivity. Prerequisite: DHYG 102. Corequisite: DHYG 103L. (Su)

- DHYG 103L Clinic II Lab (3)**
This is a continuation of DHYG 102L. This course provides instruction and continuing information on fundamental principles of clinical dental hygiene, periodontal assessment, periodontal treatment planning and case assessments. Clinical dental hygiene is that portion of the dental curriculum necessary for delivery of preventive, educational and therapeutic services to the public. This comprehensive care involves an assessment of patient needs, planning for treatment and disease control, implementation of various clinical dental hygiene services and an evaluation of both the patient and operator efforts and the results. Students participate in off-campus clinical experience with a diverse patient population. Prerequisite: DHYG 102L. Corequisite: DHYG 103. (Su)
- DHYG 110 Oral Anatomy (2)**
This course provides basic instruction in root and tooth anatomy, anatomy of the oral cavity, charting of human dentition, TMJ and occlusion. Clinical consideration of dental anatomy is stressed. Prerequisite: Acceptance into Dental Hygiene program. (F)
- DHYG 112 Oral Embryology and Histology (1)**
This course is a study of tissue morphology, embryonic development and histologic features of the structure of the oral cavity. Prerequisite: Acceptance into Dental Hygiene program. (F)
- DHYG 114 Dental Radiology (3)**
A survey of the nature and behavior of principles of x-ray production, radiology geometry, biological effects of radiation, radiation safety, quality assurance, techniques associated with exposure, processing, and mounting of radiographs and interpretation of dental radiographs. Recent concepts of dental imaging, digital radiographics, software, and state and federal regulations. Prerequisite: Acceptance into Dental Hygiene program. (F)
- DHYG 116 Dental Radiology Refresher Lab (1)**
This course is a supervised laboratory course that prepares the Allied Dental Student to competently produce intra- and extra-oral radiographs. Emphasis includes radiation safety, exposure, processing and mounting of radiographs, and digital radiography. Prerequisite: Acceptance into Dental Hygiene program. (F)
- DHYG 145 Periodontics I (1)**
A study of the etiology and clinical characteristics of periodontal diseases. Provides information on tissues of the periodontium, epidemiology, disease classifications, dental implants, causative factors, assessment and treatment planning. Prerequisite: Acceptance into Dental Hygiene program. (S)
- DHYG 151L Pre-Clinic Simulation Lab (1)**
This course is designed to provide immersive learning experiences for dental hygiene students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for clinical dental hygiene and patient treatment. Topics may include vital signs, medical emergencies, patient assessment, treatment planning, radiology, and instrumentation. Students will participate in classroom activities and outside assignments such as case studies, use of dental patient record keeping software, task analysis self-assessment, problem solving skills communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. (F)
- DHYG 152L Simulation Lab I (1)**
This course is designed to provide immersive learning experiences for dental hygiene students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for clinical dental hygiene and patient treatment. Topics may include vital signs, medical emergencies, patient assessment, treatment planning, radiology, and instrumentation. Students will participate in classroom activities and outside assignments such as case studies, use of dental patient record keeping software, task analysis self-assessment, problem solving skills communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. (S)

- DHYG 153L Simulation Lab II (1)**
This course is designed to provide immersive learning experiences for dental hygiene students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for clinical dental hygiene and patient treatment. Topics may include vital signs, medical emergencies, patient assessment, treatment planning, radiology, and instrumentation. Students will participate in classroom activities and outside assignments such as case studies, use of dental patient record keeping software, task analysis self-assessment, problem solving skills communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. (Su)
- DHYG 201 Clinic III (1)**
This course provides basic instruction, care and management of special needs patients.
Prerequisites: DHYG 103, DHYG 103L. Corequisite: DHYG 201L. (F)
- DHYG 201L Clinic III Lab (4)**
A continuation of DHYG 102L and DHYG 103L. This course provides instruction and continuing information on fundamental principles of dental hygiene. Clinical dental hygiene is that portion of the dental hygiene curriculum focused on developing the cognitive, affective and psychomotor skills necessary for delivery of preventive, educational and therapeutic services to the public. This comprehensive care involves an assessment of patient needs, planning for treatment and disease control, implementation of various clinical dental hygiene services, and an evaluation of both the patient and operator efforts and the results. Students participate in off-campus clinical experiences with a diverse patient population. Prerequisite: DHYG 103L. Corequisite: DHYG 201. (F)
- DHYG 202 Clinic IV (1)**
The course provides instruction in continuing information in fundamental principles of clinical dental hygiene. Specific topics to be discussed include: dental codes and insurance, dental specialties, dental injuries, nitrous oxide analgesia, total treatment planning and review and analysis of patient care through written and oral patient case assessments and presentations. Prerequisite: DHYG 201. Corequisite: DHYG 202L. (S)
- DHYG 202L Clinic IV Lab (4)**
Continuation of DHYG 102L, 103L and 201L. This course provides instruction on continuing information on fundamental principles of clinical dental hygiene, periodontal assessment, periodontal treatment planning and case assessments. Clinical dental hygiene is that portion of the dental curriculum necessary for delivery of preventive, educational and therapeutic services to the public. This comprehensive care involves an assessment of patient needs, planning for treatment and disease control, implementation of various clinical dental hygiene services and an evaluation of both the patient and operator efforts and the results. Additional topics to be discussed are rubber dam, periodontal dressing, and suture removal. Students participate in off-campus clinical experiences with a diverse patient population. Prerequisite: DHYG 201L. Corequisite: DHYG 202. (S)
- DHYG 203L Clinic Refresher/Board Prep Lab (3)**
A clinical application course designed to assist the student in the preparation for the clinical board exam or to refresh laboratory skills. The course will focus on basic clinical or lab skills. Prerequisite: Completion of AAS in Dental Hygiene. (Su)
- DHYG 205 Dental Pharmacology (2)**
This course provides a study of drugs with an emphasis on those drugs utilized in the practice of dentistry. The course describes the physical properties, major therapeutic classifications of medications, their therapeutic uses, and effects and adverse reactions. Prerequisite: Acceptance into the Dental Hygiene program. (S)
- DHYG 209 Head and Neck Anatomy (1)**
This course involves the study of the structure and function of the osteology, muscles, glands, blood supply, nerves, lymphatics, spread of disease of the head and neck as a whole, and TMJ and mandibular functions. Corequisite: DHYG 103L. (Su)
- DHYG 210 Local Anesthesia (1)**
A clinical application course designed to provide the student with the knowledge and clinical skills to administer safe and effective local anesthesia. In addition, alternate methods of pain control are included in this course. Prerequisite: DHYG 209. Corequisite: DHYG 103. (Su)
- DHYG 212 Oral Pathology (1)**
A study of fundamental disease processes involving the oral cavity and its related structures. The course includes the use of assessment and critical thinking skills in differentiating normal from abnormal conditions. Prerequisite: BIOL 213. Corequisite: DHYG 103L. (Su)

- DHYG 220 Community Dental Health (2)**
This course provides instruction in principles of dental public health, epidemiologic methods, statistical measurement and analysis using ADPIE for diverse target populations. It is designed to give the student knowledge in community professionalism, develop evidence-based decision-making skills and provide a basis for lifelong learning. Corequisite: DHYG 201L. (F)
- DHYG 242 Dental Materials (3)**
A study of the characteristics, physical properties, selection, manipulation, uses and care of dental materials. Includes laboratory experience in the manipulation and preparation of those materials commonly used in dental practice. Safety precautions relating to each material and procedure are incorporated. Prerequisite: Acceptance into Dental Hygiene program. (F)
- DHYG 243 Dental Jurisprudence (1)**
A study of the legal and ethical aspects of dental hygiene practice in relation to standards at the state and national level. In addition, this course includes writing a résumé, interviewing, recall systems, risk management and office communications. Corequisite: DHYG 202L. (S)
- DHYG 244 Dental Materials Lab Refresher (1)**
A laboratory experience of the characteristics, physical properties, manipulation, uses and care of dental materials. Includes laboratory experience in the manipulation and preparation of those materials commonly used in dental practice. Safety procedures relating to each material and procedure are incorporated. Prerequisite: Acceptance into the Dental Hygiene program. (F)
- DHYG 245 Periodontics II (1)**
This is a continuation of the study of periodontology. This course will include information on plaque control, advanced instrumentation, irrigation, surgical procedures, implants, emergencies, systemic factors, and treatment and maintenance for the periodontal patient. Prerequisite: DHYG 145. (F)
- DHYG 251L Simulation Lab III (1)**
This course is designed to provide immersive learning experiences for dental hygiene students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for clinical dental hygiene and patient treatment. Topics may include vital signs, medical emergencies, patient assessment, treatment planning, radiology, and instrumentation. Students will participate in classroom activities and outside assignments such as case studies, use of dental patient record keeping software, task analysis self-assessment, problem solving skills communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. (F)
- DHYG 252L Simulation Lab IV (1)**
This course is designed to provide immersive learning experiences for dental hygiene students. Course instruction will allow learners to practice and develop clinical skills by applying theoretical knowledge in hands-on scenarios that mimic various clinical situations that range in complexity and skill level. The course focus will be on developing skills for clinical dental hygiene and patient treatment. Topics may include vital signs, medical emergencies, patient assessment, treatment planning, radiology, and instrumentation. Students will participate in classroom activities and outside assignments such as case studies, use of dental patient record keeping software, task analysis self-assessment, problem solving skills communication, and skills evaluations. This course will include interprofessional communication, collaboration and interaction with other health care professionals and programs. (S)
- DHYG X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- DHYG 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(DTEC) DIESEL TECHNOLOGY

- DTEC 109 Air Conditioning for Diesel Technology (2 credits)**
A lecture, discussion and lab-type course covering the design and principles of operations of various air conditioning systems, including agriculture, construction and trucking equipment. Work in lab consists of leak detecting, evacuation, reclaiming, charging, component comprehension, electrical systems and troubleshooting for various units. (F, S)

- DTEC 110 Diesel Equipment Maintenance (3)**
A theory and lab course covering general maintenance and service procedures performed on diesel powered equipment. This course includes instructions for safe operation of various types of diesel-powered equipment for the technician to perform general service procedures required by the manufacturer. Proper use of shop tools, equipment, safety techniques and industry standards will be covered. This is a 3 credit 8-week course, 80-hour class. (F, S)
- DTEC 115 Introduction to Light and Medium Duty Engines (4)**
A theory and lab course covering rebuilding of heavy-duty gas and light- and medium-duty diesel engines. Students will troubleshoot, disassemble, rebuild and assemble an engine during this class. Learning modules include: measurement fundamentals, basic engine operating principals, cylinder and piston service, cylinder head rebuilding and valve reconditioning, crankshaft and bearing service, and lubrication and cooling systems. Engines designed for the use of alternative fuels such as LPG and CNG are also covered. This class is a prerequisite for DTEC 215, CIH 215 and JDAT 215.
- DTEC 125 Introduction to Heavy Duty Drive Systems (3)**
A lecture and lab type course which provides the student with theory and hands-on operation of shop safety, operation and repair of bearings-seals, heavy duty steer axles, drive axles, medium and heavy-duty truck suspension and wheel end assemblies. This is an 8-week course and an 80-hour class. This class is a prerequisite for DTEC 225, CIH, 225 and KMTS 225. (F, S)
- DTEC 135 Medium/Heavy Duty Brake Systems (2)**
A theory and lab course covering the operation and repair of air and hydraulic brake systems used in light, medium, heavy duty trucks and diesel-powered equipment. This course covers all brake systems, diagnosis and repair of power, manual, anti-lock brakes and parking brakes. DOT inspection procedures are also covered in this class. This is an 8-week course and a 64-hour class.
- DTEC 155 Electricity for Diesel Technology (4)**
An introductory lab/theory class in electrical fundamentals. A practical approach to the study of electricity including Ohm's Law, power, series and parallel circuits, direct and alternating current, with strong emphasis on diagrams and troubleshooting. This class is designed for technicians in the Diesel Technology field. This class is a prerequisite for DTEC 255, CIH 255, and KMTS 255. (F, S)
- DTEC 164 Introduction to Mobile Hydraulics (4)**
This course is a study of hydraulic system fundamentals and various components used in a typical mobile hydraulic system. Component disassembly and reassembly will take place to aid in the understanding of component and system operation. Various components will be tested on a test bench to help the student understand how the components contribute to the overall operation of the system and will be used to evaluate the students' performance. Experiments will be performed on lab equipment to aid in the understanding of mobile hydraulic principles. This class is a prerequisite for DTEC 265, CIH 265, and KMTS 265.
- DTEC 185 Diesel Fuel Injection Systems (3)**
This course introduces students to diesel fuel injection systems. The students will study the design and operation of a variety of diesel fuel systems. Students will be required to inspect, disassemble, assemble, performance test and adjust fuels system components. This is an 8-week course and an 80-hour class. (F, S)
- DTEC 215 Heavy Duty Diesel Engines (7)**
A lecture and lab type course of current heavy-duty diesel engines. Students gain knowledge in operation, troubleshooting, rebuilding and tuning all types of diesel engines. Work includes disassembly, assembly, injection timing and adjustment common to diesel engines used in the agricultural, transportation and industrial industries. Prerequisite: DTEC 115.
- DTEC 225 Heavy Duty Drive Systems (7)**
A lecture and lab type course which provides the student with theory and hands-on operation and repair of the latest types of heavy-duty drive systems that the agricultural, transportation and industrial industries use on their equipment. Prerequisite: DTEC 125. (F, S)
- DTEC 255 Heavy Duty Chassis Electrical Systems (7)**
A lecture and lab type course covering the theory of operation, repair and diagnostic procedures used on heavy-duty truck and tractor electrical systems, electronic engines and transmissions. This is a half-semester course. Prerequisite: DTEC 155. (F, S)

- DTEC 265 Mobile Hydraulic Systems Diagnostics and Repair (7)**
DTEC 265 is a lab/lecture course covering the service diagnostics and repair of the hydraulic functions on agricultural and industrial equipment. Open center, closed center, and closed center load sensing systems are covered as well as steering, hydrostatic drives, 3-point hitches, and hydraulic functions of today's equipment. Prerequisite: DTEC 164.
- DTEC X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- DTEC 297 Cooperative Education for Diesel Technology (1-5)**
The Cooperative Education program for Diesel Technology allows the students to apply classroom study with a paid work experience related to their fields of study at a department approved work site. It is recommended that the student has completed one year of Diesel Technology. (Su)
- DTEC 299 Special Topics (1-15)**
A course designed to meet special departmental needs.

(ECAL) ELECTRICAL TECHNOLOGY

- ECAL 100 Introduction to Electricity (3 credits)**
An introductory lecture class in electrical fundamentals. A practical approach to the study of electricity including Ohm's law, power, series and parallel circuits, direct and alternating current, with strong emphasis on diagrams and troubleshooting. (F, S)
- ECAL 101 Direct Current (DC) Fundamentals (5)**
This course examines the basic components used in electrical circuits. The course stresses the appropriate terminology, units and uses of the various components in DC (direct current) environment only. Also, circuit analysis is stressed with circuits connected in series, parallel and series/parallel configurations. (F)
- ECAL 102 Alternating Current (AC) Fundamentals (5)**
This course examines the basic components used in electrical circuits. The course stresses the appropriate terminology, units and uses of the various components in an AC (alternating current) environment. Also, circuits are analyzed with components in series, parallel, and series/parallel. Prerequisites: ECAL 101, MATH 136. (S)
- ECAL 103 Electrical Code Study (4)**
An in-depth study of the National Electrical Code Chapters 1, 2, 3 and portions of Chapter 4. Wiring methods and materials, and equipment for general use are covered. State (ND and MN) electrical codes are also covered. (F)
- ECAL 105 Electrical Safety I and NFPA 70E (1)**
This course is a study of electrical safety and the rules for safe work practices set forth by OSHA and NFPA 70E, the standard for electrical safety in the workplace. In this course you will look at procedures to work safely around electrical systems and how to create an electrically safe work environment. (F)
- ECAL 111 Electric Meters and Motors Lab (3)**
A practical, hands-on course using various electrical testing equipment to troubleshoot and test electric motors, components, and wiring systems. A study of single and three phase AC motors, their construction features and operating characteristic's. This lecture/lab class emphasizes electric motor terminology, identification of motor types, enclosures, mounts, motor selection, connections, maintenance, testing and troubleshooting. Students are also introduced to motor loads, protection, controls, and devices used to connect motors to their loads such as pulleys, v-belts, gearboxes, and couplings. (F, S)
- ECAL 133 Basic Wiring Lab (3)**
This is an introduction to basic electricity, basic wiring methods, and materials and tools used in the electrical industry. Actual circuit layout and installation is done according to the rules of the National Electrical Code and other applicable state and local codes. (F, S)
- ECAL 137 Electrical Drafting (2)**
This is a lecture and laboratory course dealing with the application of Computer Aided Drafting (CAD), using AutoCAD drafting software, as well as some reading and interpretation of blueprints from an electrician's perspective. (F, S)

- ECAL 197 Cooperative Education (1-5)**
Cooperative education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- ECAL 201 Three-Phase Electrical Systems (5)**
This course is a study of three-phase alternating current circuits, electrical instruments and the theory, operation and connection of transformers. Students will study the theory, operation and connection of three-phase wye and delta circuits and the relationship of voltage, current and power in these circuits. Students will also study the harmonics of the effects of the building electrical systems. Prerequisite: ECAL 102. (F)
- ECAL 203 Advanced Electrical Code Study (3)**
This course is a continuation of ECAL 103. Chapters 4 through 8 of the National Electrical Code (NEC) are studied in this course. There is special emphasis on hazardous locations and applications. Prerequisite: ECAL 103. (S)
- ECAL 204 Electrical Planning and Estimating (4)**
This course is a culmination of all the student's previous learning experiences. It incorporates code classes, lighting and design, AutoCAD, wiring labs and theory classes. The course is designed to teach the student how to read and understand a set of prints in conjunction with a specification book, familiarize the student with the various materials, an emphasis on layout procedures, labor, and two different estimating techniques to develop a reasonable "bid" price for various projects. (S)
- ECAL 205 Electrical Design and Lighting (3)**
A class discussion course dealing with electrical material and equipment sizing, layout and application, applicable wiring codes, regulations and rules, and characteristics of common electrical distribution systems as used in industrial plants and commercial building locations. Included is a study of short circuit current, current limiting and coordination, power factor correction and electrical rates. This course includes the study of modern illumination principles, calculation procedures and equipment for lighting installations. (S)
- ECAL 211 AC Measurements (4)**
This lecture/lab course consists of a series of experiments to investigate the characteristics of single-phase and three-phase electrical circuits. The connections and testing of transformers in both single-phase and three-phase configurations are stressed. Students also learn the operation of three phase motors from conventional sources. Corequisite: ECAL 201. (F)
- ECAL 224 Automated Industrial Controls Lab (5)**
This is a lecture/lab course that will cover digital electronics, basic pneumatic and hydraulic principles, and basic robot operations and programming. The final lab projects will include principles from all elements covered. (S)
- ECAL 233 Commercial Wiring Laboratory (3)**
This course will introduce the student to many different wiring methods and equipment used in the electrical industry in commercial and industrial electrical environments. Provide examples of tools, materials and procedures utilized by electricians in the fast paced and rapidly changing electrical field of today. Prerequisites: ECAL 103, ECAL 133. Corequisite: ECAL 203. (S)
- ECAL 237 House Wiring Rough-In (1)**
This course will introduce the student to the logistics and procedures involved with wiring of a residential dwelling. (F)
- ECAL 238 House Wiring Trim-Out (1)**
This course will introduce the student to the logistics and procedures involved with the proper trim-out of a residential dwelling. (S)
- ECAL 241 Basic Motor Controls Lab (3)**
A lecture and laboratory class oriented to the study of electromechanical control system concepts. Experiments are designed to illustrate the principles, applications, connection and installation procedures of electrical controllers. Special emphasis is placed on the analysis and development of motor control circuits. (F, S)

- ECAL 242 **Advanced Drives/Lab (2)****
 This is a lecture and laboratory course dealing with the theory, construction, application, installation, and programming of Variable Frequency Drive (VFD) motor controllers. VFDs are an increasingly common method of controlling motors and their related processes. Students will program a variety of controllers to learn the limitations and capabilities of each device. We will also be configuring programmable controllers to communicate with the drives, as well as communications with Human Machine Interfaces (HMIs). This course is a two-credit class that will meet for one hour four times per week. (S)
- ECAL 243 **Programmable Logic Controllers Lab (3)****
 This is a lecture and laboratory course dealing with the theory, construction, application, installation and programming of microprocessor-based programmable controllers. Logic networks solving typical industrial control problems are developed and programmed into a variety of controllers to learn the limitation and capabilities of each machine. (F, S)
- ECAL 245 **Medium and High Voltage (1)****
 This lecture/lab course covers medium- and high-voltage electrical theory, conductors, insulators, overcurrent devices, testing, termination, safety precautions and safety equipment. (F, S)
- ECAL 246 **Alarm, Communications and Data Systems (3)****
 Installation and maintenance of alarms, communications and data is considered a specialty branch of electrical work. In this course you will understand the unique terminology associated with these systems, describe the relationship between these systems and life safety by various codes and standards that affect both commercial and residential buildings. The course will describe the characteristics and functions of various alarm system components, explain the different types of circuitry (hard wired and wireless) that connects these components and describes the theory behind conventional, addressable and analog systems to better understand how these systems function. The lab portion of this class includes handling and splicing of fiber optics, networking, structured wiring, data, satellite communications, all types of alarms (fire, security and community warning-tornado-civil defense) and video surveillance/recording. (These technology/revolutionary-based systems are subject to rapid change and every effort will be made to reflect any changes in technology. (F)
- ECAL 253 **Introduction to Instrumentation Lab (3)****
 This course introduces the basic concepts of instrumentation and process control. The focus of the course is on negative feedback proportional control loops and their application in industry. This course will focus on the understanding of those systems used in the process control industries. (S)
- ECAL 254 **Instrumentation and Control Systems (4)****
 This lecture/lab course covers the concepts of process control. Concepts include the terminology and functions of the devices used in control systems. The primary focus of this course will be on the role the controller plays in a process. (S)
- ECAL 255 **Process Measurement and Control Valves (4)****
 This lab/lecture course deals with the operation and function of devices used to measure the process output of a control loop. Control valves and actuators are also included. Lab time is spent on experimentation and calibration of the devices. (S)
- ECAL 261 **HVAC and Building Systems (2)****
 This is a lecture/lab course which examines the basic components used in refrigeration and air conditioning systems and their electrical circuits. The course focuses on identifying whether the system has failed due to an electrical problem or a mechanical problem. The building envelope is studied to verify proper size equipment or to use electric heat. Energy usage/efficiency will be discussed to maximize savings where possible. Lastly, building usage and scheduling will be studied where systems allow further control of the system to reap energy savings (introduction of building automation). (F)
- ECAL 263 **Distributed Electrical Systems (3)****
 This course is a lecture/discussion course which examines today's need for more flexible energy systems. The basic components used in distributed generation systems will be discussed as well as the various types (solar, wind, engine drive, etc.). The NEC and wiring perspectives of various systems will also be studied. The students will be required to do research into modern systems as well as consult various industry resources for additional information. (F)
- ECAL X92 **Experimental Course (1-9)****
 A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

ECAL 297

Cooperative Education (1-5)

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their field of study. It is required that a student has successfully completed one year of academic study.

ECAL 299

Special Topics (1-9)

A course designed to meet special departmental needs.

(ECON) ECONOMICS

ECON 105

Elements of Economics (3 credits)

An introductory survey of basic economic principles including supply and demand, national income analysis, business cycles, money and the monetary system, and an analysis of competitive and imperfect market structures; as well as a review of selected contemporary economic issues. (F, O) ND:SS

ECON 201

Principles of Microeconomics (3)

Nature, method, and scope of economic analysis; economic scarcity, resources, specialization of labor; supply-demand analysis; production and cost analysis; product and resource market structures, distribution of income; international trade. (F, S) ND:SS

ECON 202

Principles of Macroeconomics (3)

Aggregate income and employment analysis; business cycles, unemployment, inflation and economic growth; fiscal policy; money and monetary policy; the U.S. economy and the world economy. (S) ND:SS

ECON X92

Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

ECON 299

Special Topics (1-9)

A course designed to meet special departmental needs.

(EMS) EMERGENCY MEDICAL SERVICES

EMS 100

Emergency Medical Responder (EMR) (2 credits)

Students will learn basic knowledge and skills to help an injured or ill person until professional rescuers arrive. This course focuses on the core skills, knowledge and protocols within the EMR (Emergency Medical Responder) scope of practice as defined by the U.S. Department of Transportation. Upon successful course completion the student will be eligible to apply for licensure with the State of North Dakota as an EMR. Topics covered, but not limited to, include: BLS for healthcare provider (CPR); basic first aid; and when and how to identify, assess, manage, and treat various types of trauma and medical emergencies. (F, S, Su)

EMS 101

Introduction into EMS (2)

This course provides students with the basic knowledge of Emergency Medical Services (EMS). Students will learn about the history of EMS, EMS systems and operations, legal and ethical aspects of EMS, documentation, and disaster and initial hazmat response in EMS. (F, S, Su)

EMS 110

EMT Fundamentals (2)

This course prepares the student for the work of providing care in the emergency medical field as an Emergency Medical Technician (EMT). This course will enable the student to identify, assess, manage, and treat various types of pre-hospital traumatic and medical emergencies. The student will learn to perform various aspects of emergency medical care and ambulance operations under the scope of practice set forward by the U.S. Department of Transportation. (F, S, Su)

EMS 110L

EMT Fundamentals Lab (1)

The purpose of this EMT laboratory is to discuss, perform and relate the concepts taught in the EMT fundamentals course. This will be done in group discussions and demonstrations, and in individual scenarios. This hands-on course will teach and test the physical and mental skills necessary for the appropriate assessment and treatment of patients in small groups and/or individually. Students should be prepared for rigorous questioning and skill demonstration in front of the instructor and their peers. (F, S, Su)

EMS 110P

EMT Practicum (1)

This course introduces the EMT student to EMS operations and patient care. During this course, students will have the opportunity to work with various health care industry entities to assist in the care of hospital and prehospital/ambulance patients, under the direction of a preceptor. (F, S, Su)

- EMS 180 Pharmacology I (1)**
This is part one of a two-part series that prepares the students for the objectives associated with pharmacology in the pre-hospital setting. Students will learn the pathophysiological effects of drugs on the body and medications associated. (F, S)
- EMS 203 Pharmacology II (2)**
This is the second of a two-part course that prepares the students for the objectives associated with pharmacology in the pre-hospital setting. Students will learn advanced pathophysiological effects of drugs on the body and medications associated with advanced treatment modalities. (F)
- EMS 204 Medical Emergencies I (2)**
This course is the first of a two-course series that prepares the paramedic to identify, assess, manage, and treat various medical emergencies.
- EMS 205 Medical Emergencies II (2)**
This course is the second course of a two-course series that prepares the paramedic to identify, assess, manage, and treat various medical emergencies. (S)
- EMS 207 Special Populations in EMS (2)**
This course prepares the paramedic student to identify, assess, manage, and treat age related emergencies and other special patient population challenges. This course also introduces the paramedic student to the breadth of teamwork with fellow healthcare, first responder and public safety entities. (S)
- EMS 215 Cardiology (4)**
This course prepares the paramedic student to identify single and multi-lead cardiac rhythms and treat those rhythms considered to be life-threatening with electrical and pharmacological therapy. Skills include, but are not limited to assessment, defibrillation, cardioversion and cardiac rhythm interpretation. (F)
- EMS 217 Airway and Respiratory Management (3)**
The course introduces the paramedic student to basic and advanced airway management concepts. Students will understand the intricacies of airway assessment, airway adjuncts, bag-valve-mask, Combitube, EOA, LMA, and intubation. (F)
- EMS 218 Clinical Decision-Making in EMS (1)**
Throughout this course students will interact through patient case studies including classroom discussion on the patient assessment, devising differential diagnosis, and potential care plans. Integration of current and previous course lessons and objectives will be included in the overall management of patients presented in the case studies. (S)
- EMS 219 Trauma in EMS (3)**
This course examines trauma related pathophysiology, assessment and patient management. Students will incorporate assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment strategy for the acutely injured patient. (S)
- EMS 231 Paramedic Lab (2)**
The purpose of the laboratory is to discuss, perform and relate the concepts taught in the paramedic didactic courses. This will be done in group discussion, group and individual scenarios. This is a hands-on course where the physical and mental skills necessary for the appropriate assessment and treatment of patients will be taught and tested in small groups and/or individually. Students should be prepared for rigorous questioning and skill demonstration in front of the instructor and their peers. (S)
- EMS 232 Paramedic Simulation Lab (2)**
The purpose of the laboratory is to discuss, perform and relate the concepts taught in the paramedic didactic courses. This will be done in group discussion, group and individual scenarios. This is a hands-on course where the physical and mental skills necessary for the appropriate assessment and treatment of patients will be taught and tested in small groups and/or individually. Students should be prepared for rigorous questioning and skill demonstration in front of the instructor and their peers. (F)
- EMS 233 Advanced Life Support Lab (3)**
This is a hands-on course where the physical and mental skills necessary for the appropriate assessment and treatment of patients will be taught and tested in small groups and/or individually. Students should be prepared for rigorous questioning and skill demonstration in front of the instructor and their peers. (Su)

EMS 234**Paramedic Assessment Lab (1)**

The simulation lab is designed to present paramedic students with clinical and field simulation, in a controlled setting, to engage the student and evaluate their skills development, knowledge base and critical thinking skills. This course allows students the opportunity to learn in a risk-free environment, and to improve competence, practice mastery of their patient assessment and management and advance their efficiency. This is a hands-on course where the physical and mental skills necessary for the appropriate assessment and treatment of patients will be taught and tested in small groups and/or individually. Students will receive the opportunity for self-reflection and should be prepared for rigorous questioning and skill demonstration in front of the instructor and their peers to promote an enhanced practicum experience. (F)

EMS 241**Advanced Provider Practicum I (2)**

This course will give the student the opportunity to learn and expose the student to real life EMS experiences (BLS and ALS). This course will expose the student to ALS skills, assessments, and other ALS knowledge as well as continue creating a solid BLS foundation. The student will function under the direction of a preceptor. (F, S)

EMS 242**Advanced Provider Practicum II (4)**

This course will give the student the opportunity to apply the material learned in the didactic courses to real life EMS experiences. This course will place emphasis on ALS assessments, ALS skills, ALS knowledge as well as continue creating a solid BLS and ALS foundation. The student will function under the direction of a preceptor. (S)

EMS 243**Capstone in Paramedicine (3)**

This course determines the preparedness of the student for work in the paramedicine field. All previous coursework will be used by the student to successfully lead an ambulance crew through all patient encounters. Students completing this course will be entry-level competent paramedics. The student will function under the direction of a preceptor and will input patient contact information into various data systems. (Su)

EMS 255**Leadership in EMS (2)**

Paramedics work in positions in which they must utilize leadership skills. This course will introduce students to entry-level leadership skills, including working within an EMS culture, with other agencies and with outside organizations or regulators. Students will learn how to become a positive influence in a growing industry. (S)

EMS X92**Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

EMS 299**Special Topics (1-15)**

A course designed to meet special departmental needs.

(ENGL) ENGLISH**ENGL 105****Technical Communications (3 credits)**

This course concentrates on business correspondence, informal report writing, technical communication, job preparation, and oral presentation. Prerequisite: Placement test. (F, S, Su-Online)

ENGL 110**College Composition I (3)**

An introduction to college-level writing as a process of drafting, revising and editing. This course emphasizes critical reading, writing, thinking and research skills as students write for a variety of audiences and purposes. Students will receive guided instruction in the writing process as they begin writing based on personal experiences. An introduction to proper crediting of source material and research will occur toward the end of the course. Prerequisite: Placement test. (F, S, Su, O) ND:ENGL

ENGL 120**College Composition II (3)**

Continued practice of college-level writing process and strategies, building on skills learned in English 110. This course refines critical reading, writing, thinking and research skills. Students will practice summary and analysis of texts, as well as synthesizing information from primary and secondary sources. Writing assignments will emphasize logical argument, persuasion and collaboration. Major assignments will require proper crediting of source material and research. Prerequisite: English 110. (F, S, Su, O) ND:ENGL

ENGL 125**Introduction to Professional Writing (3)**

Advanced practice in college-level writing which emphasizes writing and research in professional settings. Prerequisite: English 110. (F-Online) ND:ENGL

- ENGL 207** **Language Studies: Conversational English and American Studies (3)**
Assistance in improving English language skills, including listening, speaking, reading and writing for non-native speakers. Also meant to introduce non-native speakers to the culture of the United States through literature, history, music and art. Most important will be the development of spoken English language skills. (As needed)
- ENGL 211** **Introduction to Creative Writing (3)**
A flexible, introductory workshop course that will introduce students to various genres of creative writing including fiction, poetry, drama and many of the genres found in creative nonfiction. This course concentrates on the techniques, the process and the products valuable to writers of creative writing by providing creative literary works for students to read, respond to, and discuss. (S-Online) ND:HUM
- ENGL 220** **Introduction to Literature (3)**
Introduction to Literature studies conventions and characteristics of three genres of literature (fiction, poetry, and drama) and is particularly recommended for students new to the study of literature. Students study terminology and literary concepts in order to interpret, analyze, and critically evaluate selections from stories, poems, and plays. (As needed) ND:HUM
- ENGL 232** **Mythology (3)**
The study of representative myths, legends, and folklore from various cultures with emphasis upon the literary aspects of myth. Standard Greek and Roman myths will be covered as well as significant myths from other cultures. (S) ND:HUM
- ENGL 238** **Children's Literature (3)**
This course is an introductory survey of literature for children from infancy through puberty, with emphasis on the analysis of literary characteristics which determine age-appropriateness. Through the readings of picture books, poetry, folklore, fantasy, realistic fiction, biography, and informational books, students will gain an awareness of the history, genre, and theme in children's literature. In their reading, students will also develop a familiarity with important authors and illustrators as they confront such issues as racism, sexism, multiculturalism, and censorship. (S) ND:HUM
- ENGL 240** **World Literature Masterpieces (3)**
World Literature explores the literature of varied cultures from ancient to modern times. Readings include selected works from many cultures, genres and epochs including selections from India, Asia, Africa, Europe and the Americas. (As needed) ND:HUM
- ENGL X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- ENGL 299** **Special Topics (1-9)**
A course designed to meet special departmental needs.

(ENGR) ENGINEERING

- ENGR 212** **Fundamentals of Visual Communications (3 credits)**
Orientation of job functions in an engineering department along with learning tools of the engineering and technical management professions. Emphasis on hand sketching, print reading, drafting standards, engineering changes and revision documentation for manufacturing and industry. Create visual communications of designs for manufacturing. Understand all phases of design and how to develop three dimensional models using SolidWorks. Emphasis on sketching, parametric modeling of parts, assemblies and critical dimensioning of orthographic drawings for manufacturing and industry. (F-even years)
- ENGR X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- ENGR 299** **Special Topics (1-9)**
A course designed to meet special departmental needs.

(FYE) FIRST YEAR EXPERIENCE

FYE 101 Science of Success (1 credit)

This is a practical one-credit course that provides the tools and skills necessary to get a strong start with the transition for new students at NDSCS. This course will introduce students to campus resources, policies and procedures and cover topics such as time management, study skills, goal setting, wellness, financial literacy and professional development. (F, S, O)

(GEOL) GEOLOGY

GEOL X92 Experimental Course (1-9 credits)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

(HIST) HISTORY

HIST 101 Western Civilization I (3 credits)

An introductory survey of early Western civilization. This course examines the ancient beginnings of civilization with emphasis given to the great civilizations of the Middle East and Southern Europe. The study includes the Byzantine Empire and the development of Western Europe, culminating with the Renaissance. (F) ND:HIST

HIST 102 Western Civilization II (3)

An introductory survey of recent Western civilization. The Reformation and Modern Europe are discussed with emphasis on the religious changes, the growth of nation-states, the Napoleonic era, the Industrial Revolution and World War I and II. (S, O) ND:HIST

HIST 103 United States History to 1877 (3)

A survey of U.S. History to 1877 examining the discovery, colonization and establishment of the United States. This course emphasizes the reasons for European immigration and their effects on the development of the United States. Changes in the American government, the Westward movement, land acquisitions and slavery are presented. The Civil War and Reconstruction receive major coverage. (F, O) ND:HIST

HIST 104 United States History Since 1877 (3)

A survey of United States history since 1877. An introduction of America's entry into world politics and its prominence in the Industrial Revolution with a study of progressivism and political change. America's entry into World War I and its outcome also are examined as well as the New Era, the 1920s, and the events which led to economic disaster. FDR's presidency, the Depression and World War II are explored. The Cold War, the complacent years of Truman and Eisenhower, the 1960s, Vietnam and Watergate are discussed. The Reagan and Bush administrations and the new order in Eastern Europe are also presented. (S) ND:HIST

HIST 207 United States and Current World Affairs (3)

Study of the nature of contemporary political communities around the world, with emphasis on the United States. A special focus of the course is the examination of global and multicultural issues related to the problems of specific world communities. Cross reference: POLS 103. (F) ND:HIST

HIST 220 North Dakota History (3)

A survey of North Dakota history including the government and its people. Emphasis is given to geography, the early history of the state prior to statehood and modern history following statehood to the present. (S) ND:HIST

HIST X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

HIST 299A Special Topics in History (1-3)

Topics in United States history and/or European history to be offered on the basis of student interest. Prerequisite: HIST 104 or HIST 102 or instructor consent. (As needed)

HIST 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(HIT) HEALTH INFORMATION

- HIT 176 Introduction to Health Information (4 credits)**
Introduction to health record practice and the health information profession. Students will study health record, functions, content, documentation, purposes, and users of health information including secondary data sources and data sets. Students will be introduced to legal and ethical issues, including data privacy, confidentiality, and security standards. Students will explore ethical issues in health information management. Students will use virtual lab software applications. Web-based instruction. Prerequisites and/or Corequisites: None. (F, O)
- HIT 180 Pathopharmacology (3)**
Emphasis on the specific disease processes affecting the human body systems via an integrative approach to specific disease entities, including the study of causes, diagnosis, and treatment of disease. The study of drug actions, including the absorption, distribution, metabolism, and excretion of drugs by the body. Emphasis on most commonly prescribed drugs, the drug formulary, and on matching drugs to common conditions and correlating lab findings. Web-based instruction. Prerequisite: BOTE 171. (S, O)
- HIT 181 Healthcare Delivery Systems (3)**
A study of health information management (HIM) in various healthcare settings. Includes an overview of each healthcare setting and specific documentation requirements, regulatory issues, reimbursement, information management, quality assessment, utilization management, risk management/legal issues, the role of the HIM professional and future trends related to each setting. Prerequisite: HIT 176. (S, O)
- HIT 184 Basic Diagnosis Coding (3)**
An introduction to the basic coding guidelines using the current coding classification system. Students will practice the application of diagnosis and procedure codes, validating coding accuracy using clinical information found in health records. Current regulations, established guidelines, and ethical principles will be studied and applied to coding cases. Encoder systems and software are used. Web-based instruction. Prerequisites: BOTE 171, BIOL, 220. Corequisite: HIT 180, BIOL 221. (S, O)
- HIT 185 Basic Procedure Coding (3)**
An introduction to the basic coding guidelines of the Current Procedural Terminology (CPT) nomenclature. Students will practice the application of CPT/HCPCS codes, validating coding accuracy using clinical information found in the health record. Current regulations, established guidelines, and ethical principles will be studied and applied to coding cases. Encoder systems, computer assisted coding, and software are used. Web-based instruction. Prerequisites: BOTE 171 or BIOL 220. Corequisites: HIT 180, BIOL 221. (S, O)
- HIT 197 Professional Practice I (2)**
A virtual professional practice experience following completion of all first year courses. Provides reinforcement and application of concepts studied in the first year, with hands-on experiences and simulations using actual health records and software applications. Web-based instruction. Prerequisites: All first year HIT program courses. (Su, O)
- HIT 197C Practicum (2)**
A virtual professional practice experience emphasizing practice with clinical code assignment using a variety of health record types/encounters. Focus on acceptable coding practices, clinical code assignment, and billing methodologies. Emphasis on building speed and accuracy. Encoder technology including coding reference software applications will be used. CCA examination preparation and career exploration will also be covered. Anticipated 40 hours of coding and additional time spent on related projects and case studies. Prerequisite: All program courses. (F, O)
- HIT 280 Coding Application (2)**
Students will review the basic coding guidelines and will practice the application of diagnosis and procedure codes. Application of ICD-10-CM/PCS, Current Procedural Terminology (CPT) and HCPCS codes. Validating coding accuracy using clinical information found in health records. Ethical coding standards will be applied and promoted while adhering to current regulations and established guidelines in code assignment. Encoding technology including coding reference software applications will be used. Web-based instruction. Prerequisites: HIT 184 and HIT 185. (F, O)
- HIT 281 Health Law, Privacy and Ethics (3)**
The study of health law, privacy, security, confidentiality, access, release, and ethical issues. Application of healthcare legal terminology, concepts, and principles to legal documents related to the practice of health information management. Health records and health information software applications are used. Web-based instruction. Prerequisite: HIT 176. (S, O)

- HIT 282** **Health Information Data Analytics (3)**
A study in the basics of statistics and data analytics. Application of descriptive statistics and data analysis in healthcare settings. Advanced data analysis techniques will be explored. Software applications will be used for organization, analysis, and presentation of data. Web-based instruction. Prerequisite: HIT 176. (F, O)
- HIT 283** **Health Information Leadership (2)**
Practical instruction in management principles from a health information management perspective with both theory and practice examples. Leadership roles, including strategic planning, financial management, and information governance will be studied. Teamwork, communication, change management, work design and process improvement will be covered. Staffing, productivity, federal regulations and laws, training and development, cultural diversity and ethics will be examined. Web-based instruction. Prerequisite: HIT 176. (F, O)
- HIT 284** **Healthcare Quality Management (3)**
A study of the principles of performance improvement models, utilization management, and risk management in healthcare. Other topics include credentialing, medical staff services, and committees. Laws, accreditation and regulatory standards will be discussed. Software applications will be used. Web-based instruction. Prerequisite: HIT 176. (F, O)
- HIT 285** **Reimbursement Methodologies (3)**
A study of healthcare payment systems and their effects on the US healthcare delivery system. Functions and history of each major payment system are studied. Compliance strategies, clinical documentation improvement, fraud surveillance measures, and reporting requirements will be discussed. Ethical standards of practice will be studied. Organization, analysis and presentation of data using software applications. Web-based instruction. Prerequisites: HIT 176, HIT 184, HIT 185. (S, Su, O)
- HIT 286** **Intermediate Diagnosis Coding (3)**
An in-depth study in the application of diagnosis coding to higher-level case scenarios using the current classification systems including diagnosis and procedure coding reviews. Prospective payment systems will be studied. Coding compliance and ethical coding practice will be reinforced. Coding software including encoders and references will be used. Web-based instruction. Prerequisites: HIT 176, HIT 184, HIT 185. (S, Su, O)
- HIT 287** **Computer Applications in Healthcare (3)**
Introduction to systems and common software applications and their use in healthcare informatics including data quality, database architecture and design, health information exchange, data storage and retrieval. System evaluation and acquisition and project management will be discussed. Use of PHRs and patient portals will be explored. Web-based instruction. Prerequisite or Corequisite: HIT 176. (F, O)
- HIT 288** **Intermediate Procedure Coding (3)**
An in-depth study in the application of procedure coding to higher-level case scenarios using current classification systems, including diagnosis and procedure coding reviews. Procedure-based payment systems will be studied. Coding compliance and ethical coding practice reinforced. Coding software including encoders and references will be used. Web-based instruction. Prerequisites: HIT 176, HIT 184, HIT 185. (S, Su, O)
- HIT 297** **Professional Practice II (2)**
A virtual and on-site professional practice experience following completion of all program courses. Provides hands-on experience with technical skills in an online environment designed to simulate the activities that would be completed in an HIM setting. Certification examination preparation and career exploration are covered. 40 hours of hands-on experiences are completed at a(an) health information/health information-related site. Prerequisites: All HIT program courses. (S)
- HIT X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- HIT 299** **Special Topics (1-4)**
A course designed to meet special departmental needs. (F, S, Su)

(HPER) HEALTH/PHYSICAL EDUCATION/RECREATION

- HPER 100** **Concepts of Fitness and Wellness (2 credits)**
A course designed for students of all ages that teaches the facts about exercise and physical fitness. This course is designed to teach the student the role of physical activity in maintaining adequate health and improved quality of life. Also, how to assess, develop and implement a complete lifetime fitness and wellness program and its components. The course is designed to incorporate these ideas through lecture and activity. (F, S, O)

HPER 101**Activity: Intro Level**

- (Aerobics) (1): Active participation in aerobic activities. Activities include aerobic dance, water aerobics, walking, yoga and aerobic games. (As needed)
- (Aquatic Games) (1): In this course students will participate in aquatic games and activities. Students will learn team activities. Students will participate in the shallow water with activities such as water volleyball and water hockey extending into the length of the 25 yard pool to participate in such activities as water football and kickball. (As needed)
- (Archery) (1): Active participation in archery involving fundamentals and techniques of basic skills. Stresses shooting techniques, practice for accuracy, and care of equipment. Emphasis on terminology and archery safety rules. (As needed)
- (Beginning and Intermediate Swimming) (1): Teaches swimmers not to fear water, also floating and progressing from basic beginning strokes to more advanced strokes for the intermediate swimmer. (As needed)
- (Beginning Downhill Skiing) (1): A course for beginners. Two class meetings plus 20 to 24 hours in instruction and/or practice on nearby commercial slopes. (S)
- (Biking and Camping) (1): The active participation in biking and camping over two days in a group setting. Biking is done on the park bike trails of Itasca State Park, Itasca, Minnesota. Covers outdoor activities related to camping such as campfire preparation, no trace camping and outdoor cooking. Students participate in two class meetings and one weekend retreat. Bicycles are provided. (F)
- (Billiards and Darts) (1): Active participation in billiards and darts involving fundamentals and techniques of basic skills. Stresses techniques, practice for consistency and care of equipment. Emphasis on terminology, rules, scoring and playing strategy. (As needed)
- (Camping and Hiking) (1): Active participation in camping and hiking and the following related activities: planning campfire meals, campsite set up, campfire preparation, campfire cooking, safety, no trace camping, tenting and evening camping entertainment. Students participate in two class meetings and perform the camping and hiking activities during the weekend retreat. Little Yellowstone State Park in Kathryn, North Dakota is a favorite camping and hiking location. (S)
- (Intro Level Golf) (1): This course covers active participation in beginning golf. A course designed for beginners. It teaches the beginner the proper grip, stance, swing and rules. (As needed)
- (Intro to Basketball) (1): Students will have an opportunity to learn intermediate basketball skills through demonstration and discussion of strategies for team play. This course will advance the skills of the student who successfully completed the beginning basketball course. Emphasis is on individual participation and competition team play. (As needed)
- (Intro to Ice Fishing) (1): A course designed for beginners who will partake in active participation in ice fishing. Class participants will attend two meetings and one weekend outing. Upon completing requirements, a grade will be issued. In order to receive a passing grade, participant must attend two days of ice fishing. (As needed)
- (Intro to Zumba) (1): Zumba is a Latin inspired, dance-fitness class that incorporates Latin and International music and dance movements, which create a dynamic, exciting, and effective fitness system. Zumba integrates some of the basic principles of aerobic, interval, and effective fitness resistance training to maximize caloric output, cardiovascular benefits, and total body toning. Zumba provides a non-intimidating opportunity for non-dancers to participate in a group aerobics class.
- (Power Walking) (1): Whether this is your first experience in exercise walking, or you are a walking pro, this course provides the fundamentals of power walking techniques, mechanics and flexibility exercises. (As needed)
- (Snowboarding) (1): This class is a course for beginners. Two class meetings plus 20 to 24 hours in instruction and/or practice on nearby commercial slopes. (As needed)
- (Social Dance) (1): Emphasis on such basic steps as jitterbug, waltz, two-step, polka, fox trot and a few folk dances. Emphasis on dancing the above and distinguishing the differences in the music. (S)
- (Strength Training) (1): Active participation in physical activity. A combination of free weights, weight machines and various stations will be utilized in an attempt to improve strength and endurance. (As needed)
- (Tae Kwon Do) (1): To introduce students to the basic skills and terminology of Tae Kwon Do, self-defense, physical and mental wellness. (As needed)
- (Team Sports) (1): Active participation in seasonal activities including flag football, softball, volleyball and basketball. (As needed)

(Tenting and Canoeing) (1): Covers the active participation in tenting and canoeing in a group setting over two days. Canoeing is done on the Crow Wing River through the Menahga-Huntersville area of Minnesota. Includes outdoor activities related to camping such as outdoor cooking, safety, no trace camping and evening camping recreational activities. Students participate in two class meetings and one weekend retreat. Canoes are provided. (F)

(Trapshooting) (1): This course will be an introductory level course on the art of trapshooting. Safety and etiquette will be a priority and a must! Student will gain an insight into the history, technique, and experience single and skeet shooting. (F, S, Su)

(Water Aerobics) (1): The purpose of this class is to provide the student with an appropriate level of knowledge and skills in water fitness. Vigorous water activities can make a major contribution to the flexibility, strength, and circulatory endurance of individuals. Pressure of the water on the body helps promote deeper ventilation of the lungs, blood circulation automatically increases, and with well-developed activities, both circulation and ventilation increases still more. (As needed)

(Women's Self-Defense) (1): This course will require active participation in the R.A.D. Systems Basic Self-Defense with instruction involving fundamentals and techniques of basic skills. Stressing self-defense techniques, practice for muscle memory and physical exercise. Emphasis on concepts and technique presented. (As needed)

HPER 110

Sports Officiating (2)

This course will acquaint students with the rules, qualifications, ethics, techniques, conduct, proper signals and appearance of officiating high school football, basketball and volleyball. Students will also observe and officiate. (As needed)

HPER 150

Athletic Participation

(Baseball) (2): Daily practice and participation in intercollegiate baseball. (F)

(Basketball) (2): Daily practice and participation in intercollegiate basketball. (F)

(Football) (2): Daily practice and participation in intercollegiate football. (F)

(Softball) (2): Daily practice and participation in intercollegiate softball. (F)

(Volleyball) (2): Daily practice and participation in intercollegiate volleyball. (F)

HPER 151

Athletic Participation

(Baseball) (1): Daily practice and participation in intercollegiate baseball. (S)

(Basketball) (1): Daily practice and participation in intercollegiate basketball. (S)

(Clay Target) (1): Daily practice and participation in intercollegiate clay target. (F)

(Football) (1): Daily practice and participation in intercollegiate football. (S)

(Softball) (1): Daily practice and participation in intercollegiate softball. (S)

(Volleyball) (1): Daily practice and participation in intercollegiate volleyball. (S)

HPER 197

Practicum in Sports Medicine I (1)

Practicum in Sports Medicine I provides the student athletic trainer with the basic knowledge of policies and procedures of the training room facility. It introduces students to the athletic department members, college athletic team atmosphere, and athletic injury care. Students learn basic athletic injury treatment and first aid procedures through hands-on contact with varsity athletes. Students observe varsity practices and games throughout the semester. Practicum in Sports Medicine I is an arranged time schedule and takes place under the direct supervision of a Certified Athletic Trainer. (F)

HPER 200

Introduction to Parks and Recreation (2)

A beginning course in the study of recreational programs including those in parks, schools, youth agencies, therapeutic institutions, camps, industry and municipal youth agencies. (F)

HPER 201

Introduction to Coaching (2)

This course is designed to allow students to acquire knowledge in base fundamentals of specific skills and positions. Develop a framework of beliefs on issues within the sport. Devise a process of game plan preparation. (As needed)

HPER 207

Prevention and Care of Injuries (3)

This course will provide students with the principles of athletic training. Students will learn prevention, recognition, treatment of athletic injuries, organization and administration of athletic training and basic taping techniques. (S)

HPER 208

Introduction to Physical Education (2)

Designed for students who may be considering a career as a qualified teacher in physical education. Covers the history, philosophy, principles, nature and scope of the professional field of physical education. Related career opportunities in the fields of fitness and sport are also examined. (S)

- HPER 210 First Aid and CPR (Professional/Community) (2)**
Provide students with the knowledge and skills necessary to respond to an emergency. Preparing students to identify, assess, manage and minimize consequences of injury (minor and major) and sudden illness in medical emergencies. Providing options for professional level of training, this course is outlined by the American Heart Association and will follow those guidelines. Certificate cards are given upon request and only after successfully completing the course. The student must score at or above the 84th percentile on all written exams for certifications. Training skills for the professional AHA BLS, AED, and first aid. AHA Heart Saver CPR training may be available upon request. (F, S, O)
- HPER 213 Taping and Bracing (2)**
Taping and bracing will focus on the stabilizing procedures used to assist in the healing process of athletic injuries. A hands-on approach will be used throughout the course. (F)
- HPER 217 Personal and Community Health (3)**
Focuses on current health attitudes and habits needed for life management skills. Proper health habits, lifestyle management, fitness, nutrition, mental health, stress management, drug usage, heart disease, cancer, human sexuality, childbirth, consumer health and health programs are covered. (S, O)
- HPER 220 Emergency Medical Technician I (4)**
This class will provide an introduction to Emergency Medical Services (EMS). The roles and responsibilities of the EMT-Basic will be discussed, as well as basic anatomy and physiology, initial patient survey and triage, physical assessment, and interventions for the pre-hospitalized patient. Students will also receive practice in the laboratory setting and gain experience in local clinical settings. (S, Su-Fargo)
- HPER 250 Athletic Participation**
(Baseball) (2): Daily practice and participation in intercollegiate baseball. (F)
(Basketball) (2): Daily practice and participation in intercollegiate basketball. (F)
(Football) (2): Daily practice and participation in intercollegiate football. (F)
(Softball) (2): Daily practice and participation in intercollegiate softball. (F)
(Volleyball) (2): Daily practice and participation in intercollegiate volleyball. (F)
- HPER 251 Athletic Participation**
(Baseball) (1): Daily practice and participation in intercollegiate baseball. (S)
(Basketball) (1): Daily practice and participation in intercollegiate basketball. (S)
(Clay Target) (1): Daily practice and participation in intercollegiate clay target. (F)
(Football) (1): Daily practice and participation in intercollegiate football. (S)
(Softball) (1): Daily practice and participation in intercollegiate softball. (S)
(Volleyball) (1): Daily practice and participation in intercollegiate volleyball. (S)
- HPER X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- HPER 297 Practicum in Sports Medicine II (1)**
The purpose of Practicum in Sports Medicine II is to give further instruction toward the principles and practices of athletic training. The instruction will be hands-on and will take place on on-campus facilities under the direction of a Certified Athletic Trainer. Practicum schedule will be arranged individually for the entire semester. (S)
- HPER 299 Special Topics (1-4)**
A course designed to meet special departmental needs.

(HUM) HUMANITIES

- HUM 211 Integrated Cultural Excursion: Regional and Cultural Studies (1-3 credits)**
This course offers the student an opportunity to study and experience the culture of another region of the United States or world at large with an emphasis on history, architecture, art, literature, populace, geography, political system, and multiculturalism. The course includes pre-trip planning and lectures, itinerary, trip journals, study and research, and post-trip presentations. ND:HUM
Humanities courses also include any courses tagged with ND:HUM at the end of the description.

(HVAC/R) HEATING, VENTILATING, AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

HVAC/R X92 Experimental Course (1-9 credits)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

HVAC/R 297 Cooperative Education (1-5)

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

HVAC/R 299 Special Topics (1-9)

A course designed to meet special departmental needs.

(JDAT) JOHN DEERE TECH

JDAT 105 Supervised Occupational Experience I (2 credits)

The student will receive on-the-job experience at a John Deere dealership prior to the first-semester, on-campus classes. This will mainly consist of shadowing personnel in the three areas of the service department. Two weeks will be spent in the set-up area, two weeks in the combine area and two weeks in the tractor area. This work experience will be supervised by the NDSCS John Deere Tech coordinator. (Su)

JDAT 106 John Deere Time Service Management (2)

This course covers operational policies followed by the dealership service department. Included will be discussion on time service management, publications, tech manuals, DTAC and service advisor.

JDAT 110 Supervised Occupational Experience II (5)

The student will receive on-the-job experience in a John Deere dealership. This will allow the student to practice and utilize the skills and knowledge learned during the previous on-campus instructional period. This work experience will be supervised by the NDSCS John Deere Tech coordinator. (S)

JDAT 114 Supervised Occupational Experience III (5)

The student will receive on-the-job experience in a John Deere dealership. This will allow the student to practice and utilize the skills and knowledge learned during the previous on-campus instructional period. This work experience will be supervised by the NDSCS John Deere Tech coordinator. (F)

JDAT 116 John Deere Equipment Operation and Adjustment (4)

This course will cover the operation and adjustment of various types of John Deere equipment. Students will operate and field adjust this equipment for optimum performance.

JDAT 155 Introduction to Electrical/Electronics (4)

A lab/lecture demonstration and performance type of course, which covers the principles of electricity. These types of learning styles will be applied to electrical circuits, batteries, starters and alternators. It will include Ohm's Law, schematic reading, test instruments, starter testing and repair and alternator testing and repair. Applications and testing of solid-state devices will be covered in this course. The student will have hands on approach to learning electrical fundamentals as well as repairing and troubleshooting electrical problems on John Deere equipment. This class is a prerequisite for JDAT 255.

JDAT 165 Introduction to John Deere Hydraulic Systems (4)

This course is a study of hydraulic system fundamentals and various components used in a typical John Deere hydraulic system. Disassembly and reassembly of John Deere components will take place to aid in the understanding of component and system operation. Various John Deere components will be bench tested to help the student understand how the components contribute to the overall operation of the system and will be used to evaluate the students' performance. Experiments will be performed on lab equipment to aid in the understanding of basic hydraulic principles. Online delivery methods from John Deere Company along with table exercises and/or machine tests will be utilized to prepare student for John Deere University Hydraulic Systems Certification. This class is a prerequisite for JDAT 265.

JDAT 215 John Deere Engine Rebuild (6)

A lab/lecture course covering diesel engines used in John Deere equipment. Students will disassemble, reassemble, adjust and test these engines. The proper use of technical manuals will be stressed. Prerequisite: DTEC 115.

- JDAT 225 John Deere Powertrains (7)**
A lab/lecture course covering the power train used in John Deere tractors. Students will disassemble, reassemble, adjust and test these components. Proper use of technical manuals will be stressed.
- JDAT 255 John Deere Electrical/Electronics (5)**
A lab/lecture course covering electrical and electronic fundamentals applied to John Deere equipment. This course includes the study of Ohm's Law and series and parallel circuits. The proper use of digital multimeters and other testing equipment also will be covered. Techniques of circuit diagnosis will be demonstrated with electrical schematics. The function, operation and testing of semiconductors and transistors are covered. Microprocessor operation, including inputs and outputs, are explained and studied. Tractor circuits including lighting, accessory, safety, instrumentation and gauges are tested. Electronic monitoring systems for planting and harvesting equipment are covered. Prerequisite: JDAT 155.
- JDAT 260 Introduction to Ag Management Solutions (AMS) (3)**
A lab/lecture course designed to introduce the students to John Deere's Ag Management Solution systems (AMS). Basic GPS equipment guidance systems operation and diagnostics will be utilized. Types of GPS signals and their applications currently used by John Deere Company will be covered. AMS display set-up and application usage on current John Deere equipment will be performed. Prerequisite: JDAT 255.
- JDAT 265 John Deere Tractor Hydraulic Systems Diagnosis (5)**
A lab/lecture course covering the operation, testing, diagnosis, and repair of the hydraulic systems found on John Deere utility, row-crop and four-wheel-drive tractors. Prerequisite: JDAT 165.
- JDAT X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- JDAT 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(KMTS) Komatsu

- KMTS 106 Introduction to Komatsu Service (3 credits)**
This course introduces the student to the Komatsu organization and the different parts of the company. Instruction and lab experiences in the shop include MSHA safety, forklift training, shop operations and operational policies followed by the dealership service department. Included will be discussion on KOMTRAX, publications, tech manuals and other literature specific to Komatsu products. This course will also introduce the student to the Komatsu Service Certification program. The students will plan a class trip to the Komatsu Training Center at Cartersville, GA to be scheduled sometime in their second year of study. (Su)
- KMTS 110 Komatsu Internship I (4)**
The student will receive on the job experience at a Komatsu dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the last 8-weeks of the first year. (2nd 8-weeks spring semester)
- KMTS 210 Komatsu Internship II (5)**
The student will receive on the job experience at a Komatsu dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the first 8-weeks of the second year. (1st 8-weeks fall semester)
- KMTS 215 Komatsu Engine and Fuel Systems (5)**
A theory and lab course covering the construction, operating principals, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures, measurement fundamentals, performance and engine troubleshooting associated with Komatsu engines. Fuel system identification, theory of operation and troubleshooting of fuel systems will also be covered in this course. This is an 8-week course. Prerequisite: DTEC 115. (F)
- KMTS 220 Komatsu Internship III (5)**
The student will receive on the job experience at a Komatsu dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the third 8-weeks of the second year. (1st 8-weeks spring semester)

- KMTS 225** **Komatsu Powertrains and Undercarriage (4)**
A lab/lecture course covering the powertrain systems used in Komatsu equipment. Mechanical shift and power shift transmissions will be covered in this course. Students will disassemble, reassemble, adjust and test these components found on Komatsu construction equipment. The course also introduces the student to undercarriage and drive systems used on different Komatsu Track Machines. Also covered are final drives and braking systems used in Komatsu track and wheel equipment. Prerequisite: DTEC 125. (Su)
- KMTS 255** **Komatsu Electrical/Electronics (4)**
A lab/lecture course covering electrical and electronic systems for the engine, hydraulics, machine controls and the Tier 4 emission systems as applied to Komatsu construction equipment. Techniques of circuit diagnostics will be demonstrated with electrical schematics. The function, operation and testing of Komatsu equipment will be covered with the Electronic Services Tools. Microprocessor operation including inputs and outputs are explained and covered. Circuits including lighting, accessory, safety instrumentation and gauges are tested. This course will include all Komatsu construction equipment. Prerequisite: DTEC 155. (S)
- KMTS 265** **Komatsu Advanced Hydraulic Systems (4)**
A lab/lecture course covering the diagnostics, service and repair of the hydraulic functions on Komatsu construction equipment. Open center, closed center and load sensing systems are covered as well as steering, hydrostatic drives and hydraulic functions of Komatsu equipment. Prerequisite: DTEC 164. (S)

(MATH) MATHEMATICS

Student placement in a mathematics course is subject to ACT-math scores or the ACCUPLACER placement test scores or Academic Services approval.

- ASC 090** **Math Prep (2 credits)**
This course improves basic math computational skills: addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals. Includes a study of percents and application of percents. This course may be required due to ACCUPLACER test results and the course placement policy. (F, S, Su)
- ASC 091** **Algebra Prep I (2)**
This course will examine real numbers, fundamental operations, variables, equations and applications. Course may not transfer. Prerequisite: ACT math score of 13-15, appropriate ACCUPLACER score or successful completion of ASC 090. (F, S, Su, O)
- ASC 092** **Algebra Prep II (2)**
This course will examine systems of linear equations and their applications, rules of exponents, scientific notation, radicals and factoring. Course may not transfer. Prerequisite: ACT-math score of 16-18, appropriate ACCUPLACER score, or successful completion of ASC 091. (F, S, Su, O)
- ASC 093** **Algebra Prep III (2)**
This course will examine the real number system, factoring, quadratic equations, rational expressions, and functions. Course may not transfer. Prerequisite: ACT math score of 19-20, appropriate ACCUPLACER score, or successful completion of ASC 092. (F, S, Su, O)
- BOTE 108** **Business Mathematics (3)**
Review of mathematical fundamentals with emphasis on business applications and problem-solving. The fundamentals of the four basic operations involving whole numbers, fractions and decimal numbers and proceeding into business computations involving bank records, payroll, simple and compound interest, percentages, promissory notes, markups, purchasing, selling, present value and annuities. Note: This course may not be used with MATH 123 to fulfill mathematics requirements for the associate of applied science degree. (F, S, O)
- MATH 102** **Intermediate Algebra (3)**
Properties of the real number system, factoring, linear, exponential and quadratic equations, functions, polynomial and rational expressions, systems of equations, exponents and radicals. (A specific department may choose not to allow this course to count toward total hours required for graduation. May not transfer.) Prerequisite: ACT score, ASC 092 or placement test. (As needed)
- MATH 103** **College Algebra (3)**
Relations and functions, equations and inequalities, complex numbers, polynomial, rational, exponential and logarithmic functions, and systems of equations. Emphasis on using real-data and analyzing the data using symbolic, numerical, and graphical methods. Prerequisite: ACT score, ASC 093 or placement test. (F, S, Su, O)
ND:MATH

- MATH 104** **Finite Mathematics (3)**
Systems of linear equations and inequalities, matrices, linear programming, mathematics of finance, elementary probability and descriptive statistics. A general liberal arts course for those who don't need extensive algebra or calculus. Emphasis on real-life applications. Prerequisite: ACT score, ASC 093 or placement test. (As needed) ND:MATH
- MATH 105** **Trigonometry (2)**
Angle measure, trigonometric and inverse trigonometric functions, trigonometric identities and equations, applications. Students cannot receive credit for both MATH 105 and 107. Prerequisite: ACT score or ASC 093 or departmental approval. (S) ND:MATH
- MATH 107** **Pre-Calculus (4)**
Equations and inequalities; polynomial, rational, exponential, logarithmic, and trigonometric functions; and inverse trigonometric functions; trigonometric identities and equations and applications. Prerequisite: MATH 093 or placement test. Students cannot receive credit for both MATH 105 and 107. Prerequisite: ACT score, MATH 103 or placement test. Offered only on demand. ND:MATH
- MATH 120** **Basic Mathematics I (2)**
A review of whole numbers, fractions and decimal numbers in conjunction with the fundamental application of ratios, rates, unit rates, proportions, and percentages in solving everyday problems. The application of business and consumer mathematics such as simple interest, compound interest, and purchasing. (F, S)
- MATH 123** **Basic Mathematics II (2)**
This course introduces statistical data reading and calculating. Problem solving applications involving U.S. and Metric measurements. Application of direct measurement, perimeter, area, volume, and fundamental geometry. (F, S)
- MATH 125** **Basic Mathematics III (2)**
Basic concepts and features of beginning algebra with an emphasis on critical thinking and problem solving. Topics include properties of real and rational numbers, arithmetic operations of numbers and expressions, translating verbal expressions to variable expressions, formula manipulations and application of word problems. (F, S)
- MATH 130** **Technical Mathematics (2)**
A review of whole numbers, fractions and decimals using U.S. measurements. The application of ratio and proportion, direct measure, perimeter, area and volume with a construction emphasis. (F, S-Online/Fargo)
- MATH 132** **Technical Algebra I (2)**
A basic algebra course for students enrolled in technology programs. Topics include properties of real numbers, algebraic expressions, solving equations, polynomials, factoring, formula manipulations and problem-solving. (F, S, O)
- MATH 134** **Technical Algebra II (2)**
A continuation of MATH 132. For students who need advanced skills in algebra for application in technical courses or as a preparation for intermediate algebra. Topics include linear and simultaneous equations, quadratic equations, logarithmic and exponential equations, decimal, binary, hexadecimal and BCD base conversions. Prerequisite: MATH 132. (S)
- MATH 136** **Technical Trigonometry (2)**
A study of the fundamentals of trigonometry. Right triangle trigonometry, the Law of Sines, the Law of Cosines and Vectors. Emphasis is placed on problem-solving for the technology fields. Prerequisite: MATH 132. (F, S, S-Online)
- MATH 137** **Applied Algebra (3)**
An intermediate algebra course for students enrolled in technology programs. Topics include properties of real numbers, algebraic expressions, factoring, formula manipulation, graphing, linear equations, quadratic equations, solving systems of equations, simultaneous equations, exponents, radicals and logarithmic equations.
- MATH 165** **Calculus I (4)**
Limits, continuity, differentiation, Mean Value Theorem, integration, Fundamental Theorem of Calculus and applications. Prerequisite: ACT score, MATH 105, MATH 107, or placement test. (F) ND:MATH
- MATH 166** **Calculus II (4)**
Applications and techniques of integration, polar equations, parametric equations, sequences and series, power series, and applications. Prerequisite: MATH 165. (S) ND:MATH

MATH 210

Elementary Statistics (3)

An introduction to statistical methods of gathering, presenting, and analyzing data. Topics include probability and probability distributions, confidence intervals, hypothesis testing, and linear regression and correlation. Prerequisite: ACT score, ASC 093 or placement test. (F, S, O) ND:MATH

MATH 227

Applied Linear Algebra (3)

Systems of linear equations, vector and matrices, mapping, linear programming, and numerical applications. Prerequisites: MATH 146 or MATH 165. (S-even years, as needed)

MATH 265

Calculus III (4)

Multivariate and vector calculus including partial derivatives, multiple integration, and its applications, line and surface integrals, Green's Theorem, Stoke's Theorem. Prerequisite: MATH 166. (F, as needed) ND:MATH

MATH 266

Introduction to Differential Equations (3)

Solution of elementary differential equations by elementary techniques. Laplace transforms, systems of equations, matrix methods, numerical techniques and applications. Prerequisite: MATH 265 or departmental approval. (S, as needed) ND:MATH

MATH 277

Mathematics for Elementary Teachers I (4)

A mathematics content course for prospective elementary school teachers. Topics include problem solving, numeration systems, real numbers, and elementary number theory. Calculators, computers, and manipulatives are used in the course. Prerequisite: Successfully completed MATH 103. (S)

MATH X92

Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

MATH 299

Special Topics (1-5)

A special purpose class or activity to be used for a mathematics course in process of development, for classes occasionally scheduled to meet student needs or interests, or offered to utilize particular faculty resources. (F, S, Su)

(MATL) MACHINE TOOLING

MATL 101

Machine Tool Theory I (4 credits)

This Precision Machining Theory course introduces the safe use and functional purpose of hand tools, layout tools, and measuring instruments. Fundamentals in the use of lathes and vertical milling machines including all of the basic procedures used to produce machined parts are explained and studied in detail. Horizontal and vertical sawing machines are also introduced. Proper use and identification of cutting tools for these machines are learned. Safe machine shop practices are studied and are applied in MATL 111. (F)

MATL 102

Machine Tool Theory II (4)

The Precision Machining Theory course introduces the safe use and functional purpose of surface grinders and cylindrical grinding attachments. CNC tool room lathe and mill applications will be studied, and introductory CNC programming will be introduced. Advanced processes for manual mills and lathes, as well as rotary tables and indexers will be included in the course. Carbide insert and tool holder nomenclature and application is learned. Metallurgy and heat-treating processes will be covered and students will have the opportunity to apply these technologies in MATL 112. (S)

MATL 111

Machine Tool Lab I (7)

This introductory course to Precision Machining begins with the use of basic tools such as hammers, punches, layout tools, files, drills, taps, and reamers. Students will learn the proper techniques to sharpen drills, layout parts, drill and tap holes, and properly deburr parts using files and abrasives. Fundamentals in the use of the drill press, lathe, vertical mill, and horizontal and vertical saws, includes all of the basic procedures to produce machined parts on these machines. Proper measuring tool use and applications will be practiced. Safety techniques in the use of tools and equipment will be stressed. (F)

MATL 112

Machine Tool Lab II (7)

This course will continue to expand on machining operations studied and applied in MATL 111. More advanced practices for lathes, vertical milling machines, and metrology including CMM operation will be introduced. New technologies utilized shall consist of surface grinding, metallurgy, and CNC turning and milling operation and setup. Students will set tool and work offsets and use conversational programming to produce parts on CNC tool room lathes and mills. Safety techniques in the use of tools and equipment will continue to be applied. (S)

- MATL 201 Toolmaking Theory I (3)**
The design and application of cutting tools and tool holders will be studied. The theory and procedures for setup and operation of Wire and Sink Electrical Discharge Machining (EDM), along with the tooling involved in these processes, will also be covered. Toolmaking procedures for the design and construction of jigs, fixtures, and inspection gages will be included in the coursework. Students will study the design, construction, and terminology involved with metal stamping dies including blank and pierce, compound, progressive, and bending and forming dies. (F)
- MATL 202 Toolmaking Theory II (2)**
An introduction to plastic injection molding and the procedures and practices used to design and build plastic injection molds. Types and uses of plastics will be studied along with other types of molding processes such as die-casting, extrusion, compression molding, thermoforming, blow molding, and rotational molding. Emphasis will be placed on the theory and design of plastic injection molds including standard, cam, stripper plate, 3-plate, and unscrewing molds. The study of cold runner and hot runner systems will be included in the coursework. (S)
- MATL 205 CNC Theory and CAD-CAM Operation (4)**
The purpose of this course is to provide the student with the basic skills and knowledge necessary to be successful in the operation, set-up, and programming of CNC turning and milling centers. Emphasis will be placed on: 1) proficient CNC operation, 2) set-up, and 3) entry level programming. Advanced programming and set-up will be covered in later coursework. (F)
- MATL 206 CNC and CAD-CAM Programming (3)**
The theory and practices learned in MATL 205 along with advanced programming and set-up techniques in multi-axis machine tools up to 4 axis' are taught in this class. Several advanced projects will be programmed, set-up, and ran by students on CNC turning centers and CNC machining centers. In addition, a major capstone programming project is done in this class that requires full scale production methods used in producing more than 30 components that will be manufactured and assembled to produce a finished working machine or production tool. Introduction to basic CAD-CAM programming to 2-1/2 dimensions is also covered in this class to aid in producing the capstone project. Set-up and operation of DNC software for uploading and downloading NC files is stressed in this class. Each student will advance from simple to complex programming as their ability and interest permits. (F)
- MATL 212 Toolmaking Lab II (7)**
Toolmaking students will specialize in either mold-making or die-making. They will design and build either a complex mold or die depending upon the area in which they choose to specialize. They will be required to complete a portion of their molds or dies using EDM and a portion on CNC. They also will be involved in the design and building of jigs and fixtures used in the production job by the machinist students. Students also will learn how to make single flute carbide and HSS form cutters. (S)
- MATL 213 Machinist Lab I (7)**
Basic projects using the CNC lathe and CNC mill are introduced. More complicated setups and procedures on lathe, vertical and horizontal CNC mills and surface grinders to produce parts in quantity or repair situation are learned. ID/OD and form grinding are introduced. (F)
- MATL 214 Machinist Lab II (7)**
Each student will program, setup and operate CNC lathes and mills, sinker and wire E.D.M.'s on a variety of required lab jobs. Additional experience producing parts to accurate dimensions is highly stressed. Speed of completion becomes very important in this class. All students will be involved in a full-scale production capstone project that involves building and assembling a production tool or machine consisting of at least 30 precision machined components. This project requires them to use all of the knowledge gained in both MATL 205 and MATL 206 to efficiently use time and resources available to complete the job while meeting stringent timelines and high-quality standards. This capstone project gives students real-world manufacturing experience as well as the chance to work with other students and even other departments as a team to identify and solve real manufacturing problems. Jigs and fixtures required to align and hold parts during machining also will be designed and built by students. (S)
- MATL X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

MATL 297

Cooperative Education (1-5)

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

MATL 299

Special Topics (1-15)

A course designed to meet special departmental needs.

(MFGT) MANUFACTURING TECHNOLOGIES

MFGT 101

Robotics I (2 credits)

This is a lab/lecture introductory robotics course that includes FANUC robot terminology and operational skills with a welding emphasis. This course provides basic instructions using the FANUC Roboguide-WeldPRO software on how to setup a workcell for the simulation programming software using the FANUC robot. FANUC teach pendant and Windows-based computers. (S)

MFGT 107

Introduction to CNC (2)

A lecture/lab introductory course that introduces the student to the basic fundamentals of CNC programming. Applied lab exercises in programming bench-top mills and lathes are included. (F)

MFGT 110

Industrial Shop Practices (2)

An introduction to the procedures and practices used to develop fundamental industrial shop skills. Students enrolled in this class will learn and apply a variety of practical skills used to aid in any entry level industrial mechanical service occupation. The topics covered in this course are: general shop safety; MIG welding set-up and operation as well as welding simulation; Oxy-Fuel torch set-up and operation; basic measuring methods using tape measures, rulers, calipers, and micrometers; identification of SAE and ISO metric measuring systems; proper use and identification of basic shop tools; identification of twist drills and sharpening; identification and use of hand taps; fastener type and grade identification; Helicoil insert use; bolt extraction; properly demonstrate the use of mechanical type torque wrenches; properly demonstrate the use of electronic type torque wrenches; properly demonstrate the ability to torque according to industry standards.

MFGT 115

Manufacturing Processes I (4)

The study of basic machine tool operations and forming processes topics include: lathe work, milling, drilling operations, tooling and fixture work. (F)

MFGT 120

Basic Welding I (1)

Basic training in the use of Oxygen-Acetylene/Propylene Cutting (OFC), Shielded Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW). Welding safety, welding equipment, welding joint configurations and welding techniques will be covered. Welding supplies such as electrodes, shielding gases and electricity will be studied. Welding shop safety is the main focus. (F, S)

MFGT 121

Basic Welding II (1)

This course is a continuation of MFGT 120. This course covers basic horizontal and vertical welding using Shielded Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW). Plasma Arc Cutting and Carbon Arc Cutting are also covered. Prerequisite: MFGT 120. (F, S)

MFGT 123

Fabrication Methods I (2)

A course for students to learn fabrication techniques as they relate to product manufacturing, maintenance and repair. How to use basic shop tools and shop equipment efficiently and safely. (F)

MFGT 125

Total Quality Improvement (2)

A study of the introductory concepts of total quality improvement. Fundamentals of quality, commitment, teamwork, cause/effect, data collection and decision-making. (F, S)

MFGT 126

Manufacturing Process II (2)

A lecture/lab introductory course that introduces students to robotics and automated systems and their operating characteristics. Students will learn basic coordinate systems and how hydraulic, pneumatic and electromechanical systems function together as a production cell. Applied work cell projects will be utilized. (S)

MFGT 127

Precision Measuring Techniques (2)

A lecture/lab introductory course that introduces the student to common measuring tools and measurements. Topics include: common measuring tools, gauge blocks, surface measurement, dial indicators, micrometers, optical measuring techniques, surface measurements, tolerance zones and basic calibration methods. (S)

- MFGT 135** **Basic Metallurgy (2)**
This course will study the basic fundamentals of metallurgy. We will discuss the behavior of metals and how they relate to the field of welding. Topics include identification, classification and properties of ferrous metals, nonferrous metals, alloys, heat treatment, destructive and non-destructive tests, cast iron and plastics. (F)
- MFGT 137** **Print Reading I (2)**
A basic course for students to learn basic shop sketching and print reading. Giving the individual enough knowledge to manufacture a part from an engineering shop drawing. (F, O)
- MFGT 140** **Fabrication Methods II (2)**
An advanced course for students to learn fabrication techniques as they relate to product manufacturing, maintenance and repair. How to use advanced shop tools and shop equipment efficiently and safely. Prerequisite: MFGT 123. (F)
- MFGT 141** **Print Reading II (2)**
An advanced course for students to learn shop sketching and print reading. Giving the individual knowledge of unusual applications of drafting principles including sketches, auxiliary sections, distorted views, welding/ machining symbols and representations of some common production methods. Brief applications in 2-D and 3-D drawing software and GD&T (Geometric Dimensioning and Tolerancing). Prerequisite: MFGT 137. (S)
- MFGT 150** **Hydraulics I (2)**
A study of the basic hydraulic system and system components. The student will explain how each component works, will relate each component's relationship to a functioning system, will read and interpret basic hydraulic schematics, and will review general component troubleshooting and maintenance procedures. Topics include: basic hydraulic systems, force, energy, pumps, motors, control valves, actuators, reservoirs, filters, lines, fittings and basic system troubleshooting methods. (F, S)
- MFGT 160** **Pneumatics (2)**
A study of the basic pneumatic system and system components. This study will explain how each component works, will relate each component's relationship to a functioning system, will include reading and interpreting basic pneumatic schematics, and will review general component troubleshooting and maintenance procedures. Topics include: compressed air, force transmission, energy, air distribution, actuators, valves, regulators, air preparation and basic troubleshooting methods. (F, S)
- MFGT 225** **Intro to SPC (2)**
A study of the introductory concepts of statistical process control. Fundamentals of statistics, control charts, process capability, sampling plans, quality costs, ISO 9000 and quality teams. (F, S)
- MFGT 228** **Geometric Tolerancing (2)**
A course dealing with the basic principles used in geometric tolerancing and its use in the world of manufacturing. Topics include: general tolerancing methods, geometric symbols, datums, material conditions, form tolerances, orientation tolerances, and location tolerances, measuring methods and basic bonus tolerancing methods. (S)
- MFGT 230** **CIM Lab (5)**
This course is a capstone project that is designed to showcase the students' abilities that have been developed over the four semesters. The class will include mechanical adjustments, electrical wiring, and PLC programming. The class combines all the skills that a mechatronics technician needs to have a systems approach to automation. (S)
- MFGT X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- MFGT 297** **Cooperative Education (1-5)**
Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- MFGT 299** **Special Topics (1-9)**
A course designed to meet special departmental needs.

(MICR) MICROBIOLOGY

MICR 202 **Introductory Microbiology (3 credits)**

A study of the characteristics and importance of microorganisms with emphasis on their identification, control and relationships to health and disease. Corequisite: MICR 202L. (F, S, Su, O) ND:LABSC

MICR 202L **Introductory Microbiology Lab (1)**

An overview of the structure and use of microscopes, staining procedures, aseptic technique and common microbiological laboratory procedures useful in the identification of bacteria. Corequisite: MICR 202. (F, S, Su) ND:LABSC

See also Biology (BIOL)

(MSYS) MECHANICAL SYSTEMS

MSYS 103 **Math for Mechanical Systems Technicians (3)**

A basic math course with emphasis on development of useful skills in layout, measurement and computation of pipe lengths and fitting allowances, as well as a study of elevation, grade and volumes as it pertains to the trades. (F)

MSYS 132 **Advanced Hydronics Systems Lab (2)**

This course covers hydronic heating from boiler operation to hydronic heating systems, forced-air, convection and radiant. The course includes classroom and laboratory assignments. (S)

MSYS 141 **Introduction to Electricity (2)**

A study of basic electricity for plumbers including applications such as water heaters, pumps, hot-water heating systems and their associated controls is offered with this course. (S)

MSYS 142 **Electrical Controls for HVAC and Refrigeration (2)**

This course covers many aspects of control circuits connected to HVAC/R service, and it includes classroom and laboratory assignments. Prerequisite: MSYS 141 or equivalent. (F)

MSYS 151 **Drafting and Sketching (2)**

A practical course in drafting, sketching, scale reading, geometric construction and interpretation of drawings. The principles involved are sufficient in depth to give the student the working knowledge and skills required for the major program areas. (S)

MSYS X92 **Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

MSYS 299 **Special Topics (1-9)**

A course designed to meet special departmental needs.

(MUSC) MUSIC

MUSC 100 **Music Appreciation (3 credits)**

Introduction to the elements, genre, media and historical and stylistic periods of music. This course is a broad overview of music and musical styles including folk, religious, jazz, popular, classical and ethnic music. It will introduce musical concepts and focus on perceptive listening to music as it exists in the world. (F, S, Su-O) ND:HUM

MUSC 101 **Fundamentals of Music (3)**

Introduction to fundamental elements of music through the study of rhythm, pitch, harmony, and other terminology. It develops or improves skills in reading and writing (notating) music, using a piano keyboard as a reference, understanding key signatures, and harmonizing melodies. (F, S) ND:HUM

MUSC 115 **Concert Band (1)**

Concert Band is dedicated to the rehearsal of a wide variety of music and includes several performances per semester. Rehearsals are twice a week. Additional sectional rehearsals are scheduled as needed. Course may be repeated. (F, S)

MUSC 117 **Concert Choir (1)**

Concert Choir is dedicated to performing a wide variety of music and includes several performances per semester. Group rehearsals are two times a week. Additional sectional rehearsals are scheduled as needed. Course may be repeated. (F, S)

- MUSC 122 Music Theory I (3)**
Understanding of musical elements and the theory of written music. Music notation, key relationships, rhythm and harmony are stressed. Required for music majors. Corequisite: MUSC 123. (F)
- MUSC 123 Aural Skills I (2)**
Aural training in sight singing, intervals, melodic, harmonic and rhythmic dictation. Required for music majors. Corequisite: MUSC 122. (F)
- MUSC 124 Music Theory II (3)**
A continuation of Music Theory I. A more in-depth understanding of musical elements and the theory of written music. Music notation, key relationships, rhythm and harmony are stressed. Required for music majors. Corequisite: MUSC 125. Prerequisite: MUSC 122. (S)
- MUSC 125 Aural Skills II (2)**
Aural training in sight singing, intervals, melodic, harmonic and rhythmic dictation. Required for music majors. Prerequisite: MUSC 123. Corequisite: MUSC 124. (S)
- MUSC 138 Jazz Band (1)**
Jazz Band is an auditioned group that performs frequently for student and public functions throughout the tri-state area. It is a select group that plays primarily popular music including jazz, rock, country and funk. Instrumentation consists of a rhythm section, trumpets, trombones, and saxes. Rehearsals are twice a week. Course may be repeated (F, S)
- MUSC 144 Applied Music (Private Voice Lessons) (1/term)**
Individualized instruction with emphasis on musicianship and repertoire. One-half hour private lesson per week. Limited enrollment, see instructor. Course may be repeated. (F, S)
- MUSC 145 Applied Music (Private Instrumental Lessons) (1/term)**
Individualized instruction on concert band instruments with emphasis on musicianship and repertoire. One-half hour lesson per week. Limited enrollment, see instructor. Course may be repeated. (F, S)
- MUSC 157 Pop-Swing Choir (1)**
Pop-Swing Choir is an auditioned group that performs for student and public functions throughout the tri-state area. It is a select group that sings primarily popular music. Rehearsals are twice a week. Course may be repeated. (F, S)
- MUSC 160 Class Piano I (1)**
The purpose of this class is to aid music education and performance majors in the development of suitable piano skills. Proficiency at the piano is a necessary component for your growth as a musician and educator. A great deal of theory and pedagogy is integrated into this class to help you build the necessary skills to meet future expectations of competence within our profession. (F)
- MUSC 161 Class Piano II (1)**
This class is a continuation of MUSC 160. The purpose of this class is to aid music education and performance majors in the development of suitable piano skills. Proficiency at the piano is a necessary component for your growth as a musician and educator. A great deal of theory and pedagogy is integrated into this class to help you build the necessary skills to meet future expectations of competence within our profession. Prerequisite: MUSC 160. (S)
- MUSC 162 Class Voice (1)**
This course is designed to enable the student to understand the basic principles of vocal production. This will be accomplished through observation, ensemble study, and performing. Course may be repeated. (F, S)
- MUSC 182 Technology of Music (3)**
This course surveys a variety of technology, looking at aspects of both software and hardware applications, in service of music. We will look at notation software that allows us to write music with traditional notation. In addition, we will also look at several types of software that allows us to record and manipulate sound in a variety of different ways and with different approaches to user interface. We will also explore a variety of hardware used in the recording and creating process. In every case, students will have the opportunity to facilitate and demonstrate learning through several different projects over the course of the semester, making this a "hands-on" class in the great tradition of NDSCS coursework. (F, S)
- MUSC 207 History of Rock and Roll Music (3)**
This course presents a survey of popular music from 1900 to the present. The class provides a segmented review of variations in the form and the sociological impact of music. (F-Fargo, F/S-Wahpeton) ND:HUM

- MUSC 245** **Applied Music (Private Piano Lessons) (1/term)**
Individualized instruction with emphasis on musicianship and repertoire. One-half hour private lesson per week. Limited enrollment, see instructor. Course may be repeated. (F, S)
- MUSC X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- MUSC 299** **Special Topics (1-4)**
A course designed to meet special departmental needs. (F, S)

(NURS) NURSING

- NURS 101** **Introduction to Nursing (5 credits)**
This course, the first in the nursing curriculum, includes an introduction to nursing's historical background and trends in nursing today. An emphasis is placed on the role and responsibility of the individual practical nurse as a person in today's society and as a professional in the delivery of health care. An introduction to the Mission/Framework for the North Dakota State College of Science Nursing Program is included. Also included is an introduction to the client as a developing biopsychosocial, spiritual, and cultural being. Basic nursing principles are taught in the lecture setting. Communication techniques, introduction to basic physical assessment, and basic nursing procedures are demonstrated and applied in the lab and clinical setting. The nursing process is utilized to provide safe and effective nursing care by helping the client adapt to his/her environment. Emphasis is placed on the care of the client in the long-term setting. Upon completion of skills portion of the course the student is eligible to write the certified nurse assistant examination. The class meets for four lecture hours per week with laboratory and clinical sessions scheduled to provide the students with practical experience. Prerequisite: Admission into the first semester in the Associate in Applied Science degree in Practical Nursing. (F, S)
- NURS 102** **Introduction to Adult Nursing (6)**
This course covers the medical systems model to introduce abnormal states and conditions resulting from disease in the developing biopsychosocial, spiritual, and culturally diverse adult client. Communication techniques, physical assessment, and complex nursing procedures are taught in lecture, demonstrated, and applied in the laboratory and clinical setting. Emphasis is placed on the disease process, assessments, nursing plan and interventions by utilizing nursing process, thereby assisting the student to provide safe and effective nursing care by helping the client adapt to his/her environment. Nursing care of the client in the long-term care setting is emphasized. The class meets for five lecture hours per week along with laboratory and clinical sessions scheduled to provide the students with practical experiences. Prerequisite of this course are satisfactory completion of the first semester of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Prerequisites or Corequisites: BIOL 221/221L, MICR 202/202L and PHRM 205. (F, S)
- NURS 114** **Role Development (1)**
In this course the student is introduced to the roles and responsibilities of the Registered Nurse in providing nursing care to clients according to the RN Scope of Practice. Emphasis is on the role of the professional nurse and provides an overview of the delivery of professional nursing practices and role development. Principles of evidence-based nursing research will be identified to guide the teaching/learning process. Content regarding legal, ethical responsibilities, quality improvement, and historical trends in nursing is provided to direct the practice of the Registered Nurse. Prerequisites or Corequisites: BIOL 220 and 220L, FYE 101, NUTR 240, PSYC 250. Corequisites: NURS 115 and NURS 116. (F)
- NURS 115** **Essentials for Registered Nursing I (4)**
This course emphasizes basic nursing concepts and incorporates the development of conceptual skills needed for therapeutic nursing interventions for culturally diverse individuals. Focus is placed on providing a solid foundation of technical and interpersonal skills including written, verbal, and therapeutic communication. An introduction to the major disease processes, symptomatology, diagnostic testing, medical- surgical nursing interventions, aspects of nutritional and pharmacological therapy to provide nursing care is included. Students will be introduced to evidence-based nursing care and the use of the nursing process to determine and evaluate nursing care. In the laboratory setting, the student will practice nursing procedures including beginning physical health assessment. Prerequisites or Corequisites: Biol 220 and 220L, FYE 101, NUTR 240, PSYC 250. Corequisites: NURS 114 and NURS 116. (F)

- NURS 116** **Essentials for Registered Nursing I Clinical (1)**
 This course develops the skills necessary to provide basic safety and infection control in a supervised clinical setting. Using the nursing process, data collection skills are used to obtain basic adult health assessment information that is reflected in the client's plan of care. The student will demonstrate written, verbal and therapeutic communication to deliver client-centered care that respects client differences, values, preferences and needs. Corequisites: NURS 115 and NURS 116. (F)
- NURS 117** **Mental Health Nursing/Clinical (3)**
 This course includes mental health nursing principles, concepts of mental health psychopathology, and treatment modalities related to the nursing care of clients/families. Building on the foundation of previous nursing courses and the nursing process, concepts of biological-behavioral modalities in psychiatric nursing care will be addressed. The clinical experience of the course provides opportunities with in-patient acute and chronic mental health concerns across the life span. Using the nursing process, opportunities are provided for the student to provide care to culturally diverse individuals with emphasis on stressors that may interrupt the physiological and psychosocial integrity of individuals and families. Prerequisite: Satisfactory completion of the first two semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 201, NURS 202 and NURS 203. (F)
- NURS 118** **Essentials for Registered Nursing II (4)**
 Emphasis on medical-surgical nursing concepts and application to evidence-based clinical practice with culturally diverse individuals will be expanded from NURS 115. Disease processes, diagnostic measures, and interventions including nutritional and pharmacological therapies to culturally diverse individuals and families over the lifespan will be presented. The concepts of health promotion/protection and maintenance for the individual and families will be included. In a laboratory setting students will acquire advanced technical skills appropriate for the registered nurse caring for a diverse population in multiple care settings. Building on previous health assessment information, the student will refine and enhance skills necessary to perform a complete health assessment of the individual across the lifespan including variances from expected findings. Prerequisite: Satisfactory completion of the first semester of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 119 and PHRM 205. (S)
- NURS 119** **Essentials for Registered Nursing II Clinical (2)**
 This clinical course provides opportunities to conduct comprehensive health assessments with the emphasis to acquire, process and interpret data collected from clients in the medical/surgical setting. Using a collaborative physical, psychological, socio-culture and spiritual approach the student will use the nursing process to plan, implement and evaluate nursing care. The student will use evidence-based research and theoretical concepts to problem solve and critically reason to manage common clinical problems. The student will apply the teaching/learning process in the reinforcement of education to the client and family. Prerequisite: Satisfactory completion of the first semester of the Associate Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 118 and PHRM 205. (S)
- NURS 201** **Complex Nursing Care Concepts I (3-4)**
 Concepts that continue to build on evidence-based clinical judgement and skills in clinical management for the level and scope of registered nursing practice are included in the course curriculum. The course will provide a continuation of biological, physical, social and behavioral sciences, including disease process concepts in the health illness continuum. Nutrition and pharmacology are included to plan, implement and evaluate the delivery of complex client-centered care that supports client differences, values and preferences. Prerequisite: Satisfactory completion of the first two semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum or successful admission to the LPN to RN ASN program. Corequisites: NURS 202 and NURS 203 or NURS 262. (F)
- NURS 202** **Complex Nursing Care Concepts I Clinical (2-3)**
 This course allows the student to use the nursing process to assess, plan, manage and evaluate the provision of professional nursing care including the acute, unstable client in multiple settings. It places emphasis on the use of critical reasoning and skills necessary to collect and interpret data, and use knowledge synthesized from the bio-psychosocial and physiological sciences to evaluate nursing care. Students will explore the interdisciplinary, collaborative role of the nurse to demonstrate technical and interpersonal skills in the management of health promotion and maintenance for the individual and families. Prerequisite: Satisfactory completion of the first two semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum or successful admission to the LPN to RN ASN program. Corequisites: NURS 201 and NURS 203 or NURS 262. (F)

NURS 203

Preventative Community Health (2)

This course is composed of an overview of community-based nursing practice and the role of the nurse in health promotion for clients and families in their environment. The course will present basic epidemiology concepts, specific concerns related to communities, including environmental threats and cultural influences. The student will utilize teaching/learning principles to support health promotion and disease prevention for clients/families and communities. Preventative health will include concepts of family health, including women's health. Utilizing critical reasoning and the nursing process, the student will research, design and present a community-based project that promotes health within a community setting. Prerequisite: Satisfactory completion of the first two semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 117, NURS 201 and NURS 202. (F)

NURS 204

Maternal Child (3-4)

This course focuses on the role and scope of practice of the registered nurse in the care of childbearing families and the developing child. Content and learning objectives are designed to utilize critical reasoning and skills necessary to collect and interpret data, use knowledge synthesized from psychosocial and physiological sciences to evaluate nursing care. The student will explore the nurse's responsibilities in the provisions of holistic, safe, competent nursing care for the childbearing process and selected study of diseases/disorders affecting women, children, and families. Students will explore the inter-disciplinary, collaborative role of the nurse to demonstrate technical and interpersonal skills in the management of health promotion and maintenance of culturally diverse clients including women, infants, and children. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies the nursing curriculum. Corequisites: NURS 205, NURS 206, NURS 207 and NURS 208. (S)

NURS 205

Complex Nursing Care Concepts II (2-3)

This course focuses on the care of culturally diverse individuals and families experiencing life-threatening, critical events. Advanced medical-surgical concepts and skills will be presented to care for the critical, unstable client in multiple acute care settings. Ethical concepts will be explored in relation to critical events and end of life care. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum or satisfactory completion of the first semester of the Associate in Science in Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 204, NURS 206 or NURS 263. (S)

NURS 206

Complex Nursing Care Concepts II Clinical (1-3)

This clinical course provides students opportunities to deliver evidence-based care, including application of evidence-based practice in managing acute clinical problems for clients experiencing life-threatening, critical events. The student functions effectively as an interdisciplinary team member exercising goal-setting strategies and problem-solving techniques in the application and management of care that respects client differences, values, preferences and expressed needs, based on scientific evidence. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 204, NURS 205, NURS 207 or NURS 263. (S)

NURS 207

Leadership/Preceptorship (3)

Comprised of lecture and clinical practice, this course is designed to assist students to develop and apply the knowledge and skills essential to lead and manage nursing care in a dynamic health care system. Areas presented and explored will include leading and managing concepts; including interdisciplinary teamwork and delegation and supervision of other members of the health care team, evidence-based practice, quality improvement processes, initiation and management of change, budget and resource allocation and professional preparedness and responsibility. The student will collaborate using critical reasoning to make informed nursing clinical judgments, effectively define problems, gather and evaluate information, and determine measures to provide optimal health for clients. A preceptorship clinical experience will be assigned by the student's advisor in collaboration with the student in a health care facility. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 204, NURS 205, NURS 206 and NURS 208. (S)

NURS 208

Transition to Practice (1)

Course topics will direct the student to plan and develop professional opportunities to transition into practice such as writing a resume, the interview process, professional expectations, relationships, and organization. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisite: NURS 204, NURS 205, NURS 206 and NURS 207. (S)

NURS 231**Psychiatric Mental Health Nursing (2)**

This course focuses on the integration of theory and clinical practice in the psychiatric-mental health setting. Focus is placed on the concepts of mental health, mental illness, psychiatric nursing, cultural influences on mental health/illness, continuum of care, therapeutic interaction and the various psychiatric disorders encountered in the psychiatric-mental health setting. Emphasis is placed on the role of the licensed practical nurse in providing care for the psychiatric client. Students will work to develop a beginning understanding of mental illness and its effect on the client's life. Prerequisites for this course include satisfactory completion of the first two semesters of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. (Su)

NURS 232**Adult Nursing (5)**

This course builds on prior learning to gain knowledge of disease processes of the biopsychosocial, spiritual, and culturally diverse adult client within the health illness continuum. It prepares the student to recognize the symptomatology of major disease processes and changes in the health status of the client within their environment. It will provide knowledge in the methodology of diagnostic testing, medical-surgical interventions, and aspects of nutritional and pharmacological roles in the delivery of nursing care to the client. The emphasis will be placed on nursing care and utilizing the nursing process. Assessment will follow the system utilizing Maslow's Hierarchy of Needs and Erickson's Developmental Stages to determine nursing diagnosis, plan, intervention, and evaluation of nursing care. Application of the teaching-learning process will be emphasized. Problem-solving skills will be utilized in the identification of environmental risks in planning care of the adult client. Using the nursing process as a framework, students explore the collaborative role of the nurse with the adult client, families, and other members of the health care delivery system. Prerequisites of this course are satisfactory completion of the first two semesters of the Associate in Applied Science Practical Nursing curriculum, with a minimum of a 2.0, a "C" average, in all courses required in the Nursing Program. Pre and/ or corequisite: NUTR 240, ENGL 110. Corequisite: NURS 233. (F, S)

NURS 233**Adult Nursing Clinical (5)**

This course provides supervised clinical experience in which the student applies theories in the care of the biopsychosocial, spiritual and culturally diverse adult client at various developmental levels. The student will apply the nursing process in providing holistic care to the acutely and chronically ill patient/client. Students assess developmental and biopsychosocial, spiritual, and culturally diverse needs of the clients and family on the health/illness continuum to assist the client in setting goals to adapt to their environment and plan, implement, and evaluate nursing care to meet those goals. The student will apply the teaching/ learning process in the education of the client and family. Emphasis is placed on the role and responsibility of the practical nurse in the acute care setting. Prerequisites of this course are satisfactory completion of the first two semesters of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Pre and/or corequisites: NUTR 240, ENGL 110. Corequisite: NURS 232. (F, S)

NURS 245**Maternal Child Nursing (4)**

This course builds on prior learning to gain knowledge of the childbearing family, developing child and women's health. The focus is placed on the normal process of childbearing, the biopsychosocial, spiritual, culturally diverse family, the child through the developmental stages, common disorders associated with childbearing process, children's and women's health. Emphasis is on health maintenance and selected study of diseases and disorders affecting women, children, and families. The student will apply the nursing process in providing holistic care to the client, assess developmental and biopsychosocial, spiritual and culturally diverse needs of the client. The student will apply the teaching-learning process in the education of families, women, infants and children. Emphasis is placed on the role and responsibility of the practical nurse in the maternal child settings. This class meets for an average of four hours per week. Prerequisites of this course are satisfactory completion of the first three semesters of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Pre or Corequisites: ENGL 120, SOC 110. Corequisites: NURS 246, NURS 250 and NURS 251. (F, S)

NURS 246

Maternal Child Nursing Clinical (2)

This course provides supervised clinical experience in which the student applies theories in the care of the biopsychosocial, spiritual, culturally diverse childbearing families, women, infants, and children at various developmental levels. The student will apply the nursing process in providing holistic care to the client, assess developmental and biopsychosocial, spiritual, and culturally diverse needs of the client. The student will apply the teaching-learning process in the education of families, women, infants, and children. Emphasis is placed on the role and responsibility of the practical nurse in the maternal child settings. This class meets for 96 hours and approximately two days per week. Prerequisites of this course are satisfactory completion of the first three semesters of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Pre or corequisites: ENGL 120, SOC 110. Corequisites: NURS 245, NURS 250 and NURS 251. (F, S)

NURS 250

Leadership in the Long-Term Care Setting (2)

This course is an introduction to the leadership responsibilities of the practical nurse in the long-term care setting. The concepts necessary for effective management are presented in lecture and applied in the long-term care setting. Student learning is facilitated through assignments related to leadership concepts. This course consists of 20 hours theory and 36 hours clinical. Prerequisites of this course are satisfactory completion of the first three semesters of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Prerequisites or Corequisites: ENGL 120, SOC 110, NURS 245, NURS 246 and NURS 251. (F, S)

NURS 251

NCLEX-PN Review (1)

This course is designed to provide a comprehensive review of the current test plan for the NCLEX-PN licensure exam for graduate practical nurses. This course includes content review of fundamental skills and PN program curriculum inclusive of medical-surgical, maternal, pediatric, and psychiatric areas of nursing practice. Focus will also be placed on the client need areas of safe and effective care environment, health promotion and maintenance, psychosocial integrity, and physiological integrity. The review utilizes the nursing process to problem solve using analytic thought. Tips for test taking and success as well as study skills are also included in the review. Written material and computer assisted testing (CAT) will be utilized to reinforce lecture content. Course requirements and means of evaluation include proficiency in test taking skills and successful completion of a practice, comprehensive NCLEX-PN exam. Prerequisites of this course are satisfactory completion of the first three semesters of the Associate in Applied Science degree nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisite courses for this course include NURS 245, NURS 246, and NURS 250.(F, S)

NURS 255

Role Transition (1)

This course is designed to promote role development and transition of the LPN to the RN. The student is introduced to the definition, roles and responsibilities of the registered nurse in providing nursing care to clients, families, and communities in their environment. Role concepts essential for the RN to provide and manage care as a member of the profession are emphasized. The student will utilize critical reasoning as it relates to the assessment, diagnosis, management, and evaluation in the provision of professional nursing practice. Principles of evidence-based nursing research will be identified to guide the teaching/learning process. Focus is directed to guide practice within the regulatory framework of professional, ethical and legal responsibilities of the registered nurse and encourages a desire for lifelong learning. Corequisites: NURS 201, NURS 202, NURS 262. (F)

NURS 262

Community/Mental Health Nursing (3)

This course is composed of an overview of community-based nursing practice and the role of the nurse in health promotion for clients and families in their environment. The course will present basic epidemiology concepts, specific concerns related to communities including environmental threats and cultural influences. The student will utilize teaching/learning principles to support health promotion and disease prevention for clients/families and communities. Mental health nursing principles and concepts of mental health psychopathology, and treatment modalities related to the nursing care of clients and their families are included in the course. Utilizing critical reasoning and the nursing process, the student will research, design, and present a community-based project that promotes health within a community setting. Prerequisites: Satisfactory completion of previous courses of the Associate in Science in Nursing (ASN) program with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 201 and NURS 202.

NURS 263**Leadership (2)**

Composed of lecture and clinical practice, this course is designed to assist students to develop the knowledge and skills necessary to lead and manage nursing care in the health care system. Areas presented and explored will include leading and managing concepts; including interdisciplinary teamwork and delegation of nursing care, evidence-based practice, quality improvement, initiation and management of change, budget and resource allocation and professional preparedness and responsibility. The clinical experience will provide opportunity to practice management concepts essential to assuming leadership and management roles as a registered nurse. The student will collaborate in making informed nursing clinical judgments, effectively define problems, gather and evaluate information to provide optimal health for clients in their environment. A preceptorship clinical experience in a designated acute care facility will be assigned by the student's advisor in collaboration with the student. Prerequisites: Satisfactory completion of previous courses of the Associate in Science in Nursing (ASN) program with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 204, NURS 205 and NURS 206.

NURS X92**Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

NURS 299**Special Topics (1-9)**

A course designed to meet special departmental needs.

(NUTR) NUTRITION**NUTR 240****Principles of Nutrition (and Diet Therapy) (3 credits)**

A study of the basic principles of nutrition including: nutrition in the community, the role of nutrients in the maintenance of normal health and nutrition in the life cycle. Also included is the application of these principles to all age groups and for diet modification during illness. (F, S, Su, O)

NUTR 255**Eating Disorders (1)**

A study of the incidence, cause, diagnosis, and treatment of the major eating disorders: anorexia nervosa, bulimia and compulsive overeating. (F, S, Su, O)

NUTR X92**Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

NUTR 299**Special Topics (1-9)**

A course designed to meet special departmental needs. (F, S, Su, O)

(OTA) OCCUPATIONAL THERAPY ASSISTANT**OTA 101****Introduction to Occupational Therapy (3 credits)**

This lecture/lab course is designed to introduce the student to the profession of Occupational Therapy in the context of current and emerging areas of practice. An overview of the history, philosophy, ethics, tenets, and core values of the profession is presented. Students are introduced to the Practice Framework, activity analysis, the concepts of theory, models, frames of references and client-centered practice. (F-first year)

OTA 102**Disability Awareness (1)**

This lab class provides students with practice in organizing and presenting information about various disabilities to the general public. In class activities include guest speakers, discussions, presentations and introduction to the field of occupational therapy. Activities outside the classroom may include puppet shows to community groups and presentations to health classes. Corequisites: All fall semester first year courses. (F-first year)

OTA 105**Medical Terminology (2)**

This online course is a study and practical application of medical vocabulary. Includes recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms. In this course, medical terms related to all major body systems will be covered with emphasis on medical vocabulary used in rehabilitation and Occupational Therapy. Corequisites: All fall semester first year courses. (F-first year)

- OTA 110 Introduction to Muscle Function (2)**
This course is designed to assist the student to explore and explain how movement occurs from a musculoskeletal orientation. The structure of the human body in relation to joints, trunk, and extremities (with emphasis on the upper extremity) is examined and analyzed in terms of functional movement required for all areas of occupation. Classroom and lab experiences will help the student gain an understanding of what normal movement is and what affects it. Principles of exercise are introduced and manual muscle testing and goniometric measurement are discussed and practiced. Corequisites: BIOL 220/220L and all fall semester first year courses. (F-first year)
- OTA 111 Therapeutic Media (1)**
This is a lecture/lab course that emphasizes basic media and activities in a therapeutic setting. Focus is placed in lecture sessions on theories related to occupation, the Occupational Therapy Practice Framework, and activity analysis. The role of the OTA and therapeutic use of self in the context of roles and performance patterns throughout the lifespan is emphasized. Laboratory focus is based on application of analysis to therapeutic intervention situations. Students will practice basic techniques and procedures, and skill attainment in relation to the actual process of different media tasks will be encouraged. Prerequisites: All fall semester first year courses. Corequisites: All spring semester first year courses. (S-first year)
- OTA 112 Documentation (1)**
This lecture/lab course is an introduction to medical note writing. Students will utilize both paper and electronic methods of documentation. Requirements in documentation including AOTA guidelines and legal and reimbursement guidelines will be integrated. Written and oral communication skills including mechanics in note writing such as spelling and grammar as well as proper word and abbreviation usage are practiced. The AOTA Practice Framework and the impact of OT models and frames of references are emphasized. The importance of using and documenting statistics, tests and measurements for the purpose of support evidence-based practice will be presented. Prerequisites: All fall semester first year courses. Corequisites: All spring semester first year courses. (S-first year)
- OTA 113 Physical Disabilities I: Theory and Practice (3)**
This course is designed to provide students with an understanding of the occupational therapy process in physical disabilities resulting from illness, disabling conditions or injury. This lecture/lab course will focus on how occupation forms the core of the profession. It will prepare students to apply theoretical treatment approaches to enhance occupational performance of persons with these types of physical conditions. Evaluation tools and treatment techniques applied to specific diagnosis will be studied and practiced. Theories and practice models/frames of references are examined and applied to guide the evaluation and intervention process. Orthotic and adaptive devices utilized with specific diagnosis will be explored. Laboratory activities reflect current and emerging intervention processes and techniques. Prerequisites: All fall semester first year courses. Corequisites: All spring semester first year courses. (S-first year)
- OTA 114 Pediatrics I: Theory and Practice (2)**
This course is designed to enable the students to investigate and understand the prevalent disabilities occurring during the early years (birth to 21 years of age) and to begin to implement occupational therapy treatment for a variety of disabilities. Students will also study the theories and clinical techniques used to effectively implement occupational therapy treatment techniques in pediatric settings. Prerequisites: All fall semester first year courses. Corequisites: All spring semester first year courses. (S-first year)
- OTA 115 Behavioral Health: Theory/Practice-Children and Adolescents (2)**
In this one-semester online course, students learn about mental health issues that impact the child/adolescent client's occupational performance. Throughout the semester, students will develop treatment plans and activity plans to help children/adolescents achieve functional outcomes within areas of occupation. These courses are offered in an online platform and will include some evening and weekends face-to-face classroom sessions. Prerequisites: All fall semester first year courses. Corequisites: All spring semester first year courses. (S-first year)
- OTA 151 Fieldwork Level I – Experience I (1)**
Designed to provide the student with exposure to a variety of practice settings, personnel, and clients across the life span. Using psychosocial/behavior health approach observation and documentation skills are practiced, as well as participation in client services per discretion of the clinical supervisor/faculty. Students engage in a variety of activities in psychosocial settings over spring semester (40 hrs.) Prerequisites: All fall semester first year courses. Corequisites: All spring semester first year courses. (S-first year)

OTA 160**OTA Refresher Course (2)**

This OTA course is only open to students who have partially completed the program and plan on re-entering it. This online course will provide the student with learning activities related to the profession of occupational therapy. The OT Practice Framework will be summarized as a framework for delivery of occupational therapy services. There will also be a review of various occupational therapy practice areas, frames of references, AOTA Code of Ethics, Standards of Practice, and the Core Values of the profession. This course will address clinical reasoning, evidence-based practice, and activity analysis. Review of medical terminology and muscle function will be included. Course content may be tailored to meet the needs of each student. (O, F, S)

OTA 213**Physical Disabilities II: Theory and Practice (2)**

This course is a continuation of Physical Disabilities I and is designed to provide students with an understanding of the occupational therapy process in physical disabilities resulting from illness, disabling conditions or injury. This lecture/lab course will focus on how occupation forms the core of the profession. It will prepare students to apply theoretical treatment approaches to enhance occupational performance of person with these types of physical conditions. Evaluation tools and treatment techniques applied to specific diagnoses will be studied and practiced. Theories and practice models/frames of references are examined and applied to guide the evaluation and intervention process. Orthotic and adaptive devices utilized with specific diagnoses will be explored. Laboratory activities reflect current and emerging intervention processes and techniques.

Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)

OTA 214**Pediatrics II – Theory and Practice (3)**

This course is designed to enable the students to investigate and understand the prevalent disabilities occurring during the early years (birth to 21 years of age) and continue to implement occupational therapy treatment for a variety of disabilities. Students will also study the theories and clinical techniques used to effectively implement occupational therapy treatment techniques in pediatric settings. Evaluation tools, treatment techniques, documentation and approaches applied to specific diagnoses will be examined and practiced. A basic overview of sensory-integrative development, handwriting and adaptive equipment will be discussed. Students will discuss how occupation is the core of the profession and guides treatment. Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)

OTA 215**Behavioral Health: Theory/Practice-Adults (3)**

In this one-semester online course, students learn about mental health issues that impact the adult client's occupational performance. Throughout the semester, students will develop treatment plans and activity plans to help adult clients achieve functional outcomes within areas of occupation. These courses are offered in an online platform and will include some evening and weekends face-to-face classroom sessions.

Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)

OTA 216**Professional Issues (2)**

This course is designed to enhance the OTA's participation in basic support services in occupational therapy, as well as the legal, ethical and political influences that affect the delivery of occupational therapy services. Topics addressed include leadership and management, health care team role delineation, reimbursement and documentation, credentialing and licensure, ethical standards of practice, quality assurance, research and the use of evidence-based practice in OT. Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)

OTA 217**Simulation Lab (1)**

This course is designed to address experiential learning and development of occupational therapy entry-level practice competencies. It provides students with opportunities to practice skills and apply theory to develop competency in OT interventions and modalities in a safe didactic environment. Simulation methods may include computer-based case studies, part-task trainers, standardized clients, mannequins, virtual reality and interdisciplinary collaboration. Corequisites: All fall semester second year courses. (F-second year)

OTA 218**Aging (2)**

This course provides a concentrated focus on occupational therapy for adults with physical and cognitive deficits, contexts, and client factors. This course examines the basic concepts of aging including theories, trends and policies. Students will study the normal aging process, physical, psychosocial and cognitive dysfunctions common to the elderly. Students will participate in the OT process including screening, evaluation, intervention planning, therapeutic interventions and discharge/follow-up with the geriatric population in the context of occupational performance in order to promote health and prevent disease. This course examines community mobility, aging in place and explores alternative living situations for the geriatric client. The importance of patient, family significant other/caregiver education and documentation to ensure reimbursement in today's health care environment is emphasized. Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)

- OTA 219** **Community Models of Occupational Therapy Practice (2)**
This course introduces the student to emerging areas of occupational therapy practice in the community. These emerging areas of practice are, but not limited to, ergonomics, low vision, driving rehab, design and home modifications, and health and wellness. Assessment and intervention strategies will be addressed.
Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)
- OTA 220** **Teaching Assistant: Medical Terminology (2)**
Optional course which requires student to assist in OTA 105 Medical Terminology. Duties to include test proctoring, organizing review session and other duties as assigned. Prerequisite: College level medical terminology course equivalent to OTA 105. (F)
- OTA 241** **Teaching Assistant: Media (2)**
Optional course which requires student to assist in media lab supervision, demonstrate techniques, participate in classroom maintenance and carry out other duties as assigned. (S)
- OTA 252** **Fieldwork Level I – Experience II (1)**
This course is designed to enhance the OTA's participation in basic support services in occupational therapy, as well as the legal, ethical and supervisory issues in professional practice. Impacts of the health care delivery system on OT practice will be addressed. Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)
- OTA 253** **Orientation to Fieldwork II (1)**
This course is designed to assist in the transition from the academic setting to clinical practice. Content included, but is not limited to, supervision styles, stress management and professional behavior. Policies governing fieldwork will be emphasized. This course reviews the OTA's role in the delivery of OT services for disabled individuals in a variety of settings. This course is designed to enhance student's personal and work behaviors in a small group atmosphere. Students will share experiences from Level I fieldwork. Emphasis is on group leadership and facilitation, development of communication and observation skills and use of self as a therapeutic self.
Prerequisites: All first-year courses. Corequisites: All fall semester second year courses. (F-second year)
- OTA 254** **Fieldwork Level II – Experience I (6)**
Supervised experience of eight weeks or equivalent under the direction of qualified occupational therapy personnel in approved fieldwork sites. The students will work with clients with a variety of physical disabilities, psychosocial dysfunction or developmental delays or disabilities across the life span. The students will be expected to use knowledge and skills acquired in the academic setting to evaluate and treat clients and document according to prescribed regulations. The students will further be expected to conduct themselves in a professional manner in accordance with AOTA Code of Ethics. Prerequisites: Completion of all academic requirements and Level I Fieldwork. (S-second year)
- OTA 255** **Fieldwork Level II – Experience II (6)**
Supervised experience of eight weeks or equivalent under the direction of qualified occupational therapy personnel in approved fieldwork sites. This experience follows Experience I and in a setting that provides therapy to a different population of clients than in the first experience. Client evaluation, treatment implementation and documentation will be expected of the students. The students will further be expected to conduct themselves in a professional manner in accordance with AOTA Code of Ethics. Prerequisites: Completion of all academic requirements and Level I Fieldwork. (S-second year)
- *Students must complete two Level II Fieldwork Experiences to be eligible for graduation.
- OTA 256** **Seminar (1)**
A culminating seminar designed to aid the transition from student to practitioner. This course provides opportunities for application and integration of academic course work used during fieldwork experiences. Students share experiences of being a part of the OT service team and reflect on how the role of occupational therapy and the occupational therapy assistant are demonstrated and delineated in the various fieldwork experiences. The importance of continued lifelong learning and professional development is stressed. Students complete a practice national certification exam and review the application process for the examination. After completion of at least one Level II Fieldwork Experience students are eligible to take this class. (S-second year)
- OTA 295** **Independent Study (1-4)**
A study or in-depth analysis of a selected topic related to Occupational Therapy. This course may be repeated with a new topic. Must have a faculty advisor for project. (F, S)
- OTA X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

OTA 299 Special Topics (1-4)
College class in process of development designed to meet student needs or interests or to utilize particular faculty resources. (F, S)

(PHIL) PHILOSOPHY

PHIL 200 Ethics in the Workplace (2 credits)
Exploring ethical issues; understand and explore ethical principles appropriate to the business culture and environment. (As needed)

PHIL 215 Ethics (3)
This course is a philosophical examination of the kind of reasoning which helps to determine the rightness or wrongness of human actions. Reasoned principles are applied to contemporary problems such as sexuality, euthanasia, cloning, stem cell research, capital punishment, abortion and social justice. (F, S, O) ND:HUM

PHIL X92 Experimental Course (1-9)
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

PHIL 299 Special Topics (1-9)
A course designed to meet special departmental needs.

(PHRM) PHARMACOLOGY

PHRM 123 Pharmacology for Pharmacy Technicians I (2 credits)
This course focuses on the basic concepts of pharmacology, including drug uses, sources, major therapeutic classifications of medications and actions of drugs including the common adverse reactions of the major therapeutic classifications. This course will cover autonomic and central nervous system drugs, the drugs affecting the musculoskeletal system and ophthalmic and otic system drugs. The rest of the body systems will be covered in PHRM 124. Prerequisites and/or Corequisites: BIOL 115, PRMT 101, PRMT 102 and PRMT 111. (F)

PHRM 124 Pharmacology for Pharmacy Technicians II (2)
This course focuses on the basic concepts of pharmacology, including drug uses, sources, major therapeutic classifications of medications and actions of drugs including the common adverse reactions of the major therapeutic classifications. This course covers the cardiovascular system, GI and respiratory systems, endocrine system and the immune systems. Prerequisites and/or Corequisites: BIOL 115, PRMT 101, PRMT 102, PRMT 111, PHRM 123. (F)

PHRM 205 Pharmacology for Nursing (3)
This is an introduction to drug legislation, sources, forms, major classifications, actions, side effects, nursing assessments and nursing interventions of common medications. It prepares the practical nursing student to begin a continuing systematic study of drug therapy associated with common health problems and provides necessary information for safe administration of medications to the biopsychosocial, spiritual and culturally diverse client. Prerequisites of this course are satisfactory completion of the first semester of the NDSCS nursing curriculum. (Second semester of the curriculum) (F, S)

PHRM 207 Pharmacology for the Elderly (2)
The course will examine the effects of aging on the geriatric individual. These changes will be investigated in relation to their impact on pharmacodynamics and pharmacokinetics. Students will examine and analyze medication induced problems and the use of chemical restraints. This course is designed for the student who has successfully completed a basic pharmacology course.

PHRM 210 Pharmacology for Registered Nursing (3)
This course presents education on the concepts and principles of pharmacology and establishing a knowledge base for major drug classifications. A comprehensive approach to the clinical application of drug therapy through the use of the nursing process will assist the registered nurse in role development in regards to medications. Nursing assessments, nursing diagnosis, goals, interventions/implications and evaluation relative to client care and education for medication administration will be included. Prerequisite: Satisfactory completion of the first semester of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 118 and NURS 119. (S)

PHRM X92 Experimental Course (1-9)
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

PHRM 299 **Special Topics (1-5)**
A course designed to meet special departmental needs.

(PHYS) PHYSICS

PHYS 211 **College Physics I (3 credits)**
PHYS 211L **College Physics I Lab (1 credit)**
The non-calculus general physics course sequence recommended for pre-medical or pre-professional students. Topics: Newtonian mechanics and gravitation, work and energy, solids and fluids, heat and thermodynamics. The laboratory is a corequisite of this course. Prerequisite: MATH 103. (F) ND:LABSC

PHYS 212 **College Physics II (3)**
PHYS 212L **College Physics II Lab (1)**
The non-calculus, general physics course sequence recommended for pre-medical or pre-professional students. Topics: Vibrations and waves, electricity and magnetism, light and optics, and an introduction to modern physics. The laboratory is a corequisite of this course. Prerequisite: PHYS 211. (S) ND:LABSC

PHYS 251 **University Physics I (4)**
PHYS 251L **University Physics I Lab (1)**
The calculus based general physics sequence for students majoring in chemistry, physics or engineering. Topics: Newtonian mechanics and gravitation, work and energy, solids and fluids, heat and thermodynamics. The laboratory is a corequisite of this course. Prerequisites: MATH 146 or MATH 165. (F) ND:LABSC

PHYS 252 **University Physics II (4)**
PHYS 252L **University Physics II Lab (1)**
The calculus based general physics sequence for students majoring in chemistry, physics or engineering. Topics: Vibrations and waves, electricity and magnetism, light and optics, and an introduction to modern physics. The laboratory is a corequisite of this course. Prerequisite: PHYS 251. Corequisite: MATH 147 or MATH 166. (S) ND:LABSC

PHYS X92 **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

PHYS 299 **Special Topics (1-9)**
A course designed to meet special department needs.

(PLA) PRIOR LEARNING ASSESSMENT

PLA 202 **Prior Learning Assessment (1-12 credits)**
This course recognizes prior education and training provided through a USDOL or federally approved apprenticeship training program. Individuals who have completed at least 6000 hours (including 400 hours of related study) and who have applied for and been admitted to the NDSCS Technical Studies-Journeyworker Track will qualify.

(PLMB) PLUMBING

PLMB 101 **Plumbing Theory and Code I (3 credits)**
North Dakota recognizes the Uniform Plumbing Code for plumbing installation practices. Therefore, a study of the Uniform Plumbing Code is imperative to students studying the plumbing profession. PLMB 101 covers supplying adequate water and drain sizes for the comfort and protection of people. A detailed study of the state code as it regulates our trade and protects public health. No prerequisites. (F)

- PLMB 102 Plumbing Theory and Code II (5)**
This course is based on the Contren Series Plumbing series, levels 1 and 2. The level one course covers: introduction to plumbing profession; plumbing safety; plumbing tools; introduction to plumbing math; introduction to plumbing drawings; plastic pipe and fittings; copper pipe and fittings; cast-iron pipe and fittings; carbon steel pipe and fittings; corrugated stainless steel tubing; fixtures and faucets; introduction to drain, waste and vent systems; and introduction to water distribution systems. The level two course covers: plumbing math two; reading commercial drawings; hangers, supports, structural penetrations and fire stopping; installing and testing DWV piping; installing roof, floor and area drains; types of valves; installing and testing water supply piping; installing fixtures, valves and faucets; introduction to electricity; installing water heaters; fuel gas systems; and servicing of fixtures, valves and faucets. (S)
- PLMB 105 Core Curriculum for Plumbers (2)**
The Core Curriculum consists of nine individual modules which are: Basic Safety Introduction to Construction Math, Introduction to Hand Tools, Introduction to Power Tools, Introduction to Blueprints, Basic Rigging, Basic Communication Skills, Basic Employability Skills and Materials Handling. (F – 1st 8-weeks)
- PLMB 111 Plumbing Lab I (6)**
This lab orientated courses provides hands-on learning of the art of plumbing. Course includes installation of various plumbing fixtures, drains and water lines. Students put into practice knowledge learned in PLMB 101. (F)
- PLMB 112 Plumbing Lab II (6)**
A continuation of lab 111, where the student will develop a hands-on method of learning how to install plumbing fixtures, water lines and wastes and vents according to the Uniform Plumbing Code. Corequisite: PLMB 102. (S)
- PLMB 114 Residential Plbg Application (1)**
Installation of drain, waste, and vent (DWV) and water supply systems in a residential setting. Students will use all applicable codes to install a whole house plumbing system. (S)
- PLMB 132 Plumbing Drawing, Sketching and Design (3)**
A study and practice in measuring, drawing, sketching and blueprint reading, with a detailed study of the plan view, isometric views and other areas that pertain to plumbing and mechanical installations. (F)
- PLMB X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- PLMB 297 Cooperative Education (1-5)**
Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- PLMB 299 Special Topics (1-9)**
Designed to meet special departmental needs.

(PLSC) PLANT SCIENCE

- PLSC 110 World Food Crops (3 credits)**
Scientific principles of crop growth, worldwide production, management alternatives and processing for domestic and international consumption. (S) ND:SCI
- PLSC 115 Crop Technologies (2)**
This course is designed to introduce students to the importance of seed selection in crop production. Seed traits and the economic impact of the seed business will be discussed. Planting systems, world market implications and stewardship of traits will be explored. This course provides the background information needed by today's seed representatives and farm producers. Prerequisites: PLSC 224 and PLSC 225. (S)
- PLSC 138 Agronomic Technologies (3)**
This course will cover materials needed by students seeking careers that utilize modern agricultural equipment. Topics included in the class include: crop protectant application practices and personal protective equipment; commercial driver's license pre-trip inspections and written test preparations; seed meter, granular applicator, drill and planter calibration; harvest equipment calibration and adjustment; anhydrous ammonia safe handling practices; pesticide compatibility testing; tank mixing procedures; sprayer calibration methods; sprayer nozzles; storage, rinsing, and disposal of pesticide containers; and related topics. (F)

- PLSC 215 Weed Identification (1)**
Emphasis will be placed on identification of weed plants from seedling to mature stages, life cycles, family groupings, and technical plant descriptions/terminology. (F)
- PLSC 223 Introduction to Weed Science (3)**
Introduction of a basic knowledge of weeds, herbicide groups, the use of pesticides, economic and environmental considerations, personal safety, modes of action and terminology.
- PLSC 224 Introduction to Crop Protection (3)**
Introduction to chemical crop protection such as herbicides, fungicides, insecticides and seed treatment. A study of chemical crop protection products or pesticides which aid in management and control of insects, diseases, weeds, fungi and other undesirable pests for improved crop health, growth and yield production. (F)
- PLSC 225 Principles of Crop Production (3)**
Principles of field crop production with emphasis on relationships of crops to their climate and production considerations as a means of managing resources and environment. Prerequisite: PLSC 110. (F)
- PLSC 226 Introduction to Cover Crops (3)**
The purpose of this course is to introduce cover crop concepts and best management practices for the use of cover crops in cropping and diversified situations. Development of an individual project for the use of cover crops to address a specific field situation including the planning, implementation, management and evaluation. Prerequisites: SOIL 210, PLSC 110, and PLSC 225. (S)
- PLSC 235 Field Scouting Techniques (3)**
The purpose of this course is to provide students the skills necessary for proper pest identification and crop scouting techniques. Information such as crop growth and development, pest life cycles, damage symptoms and economic thresholds will be covered. Communication skills and presentation techniques will also be emphasized. (S)
- PLSC 235L Field Scouting Techniques Lab (1)**
Field scouting activities will be done in the field at various locations throughout the summer to give the student practical field experience. Prerequisite: PLSC 235. (Su)
- PLSC X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
See also Ag Economics (AGEC), Agriculture (AGRI), Animal Science (ANSC) and Soil Science (SOIL)

(POLS) POLITICAL SCIENCE

- POLS 115 American Government (3 credits)**
Principles of American government, political behavior and institutions. A general survey of American federal government and politics with an emphasis on the history and development of the federal Constitution and the federal system. The legislative, judicial and executive branches of government and their interrelationship with each other and the bureaucracy are examined. The administration of territories, the two-party system, the media and current political issues and problems also are explored. (F, S) ND:SS
- POLS 116 State and Local Government (3)**
Structures, politics and behavior in states and local governments. A general survey of American state and local government and politics. Topics include operations, finances, types of political subdivisions, city government, county government and relations between local and state governments. (F) ND:SS
- POLS 225 Comparative Politics I (3)**
Principles, behavior, and structure of foreign governments, with emphasis on comparison to the United States. A focus of the course is the examination of global and multicultural issues related to the problems of specific world communities. Cross reference HIST 207. (F) ND SS
- POLS X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- POLS 299 Special Topics (1-9)**
A course designed to meet special departmental needs.

(PRMT) PHARMACY TECHNICIAN

- PRMT 101 Orientation to Pharmacy Practice (1 credit)**
Students will explore the unique role of the pharmacy technician in various health care settings such as community and hospital practices as well as some non-traditional roles. In addition to practice sites, students will be introduced to the laws that govern pharmacy practice as well as the common abbreviations used in various practice settings. The various dosage forms and routes of common medication administration will be additional topics in this course. (F)
- PRMT 102 Pharmaceutical Calculations (3)**
Students will demonstrate the ability to perform pharmaceutical calculations. Emphasis will be placed on basic computations, use of measuring tools, dosage computations, compounding calculations and solution preparations. Topics covered include dosage calculations including pediatric doses, conversions between systems, ratio and proportion, dilution and concentration, milliequivalents, units and intravenous flow rates, and compounding sterile and extemporaneous products. Prerequisite: ACT math score of 19 or completion of ASC 092. (F)
- PRMT 111 Pharmacy Law and Ethics (1)**
This course will focus on Pharmacy Law, state and federal as well as the ethical concepts important in healthcare. Topics will include FDA from 1938 to the present, CSA and the DEA, and ethical theories and applications including autonomy and confidentiality. Prerequisite: Successful completion of PRMT 101. (F)
- PRMT 112 Pharmacy Records and Inventory Management (2)**
This course is designed to introduce the student to ordering, inventory control and record keeping in a retail pharmacy. The student will be exposed to merchandising and pricing both prescriptions and OTC merchandise. The student will also be exposed to third party billing, rotation of stock and medication returns, Medicaid and Medicare. Prerequisites: PRMT 101, PRMT 102, PRMT 111. (S)
- PRMT 216 IV and Sterile Product Preparation (1)**
This course will focus on preparing the student technician for the preparation of all IV aseptic products. Including but not limited to IV piggyback medications, large volume IV's, total parenteral nutrition and chemotherapy agents. The student will have appropriate knowledge, skill and demonstration of aseptic technique, measuring medications, calculating drug amounts, laminar flow hood cleaning and appropriate professional garb requirements. This is a lecture course. Prerequisites: PRMT 101, PRMT 102, PRMT 111, PHRM 123 and PHRM 124. Corequisite: PRMT 216L. (S)
- PRMT 216L IV and Sterile Product Preparation Lab (1)**
This course will focus on preparing the student technician for the preparation of all IV aseptic products. Including but not limited to IV piggyback medications, large volume IV's, total parenteral nutrition and chemotherapy agents. The student will have appropriate knowledge, skill and demonstration of aseptic technique, measuring medications, calculating drug amounts, laminar flow hood cleaning and appropriate professional garb requirements. Prerequisites: PRMT 101, PRMT 102, PRMT 111, PHRM 123 and PHRM 124. Corequisite: PRMT 216. (S)
- PRMT 217 Pharmacy Practice (3)**
During this course students will master the concepts needed to interpret, dispense, label and maintain patient profiles in various pharmacy settings. Topics included in this course are communication skills, abbreviations, dosage calculations, policies and procedures of The Joint Commission, inventory control, medication safety, medication reconciliation, and immunization administration. Students will master the top 200 drugs. This is a lecture course. Prerequisites: PRMT 101, PRMT 102, PRMT 111, PHRM 123 and PHRM 124. (S)
- PRMT 217L Pharmacy Practice Lab (1)**
Students will master the skills needed to prepare medication orders and prescription orders for patient use and dispensing. This is a laboratory class; students will utilize computer software for retail and institutional settings as well as manual preparation of pharmaceutical products. Immunization administration certification will be included in this course. Corequisite: PRMT 217. Prerequisites: Successful completion of PRMT 101, PRMT 102, PHRM 123 and PHRM 124. (S)
- PRMT 221 Chemical/Physical Pharmacy (2)**
In this course students will be introduced to the concepts of extemporaneous product preparation, weighing, measuring of solid and liquid products, labeling and dispensing of these products and the chemical concepts required for their preparation. Students will be introduced to the concepts involving stability and compatibility of various preparations. Prerequisites: Successful completion of PRMT 101, PRMT 102, PHRM 123 and PHRM 124. Corequisite: PRMT 221L. (S)

PRMT 221L Chemical/Physical Pharmacy Lab (1)

This class is the laboratory class for PHRM 121. In this course the student technician will master skills needed to interpret, weigh and measure ingredients specially ordered by the physician for extemporaneously compounded products and dispense these compounds in accordance to approved pharmacy practice standards.

Prerequisites: Successful completion of PRMT 101, PRMT 102, PHRM 123 and PHRM 124.

Corequisite: PRMT 221. (S)

PRMT 231 Pharmacy Internship-Community Based (4)

Students who have completed all of the course work in the Pharmacy Technician program qualify for this course. Students will participate for a minimum of 160 hours in a licensed community pharmacy setting, supervised by a registered pharmacist. The duties and tasks to be performed will be pre-determined based on classroom instruction to reinforce competencies. The duties and tasks to be performed will be agreed upon by the faculty, student and supervising pharmacist to guarantee learning. Performance activities are to include: customer relations; following workplace rules, procedures, ethics and legal parameters; processing of prescriptions including compounding, counting and pouring, packaging and labeling; inventory and stock operations including control, ordering and pricing, data entry and record-keeping. Prerequisites: Successful completion of all core curriculum courses with a grade of "C" or better. (S, Su)

PRMT 241 Pharmacy Internship-Hospital Based (4)

Students who have completed all of the course work in the Pharmacy Technician program qualify for this course. Students will participate for a minimum of 160 hours in a licensed institutional (hospital) pharmacy setting, supervised by a registered pharmacist. Students will be assigned activities and will be evaluated in the following areas: compliance with the institution's policies and procedures, perform billing operations, use of drug dispensing systems, compound, package and label medications, process data on electronic systems, prepare sterile products, use of proper procedures in working with controlled substances, inventory maintenance, use of technology including automated dispensing machines and record-keeping. Prerequisites: Successful completion of all courses with a grade of "C" or better. (S, Su)

PRMT X92 Experimental Course (1-9)

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

PRMT 299 Special Topics (1-5)

A course designed to meet special departmental needs.

(PST) POWERSPORTS TECHNOLOGY

PST 101 Outdoor Power Equipment Technology (5 credits)

A combination theory and lab course covering basic tools and service equipment, operating principles and construction of outdoor power equipment engines. Instruction includes tune-up and service procedures for lawn and garden equipment, engine rebuilding, troubleshooting, and diagnostic procedures for outdoor power equipment engines and accessory support systems. Students will use manufacturers' recommended overhaul procedures and special tools to service outdoor power equipment. This is a half-semester course. (F, first half of semester)

PST 102 Snowmobile Technology I (5)

A combination theory and lab course covering two stroke operating principles, as well as complete service and troubleshooting of the snowmobile engine and its accessory systems. Discussion will cover engine diagnostic and overhaul procedures, as well as carburetion, lubrication systems, cooling systems, and other related items. This is a half-semester course. Prerequisite: PST 101 or completion of an NDSCS Automotive or Diesel Technology AAS degree. (F, second half of semester)

PST 104 Motorcycle and ATV Technology I (5)

A theory and lab combination course covering fundamental motorcycle and ATV engine theory and service practices. Instruction will include engines, transmissions and clutches. This is a half semester course. Prerequisite: PST 103 or a diploma/AAS in NDSCS Automotive Technology or Diesel Technology. (S, second half of semester)

PST 105 OPE and Snowmobile Fuel Systems (2)

A theory and lab combination course on outdoor power equipment and snowmobile carburetion and focusing primarily on fuel injection systems. (S, first half of semester)

- PST 110 Powersports Technology Internship I (6)**
The student will receive on-the-job experience at a small engine or powersports dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the second eight weeks of the first year. (F)
- PST 122 Fundamentals of Electricity (3)**
This is a lecture, demonstration, and performance course which covers the principles of electricity and applies it to electrical circuits, batteries, and other electrical components. It will include Ohm's Law, and schematic reading and test instruments, as well as the testing of commonly used electrical components. The student will have a hands-on approach to learning electrical fundamentals, as well as repairing and troubleshooting electrical problems. This is a half semester course. (F-second 8 weeks)
- PST 150 Outdoor Power Equipment I (3)**
A combination theory and lab course covering basic tools and service equipment, operating principles and construction of outdoor power equipment engines. Instruction includes tune-up and service procedures for lawn and garden equipment. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (F)
- PST 151 Outdoor Power Equipment II (2)**
A combination theory and lab application of engine rebuilding, troubleshooting and diagnostic procedures for outdoor power equipment engines and accessory support systems. Students will use manufacturers' recommended overhaul procedures and special tools to service outdoor power equipment. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (S)
- PST 152 Snowmobile Technology I (3)**
A combination theory and lab course covering two stroke operating principles, as well as complete service and troubleshooting of the snowmobile engine and its accessory systems. Discussion will cover engine diagnostic and overhaul procedures, cooling systems, and other related items. Students will use manufacturers' recommended procedures and specifications to properly service various makes and models of snowmobiles. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (F)
- PST 153 Snowmobile Technology II (2)**
A combination theory and lab course covering two stroke operating principles, as well as complete service and troubleshooting of the snowmobile engine and its accessory systems. Discussion will cover engine diagnostic and overhaul procedures, as well as carburetion, lubrication systems, and other related items. Students will use manufacturers' recommended procedures and specifications to properly service various makes and models of snowmobiles. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (S)
- PST 201 Motorcycle and ATV Technology II (5)**
This course will study basic theory and offer a hands-on lab application of service procedures for motorcycles and ATV's. Systems included will be engine, drive train, suspension, wheel, tire and fuel systems. Service department management procedures will be introduced. This is a half-semester course. Prerequisite: PST 104. (F, first half of semester)
- PST 202 Outboard Technology (5)**
This course will study basic theory and offer a hands-on lab application of service and troubleshooting of outboard marine engines. Systems included will be powerheads, gearcases, mid-section and electrical. This is a half-semester course. Prerequisite: PST 104. (S, first half of semester)
- PST 203 Stern Drive Technology (5)**
This course will study basic operating theory and offer a hands-on lab application of service and troubleshooting procedures of various inboard marine engines and drives. Systems included will be engines, transom assemblies, vertical drives, hydraulic accessory systems, propellers and winterization. This is a half-semester course. Prerequisite: PST 202. (S, second half of semester)
- PST 205 Outboard Fuel Systems (2)**
This course will study basic theory, service and troubleshooting of outboard marine engine fuel systems. Systems included will be electrical, fuel, lubrication and diagnostics. This is a half semester course. Prerequisites: PST 104, 105. (S, first half of semester)
- PST 210 Powersports Technology Internship II (6)**
The student will receive on-the-job experience at a small engine or powersports dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the second eight weeks of the second year. (F)

- PST X92** **Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- PST 297** **Cooperative Education (1-5)**
Cooperative education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.
- PST 299** **Special Topics (1–8)**
A class or activity designed or customized to meet the special needs of the student or to utilize faculty resources.

(PSYC) PSYCHOLOGY

- PSYC 100** **Human Relations in Organizations (2 credits)**
This course focuses on building successful and effective interpersonal relationships within organizational and other social environments. It includes an examination of human relations in business and industry with emphasis on how people can work effectively in groups to satisfy both organizational and personal goals. Motivation, emotional and mental health, communication techniques, and coping with stress are explored. Activities are used to encourage the application of concepts to enhance personal growth and insight and to increase social skills. (F, S, Su-as needed, O) ND:SS
- PSYC 103** **Addictions and Alternatives (2)**
This course offers an introduction to addiction, addictive behaviors and the physical, mental, and emotional effects on the individual and the family. Topics include theoretical perspectives on abuse, pharmacological characteristics of commonly abused substances, and stages of dependence and addiction. Alternative healthy behaviors and lifestyles choices will also be emphasized. (S)
- PSYC 111** **Introduction to Psychology (3)**
An introductory survey of the scientific study of human behavior and mental processes. The course will consist of an examination of psychology as a science and a profession. It will explore the biological foundations of behavior, sensing and perceiving the physical world, and normal and altered states of consciousness. The course will examine forms of learning, language and higher cognitive processes such as memory, thinking and problem-solving. This lecture course will focus on motivation, emotion, life-span development, theoretical views of personality, personality assessment, stress and coping, health and behavior, abnormal behavior and its treatment, and social psychology. (F, S, O) ND:SS
- PSYC 230** **Educational Psychology (3)**
This course focuses on current psychological principles as they apply to teaching and learning. Using human development as a framework, the student will investigate learning theory and practice, motivation, classroom management, planning and effective teaching, and the evaluation of students. Prerequisite: PSYC 111. (S, O) ND:SS
- PSYC 240** **Industrial/Organizational Psychology (3)**
An introduction to the application of the principles and methods of psychology to the workplace. Specific topics include employee selection, training, organizational behavior, leadership, conflict and cooperation, motivation, job satisfaction and morale, performance appraisal and stress in the workplace. Prerequisite: PSYC 111. (As needed). ND:SS
- PSYC 250** **Developmental Psychology (3)**
A survey of the psychology of human life-span development. The emotional, intellectual, physical, perceptual and social development of the individual from conception to death is examined. (F, S, Su, O) ND:SS
- PSYC 255** **Child and Adolescent Psychology (3)**
Overview of theories of human development from conception through adolescence. An introduction to the emotional, intellectual, physical, perceptual, and social development of the child from conception through adolescence. The relationship between development and parenting will also be explored. (F, S, O) ND:SS
- PSYC 265** **Motivational Interviewing (3)**
This course will include basic emphasis on case management, important issues in working with clients and learning practical skills regarding communication. The course is based on the premise of empowering clients through collaboration with appropriate providers. (S)

- PSYC 270 **Abnormal Psychology (3)****
 A survey of the classification, symptoms and etiology of psychology disorders. The student will examine the major psychopathologies such as anxiety disorders, mood disorders, substance-use disorders, and the schizophrenic disorders with a focus on etiology, diagnostic criteria, classification nomenclature and treatment approaches. The student will also explore the Diagnostic and Statistical Manual DSM-5 and its classification scheme. Prerequisite: 3 credits in psychology. (F, S, O) ND:SS
- PSYC 290 **Volunteer Internship (1-3)****
 Supervised placement in local agencies, organizations, and educational institutions to give the student experience in and to cultivate civic duty, volunteerism and the assistance of those in need. Students may also intern at a career-related site to evaluate and validate their vocational choice. (F, S, Su)
- PSYC 291 **Volunteer Internship (1-3)****
 Supervised placement in local agencies, organizations, and educational institutions to give the student experience in and to cultivate civic duty, volunteerism, career exploration and the assistance of those in need. Students may also intern at a career-related site to evaluate and validate their vocational choice. (F, S, Su)
- PSYC X92 **Experimental Course (1-9)****
 A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.
- PSYC 299 **Special Topics (1-9)****
 A course designed to meet special departmental needs.

(RAMT) ROBOTICS, AUTOMATION AND MECHATRONICS TECHNOLOGY

- RAMT 101 **Applied DC Theory (4 credits)****
 Theory/lab analysis of DC resistive circuits using Ohm's Law and Kirchhoff's Laws with advanced analysis utilizing various circuit theorems and conversions will be studied. Computer analysis of DC resistive circuits along with the study of power, energy, capacitors and inductors in DC applications also will be examined. (F)
- RAMT 103 **Applied AC Theory (4)****
 A theory/lab course studying the fundamentals and applications of AC single phase and three phase systems. Electromagnetism, RLC series and parallel circuits, power factor, single and three phase AC transformers and motors, and the effects of harmonics will be covered in this course. Prerequisite: RAMT 101. (F)
- RAMT 107 **Mechanical Drives and Maintenance I (2)****
 This combined lecture/lab course will explore the use of basic mechanical systems and components and their applications to industrial machinery. Emphasis is given to how these components work, their use in mechanical systems, and proper installation and maintenance procedures. Topics to be covered will include: precision measurement, belt drives, bearings/seals, chain drives, gear drives, and couplings. (F)
- RAMT 109 **Mechanical Drives and Maintenance II (2)****
 This course will expose the student to multiple predictive maintenance technologies used in industry. The course will cover the theory behind, and application of, the following technologies in use: thermography, ultrasonic detection, vibration analysis, oil/grease analysis, stroboscopic analysis, and motor circuit analysis. The course will also explore current best practices in precision machine alignment, including belt/chain alignment and rotating machinery alignment. The student will use the textbook, case studies from industry, and some hands-on exercises to explore these topics. Prerequisite: RAMT 107. (S)
- RAMT 120 **3D Modeling and Design (3)****
 This is a lecture and laboratory class dealing with the theory and application of Computer Aided Drafting (CAD) and additive manufacturing techniques (also known as 3D printing). Using CAD software and Makerbot 3D printers, students will learn how to design and create basic parts and items using common 3D printer materials. Emphasis will be placed on designing parts with the minimum amount of printer materials required and minimizing printing time. (F)
- RAMT 137 **Print Reading, Drafting and Safety (2)****
 This is a lecture and laboratory class dealing with the theory and application of Computer Aided Drafting (CAD), using CAD software, as well as reading and interpretation of prints, schematics and the use of symbols. The OSHA 10-hour safety course for general industry will be completed as part of this class. (F)

- RAMT 202** **PLC's II (3)**
This is a lecture and laboratory course dealing with the theory, construction, application, installation, and programming of microprocessor-based programmable controllers. Logic networks solving typical industrial control problems are developed and programmed into a variety of controllers to learn the limitation and capabilities of each machine. This course is an 8-week class. Prerequisite: ECAL 243. (F)
- RAMT 203** **Machine Safety and Panel Building (3)**
This course will cover the terms, theory, and practical applications machine safety systems and panel building requirements in modern automated equipment. (F)
- RAMT 208** **Information Technology for Technicians (2)**
This course will cover the terms, theory, IP addressing, Ethernet concepts, and practical applications of networks. (S)
- RAMT 221** **Robotics II (3)**
This course is a combined lecture and lab class which will cover advanced robotics programming, troubleshooting, maintenance, and interfacing the robots to other peripheral equipment. Areas of focus for this course will include programming, integrating, troubleshooting, and repairing of robotic systems. Students will be involved in lectures, discussions, and hands-on equipment labs. Prerequisite: ECAL 224. (F)
- RAMT 223** **Solid State Systems Lab (4)**
This course covers the foundation of electronics, the devices used in electronic circuits, how they function, and the proper handling of electronic components. The course covers the proper operation and use of test equipment such as multi-meters and oscilloscopes used in industry for testing and troubleshooting equipment. In addition, the course covers sensor systems used in industrial automation applications. (F)
- RAMT 224** **Robotics Systems I (3)**
This combined lecture and lab class will cover basic robotic handling and operations as delivered through Fanuc Robotics C.E.R.T. curriculum. Students will also become familiar with the theory, setup, and operation of robotic vision systems, as well as basic electrical and mechanical maintenance/troubleshooting of industrial robots. Students will be involved in lectures, discussions, and hands-on equipment labs. (S)
- RAMT 225** **Digital and Pneumatic Systems (2)**
This is a lecture/lab course that will cover digital electronics and the principles of fluid power systems. (S)
- RAMT 240** **Principles of Project Management (2)**
This course will cover the theory and practical application of project management. The student will be assigned a project and the student will develop drawings, develop material lists, calculate cost inputs, and develop a project timeline. (S)
- RAMT 243** **PLC's I (3)**
This is a lecture and laboratory course using Siemen's platform programmable logic controls systems. The class will address the theory, construction, application, installation, and introductory programming of PLC's. (S)
- RAMT 244** **System Integration and Troubleshooting (2)**
This course will result in the successful commissioning of an assigned build project based on the project developed in RAMT 240 (Principles of Project Management). Prerequisite: RAMT 240. (S)
- RAMT 246** **Quality Assurance Standards and Methods (3)**
This course is a lecture course that will introduce the student to the concept of statistical analysis and quality assurance as applied to the manufacturing and maintenance environment. Through lecture, discussion, case studies from industry, and exercises, the student will gain a basic understanding on how data is collected, analyzed, and used in the day-to-day operations of a modern facility for process improvement, defect/waste elimination, and risk/hazard assessment. The course will also explore the following Lean Manufacturing and Maintenance Management tools and their application: Kaizen, Six Sigma, 5S, 5 Why, Root Cause Analysis, and Wrench Time Studies. (S)
- RAMT 250** **Drives and Servo Systems (2)**
This combined lecture/lab course will explore the commissioning and operation of Siemens variable frequency drives and servo control systems. Students will gain an understanding of the operational theory of these components, the usage of these systems in industrial settings, and basic programming protocols. (S)

RAMT 297**Cooperative Education (2)**

Cooperative Education allows students to apply classroom study with a paid work experience, exposing the student to an operational facility that uses Robotics, Automation and Mechatronics Technology program principles in their daily operations. The student will work alongside operations/maintenance personnel at a department approved worksite to gain an insight to the RAMT career field. It is recommended that the student has successfully completed one year of academic study.

(REFG) REFRIGERATION AND AIR CONDITIONING TECHNOLOGY**REFG 101****Refrigeration Technology (3 credits)**

This lecture-based course will touch on the following aspects of the refrigeration, heating and air-conditioning trade: safety as it pertains to the HVAC/R industry, tools and their uses, sheet metal layout and fabrication, iron pipe threading and fabrication, copper tubing joining methods and PVC piping. The class will thoroughly study the principals of heat transfer, refrigerants and basic refrigeration cycle. Refrigerant manifold gauge attachment and removal, refrigerant phases, and recovery system evacuation will also be covered in detail. This lecture is accompanied by the fabrication lab (REFG 111) and refrigeration systems lab (REFG 113) to allow application of content covered in this lecture. Corequisites: REFG 111 and REFG 113. (F)

REFG 102**Refrigeration Technology (3)**

An in-depth study of the four essential components of the refrigeration system such as: evaporators, condensers, compressors and metering devices will be included in this course. Normal system operating conditions will be discussed for a variety of refrigeration and air conditioning applications. Understanding normal operating conditions will be essential in learning troubleshooting techniques. This course will begin with a review of the theories of refrigerants, refrigerant recovery methods, and system evacuation. Prerequisite: REFG 101. (S)

REFG 104**Refrigerants: Chemistry and Ecology (1)**

With an emphasis on decreasing the impact on the environment by improved service techniques, study in this course will prepare the student to practice more environmental acceptable procedures. Study in this course will include: The chemical composition of the refrigerants commonly used in the refrigeration and air conditioning industry, effects of the refrigerants on the environment, service procedures recommended by the Environmental Protection Agency for preventing the release of refrigerants to the atmosphere. During the course the students will examine oils and the appropriate application, changing, and disposal methods. This course is designed to be a concentrated study to help the student pass the EPA Refrigerant Certification Exam. (S)

REFG 110**Blueprint Reading and Estimating (2)**

In the HVAC/R industry it is imperative that professionals have a good working knowledge of blueprints. Blueprint reading and estimating learning outcomes are measuring and scaling skills, identification of symbols, and definitions of pertinent terms. The student will work with plan views, elevations, sections, details and specifications, and show how it is possible to determine the scope of the job and formulate a list of materials needed. Time will also be spent learning to determine how the building designer intended the HVAC/R equipment to be installed. No prerequisites are required. (F)

REFG 111**Fabrication Lab (2)**

In the first eight weeks of this first semester course will be a practical hands-on counterpart to the REFG 101 theory class. It will introduce the student to the fabrication of sheet metal air distribution components, iron gas piping, copper tubing and PVC piping components. The activities will introduce the student to the construction and mechanical skills necessary for the installation of heating, ventilating, air conditioning and refrigeration equipment. REFG 111 will provide actual fabrication tools and equipment where the student will be able to practice fabricating projects until they are acceptable trade quality projects. Sheet metal layout, piping leak testing, threading, priming, gluing, silver soldering and silver brazing are examples of activities in this lab. Corequisite: REFG 101. (F)

REFG 112**Domestic and Residential Systems Lab (2)**

This course will allow the student to apply refrigeration fundamentals to actual domestic and residential systems. Diagnostics, repairs and component replacements will be applied to refrigerators, freezers, window air conditioners, de-humidifiers and central air conditioning systems. There will also be application opportunities for the knowledge learned in REFG 102. A key component of the course will be providing repair reports on two separate pieces of equipment that the student has provided. Prerequisites: REFG 101, REFG 111 or equivalent. (S)

REFG 113 Refrigeration Systems Lab (2)

This second eight-week course in the first semester will be a practical hands-on counterpart to the REFG 101 theory class. It will introduce the student to the refrigeration system and allow the student to take necessary readings and measurements to solidify their understanding of a simple refrigeration system. Also, there will be introductions and opportunities to use evacuation, refrigerant recovery and refrigerant charging equipment. Corequisite: REFG 101. (F)

REFG 121 Electrical Theory I (3)

An introduction to electrical theory, REFG 121 will allow study of the theories of electricity with an emphasis on how these theories apply to the HVAC/R industries. It will begin by examining atomic theory and how to use this knowledge to explain electrical pressure, current flow, resistance and electrical power. There will be an emphasis on Ohm's Law, series circuits, parallel circuits and series-parallel circuits. The student will be instructed on electric meters and their usage. Transformers, Alternating Current and Power Distribution Systems will also be studied. The course will also provide instruction in the components, symbols and circuits used in the HVAC/R industry. Corequisite: REFG 123. (F)

REFG 122 Electrical Theory II (3)

From motor theory to HVAC/R components to the wide varieties of electrical diagrams, the course focus is to give the student a strong background in electrical understanding necessary to install and service heating, ventilating, air conditioning and refrigeration systems. Special emphasis will be applied to troubleshooting techniques and skills. This course will provide an in-depth look at electric motor theory while examining electrical inductance and capacitance. Five motor types will be studied with an emphasis on operation, selection and application, as well as troubleshooting techniques. Motor starting dynamics and starting components will be studied as well. The course will cover the wide variety of components and circuits that are likely to be encountered in the HVAC/R industry. Electrical circuits and diagrams will be studied in-depth. Prerequisites: REFG 121 and REFG 123 or equivalents. (S)

REFG 123 Electrical Lab I (2)

A counter-part to the electrical theory class this course will allow the student to examine the electrical laws of voltage, current, resistance, and power by connecting circuits, measuring electrical data, and then comparing this data to the calculated values. Electrical meter operation and application, as well as safety practices will be focal points of the course. Control circuits will also be designed and examined. Emphasis will be placed on learning a solid understanding of the electrical fundamentals and troubleshooting skills necessary to work in the HVAC/R industry. Corequisite: REFG 121. (F)

REFG 124 Electrical Lab II (2)

This course will focus on preparing students for success in the HVAC/R industry. Because of the many electrical drive motors, electrical controls and in general, the large amount of electrical type problems likely to be encountered, the technician needs to be skilled in diagnostics, circuit diagrams and electrical meter application. This course will prepare students to that end. Students will be exposed to real circuits. Placing the volt, ohm and amp meter test leads on the circuit to discover what troubleshooting clues the readings will indicate. Time will be spent creating circuits by reading schematic wiring diagrams. Participants will be creating wiring diagrams from looking at existing diagrams. Taking volt, ohm and amperage readings for preventive maintenance will also be an activity in this class. Electrical simulators will be utilized by the students during the duration of the course. Prerequisites: REFG 121 and REFG 123. Corequisite: REFG 122. (S)

REFG 201 Refrigeration Technology (3)

Green is the emphasis in this course with an in-depth analysis of the refrigeration cycle. Students will use Pressure/Enthalpy diagrams to learn how dynamically the system operates and how changes in any area will affect the entire system. Proper piping and pipe sizing techniques will be studied and applied. The efficiency of the refrigeration system will be the focus. Prerequisites: REFG 101, REFG 102. (F)

REFG 202 Refrigeration Technology (3)

This course will provide a study of commercial refrigeration systems from a service and installation perspective. This will include studies of heat pumps, supermarket systems, ice making equipment and restaurant/food service equipment. The course emphasis will include system charging techniques, for peak efficiency, maintenance and troubleshooting. Prerequisite: REFG 201. (S)

REFG 211 Commercial Components Lab (2)

This course will explore the special components that are used with commercial refrigeration equipment and examine their application in operating systems. Attention will be given to system balance, in-depth compressor analysis, defrost methods, capacity controls, head pressure controls and refrigerant oils and temperature control methods. Prerequisites: REFG 101, REFG 102, REFG 112, REFG 113 or equivalents. (F)

- REFG 212 **Advanced Systems Lab (2)****
 This course will introduce students to more advanced systems such as parallel rack systems, ice machines, compound systems and cascade systems. An emphasis will be placed on developing HVAC/R troubleshooting techniques. Prerequisites: REFG 201, REFG 202, REFG 211 or equivalents. (S)
- REFG 226 **Building System Controls (3)****
 This course will begin with a review of electrical theory, relay logic, schematic diagram interpretation and troubleshooting. It will then introduce students to different automatic control systems used in the HVAC/R industry. As time permits, the course will begin with electro-mechanical controls and then proceed to pneumatics, direct digital controls, programmable logic controls and variable frequency drives. Prerequisites: REFG 121, REFG 122, REFG 123, REFG 124. (S)
- REFG 231 **Air Conditioning Design (3)****
 A discussion and completion format this course covers psychometrics, air quality, building envelope, air exchange and humidification. Emphasis is placed on energy efficiency as it pertains to duct design, lay out and balancing. When available, balancing will take place on site utilizing real buildings. The course includes classroom, traditional lab, homework and computer lab and building location work. Prerequisites: REFG 101, REFG 102, REFG 111, REFG 113. (F)
- REFG 232 **Air Conditioning Design (3)****
 Students will examine age-old questions. How big is big enough? How does one properly determine heating and cooling system size? With the energy efficient equipment that is available to us today in the HVAC industry, there comes the responsibility to size the equipment to the building energy loss or gain. Why size it correctly? Customer comfort, equipment life span and trouble-free energy efficient performance are a few of the many good reasons. Green technology applications are a focus of study in this course. A working knowledge of the basics necessary to see HVAC system installation from sizing, planning and layout, selecting equipment, material list, to the completed balanced forced air system. Prerequisite: REFG 231. (S)
- REFG 253 **Heating Equipment Theory (2)****
 This subject matter will provide a broad exposure to a wide variety of heating equipment and their service needs. There will be in-depth discussion on gas, oil and electric heating equipment, as well as the mechanical, fuel combustion and electrical service. This course ties together how the installation of equipment affects the efficiency, all-around performance and length of service equipment will have for the end user. This course was green before green was a popular word. The course covers most aspects of heating service and is accompanied by the heating equipment lab to allow application of content covered in this lecture. Prerequisites: REFG 101, REFG 102, REFG 121, REFG 123 or equivalents. (S)
- REFG 254 **Heat Pump Lab (2)****
 The Heat pump is back to stay and this course will explore air source and geothermal heat pumps. This study will include why heat pumps are a good alternative energy source. Students will analyze control systems, refrigeration components and the air requirements of heat pump systems. Time will be spent investigating how the refrigerant circuit differs from an air conditioner. Students will explore and wire different systems that employ back-up heat systems, dual-fuel systems and off-peak options. The heat pump will be examined from both the installation and service technician's perspective. Due to the importance of energy efficiency, systems will also be analyzed and adjusted to ensure design performance efficiencies. Prerequisites: REFG 101, REFG 102, REFG 121, REFG 123 or equivalents. (F)
- REFG 255 **Heating Equipment Lab (3)****
 The subject matter will provide a broad exposure to a wide variety of heating equipment and their service needs. Gas, oil and electric heating equipment will be explored, taken apart, reassembled and problems troubleshot. REFG 255 ties together how installation, good or bad, will affect the efficiency and length of service to the end user. This course accompanies a heating equipment lecture and covers the hands-on aspects of heating service application. Prerequisites: REFG 121 and REFG 123 or equivalents. (S)
- REFG 256 **Hydronic Heating Systems (3)****
 The study of hydronic heating from boiler operation to the types of application: forced air, convection and radiant. The course includes classroom and laboratory assignments, and will provide a working knowledge of the three types of hydronic heating, the design features and the proper installation of hydronic heating systems. Prerequisites: REFG 231 or equivalent. (S)
- REFG X92 **Experimental Course (1-9)****
 A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

REFG 297 Cooperative Education (1-5)
Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

REFG 299 Special Topics (1-9)
A course designed to meet special departmental needs.

(RELS) RELIGION

RELS X92 Experimental Course (1-9 credits)
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

RELS 299 Special Topics (1-9)
A course designed to meet special departmental needs.

(SOC) SOCIOLOGY

SOC 110 Introduction to Sociology (3 credits)
An introductory analysis of the nature of society, the interrelationship of its component groups and the process whereby society persists and changes. The concept of culture, the process of socialization, social inequalities (such as class, gender, age and race), minority groups, the family and social change are the main topics discussed. (F, S, O) ND:SS

SOC 115 Social Problems (3)
A sociological analysis of major social problems. Emphasis is placed on crime and justice, race relations, drug and alcohol abuse, wealth and poverty, and the environmental themes of population and pollution. (F, O) ND:SS

SOC 220 Family (3)
A sociological examination of the institution of the family with focus on courtship, marriage and the family. Practical problems in communication and child rearing are explored. (F) ND:SS

SOC 221 Minority Relations (3)
A study of the relations between advantaged and disadvantaged groups in American society. The experience and present status of such racial and ethnic groups as the Native American, Black, Hispanics, WASP's, Jews, and Asians are examined. (F, F/S/Su-online) ND:SS

SOC X92 Experimental Course (1-9)
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

SOC 299 Special Topics (1-9)
A course designed to meet special departmental needs.

(SOIL) SOIL SCIENCE

SOIL 210 Introduction to Soil Science (3 credits)
Physical, chemical and biological properties of soils as related to use, conservation and plant growth. (F) ND:SCI

SOIL 222 Soil Fertility and Fertilizers (3)
Principles of plant nutrition and soil nutrient availability; soil testing and fertilizer recommendations and management. Macronutrient emphasis. Prerequisite: SOIL 210. (S)

SOIL X92 Experimental Course (1-9)
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

See also Ag Economics (AGEC), Agriculture (AGRI), Animal Science (ANSC), and Plant Science (PLSC)

(SWK) SOCIAL WORK

SWK 255 **Social Work in a Modern Society (3 credits)**

This course is designed to provide an introduction to the profession of social work. Course content includes the history and development of the profession; the assumptions which underlie social work goals, functions and methods; the professional values guiding practice; and description of practice methods. The course also offers the student opportunities to learn about social roles and practice settings. (F) ND:SS

SWK 256 **Development of Social Welfare (3)**

This course covers the history, value, political and economic conditions that influence the development and provision of social welfare services. Information about inequality and the major social welfare programs that benefit the disadvantaged is included. A basic analytic model will be presented to evaluate social welfare policies. Prerequisite: SWK 255. (S) ND:SS

SWK 297 **Student Internship (4)**

As an extension of the competencies developed in subsequent course work, this course consists of a 160-hour practicum in an approved human service setting. The course is designed to provide students with the opportunity to develop and apply program-related competences and skills. Prerequisites: All other core curriculum courses must be completed with a grade of "C" or better prior to students enrolling in SWK 297.

SWK X92 **Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

(TECH) TECHNOLOGY

TECH 109 **Air Conditioning (2 credits)**

This lecture/lab type course covers various air conditioning and heating units used on modern vehicles and other equipment. The student will learn principles of mobile heating, cooling, and ventilation, and proper recovery, repair, evacuation, leak detecting, and trouble-shooting procedures. Students will test for 609 Certification for mandatory refrigerant recovery and handling procedures. (F, S)

TECH 121 **Engine Fundamentals (3)**

A theory and lab course covering basic engine operating principles, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures, measurement fundamentals and basic engine troubleshooting. This is a half-semester course. (F, S)

TECH 130 **Industrial Safety (2)**

A basic study covering occupational safety standards and codes with emphasis on applications to typical industrial, construction and shop situations. Topics include: the role of OSHA and other regulatory agencies, fire protection, hazardous materials, personal protection, operational and construction safety, as well as the study of accident causation and prevention. (As needed)

TECH X92 **Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

TECH 299 **Special Topics (1-9)**

A course designed to meet special departmental needs.

(THEA) THEATER

THEA 201 **Theatre Practicum (1 credit)**

Participation in various activities of theatrical production. May be repeated. (F, S) ND:FA

THEA 270 **Stagecraft (1)**

An introduction to the crafts and technologies of theater production. May be repeated. (F, S) ND:FA

(UAS) UNMANNED AERIAL SYSTEMS

UAS 111 **Introduction to UAS (2 credits)**

This course will take a look into the utilization of Unmanned Aircraft Systems (UAS) in various industries. Students will learn pre-flight policies and procedures, flight operation, data collection, and post-flight data processing utilizing Pix4D software. (F)

- UAS 112 Unmanned Aircraft Systems Certification (2)**
This course will prepare students for the FAA certification exam for the use of Unmanned Aircraft Systems (UAS) in business and industry. Students will learn the rules and regulations regarding UAS operation, as well as basic aeronautical knowledge required by the FAA. (F)
- UAS 121 UAS Advanced Data Collection (2)**
Students will learn the advanced principles of photogrammetry and the utilization of UAS for surface mapping and 3D modeling of structures. Also covered in this course is the understanding and use of thermal imaging; light detection and ranging (LiDAR); normalized difference vegetation index (NDVI); and other advanced data collection. Prerequisite: UAS 111. (F)
- UAS 122 UAS Photography and Videography (2)**
Students will learn advanced aerial photography, videography, aerial inspections, and thermal imaging utilizing UAS. Photo and video editing using Adobe Photoshop and Premiere Pro will also be covered in the course. Prerequisite: UAS 111. (S)
- UAS 132 Advanced UAS Flight (2)**
Students will learn advanced pre-flight preparations and flying techniques for UAS with and without navigation aid. Students will learn the techniques for flying UAS to obtain the best data collection including cinematic movements. Troubleshooting techniques will also be covered in the course. Prerequisite: UAS 111. (S)
- UAS X92 Experimental Course (1-9)**
A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

(WELD) WELDING

- WELD 151 Welding Theory I (3 credits)**
This theory course introduces the processes of Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), and Oxy-Fuel Cutting (OFC). Safety for the student such as Personal Protection Equipment (PPE) and safe welding practices in the welding shop are emphasized. Welding and cutting equipment, selection of welding supplies and materials that are used in industry are introduced. The use of welding symbols and blueprint reading will be discussed and put into practice. This class may also require the need to attend field trips that include industry tours outside of the classroom. Corequisite: WELD 153. (F)
- WELD 152 Welding Theory II (3)**
This theory course focuses on advanced lessons in Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), and Oxy-Fuel Cutting (OFC). Flux Core Arc Welding (FCAW) and Plasma Arc Cutting (PAC) are also introduced. The course will also study welding symbols, drawings, nonferrous welding applications, welding codes, specifications and tests with special emphasis on the American Welding Society (AWS) welder qualifications. In addition, a resume and mock job interview process will be required and evaluated. This class may require the need to attend field trips that include industry tours outside of the classroom. Prerequisite: WELD 151. Corequisite: WELD 154. (S)
- WELD 153 Welding Lab I (5)**
This course gives beginning instructions in laboratory safety, use of Personal Protection Equipment (PPE), with a strong emphasis on the safe handling of welding and cutting equipment. Basic hands-on instruction in Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Oxy-Fuel Cutting (OFC) on various thicknesses of metal, and the techniques used. Also covered are welding supplies and equipment maintenance. This class may also require the need to attend field trips that include industry tours outside of the classroom. Corequisite: WELD 151. (F)
- WELD 154 Welding Lab II (5)**
Instruction will consist of perfecting skilled welding on plate steel in all positions using Shield Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), and Flux-Core Arc Welding (FCAW). The cutting processes of Carbon Arc Cutting-Air (CAC-A) and Plasma Arc Cutting (PAC) will be practiced. Students will practice and weld plates in accordance to the American Welding Society (AWS) certification guidelines. This course will also have planned industry field trips, welding competitions (state and local), and career fairs when scheduled. Prerequisite: WELD 153. Corequisite: WELD 152. (S)

WELD 201**Welding Theory III (4)**

This course will provide the student with technical understanding in advanced welding theory which includes the study of electricity for the different welding and cutting processes. It will provide the student with a theoretical understanding of welding and cutting processes when using mechanical and computer controlled (CNC) equipment. It will provide the student with theory for writing Numerical Control (NC) programming. The course will also provide the student with theory on metallurgy pertaining to welding and cutting. A student portfolio will be designed. Prerequisite: WELD 152. Corequisite: WELD 211. (F)

WELD 202**Welding Theory IV (4)**

This course provides theory to develop welding skills necessary to make certified welds according to the American Welding Society (AWS), American Society of Mechanical Engineers (ASME), or American Petroleum Institute (API) Codes. Weld-ability of ferrous and non-ferrous metals, metal identification, nondestructive and destructive testing, industrial safety, and OSHA regulations will be covered. This course will also provide the student with a technical understanding of weld procedures and the advanced operation of welding equipment including robotic applications. The student will learn various advanced welding certification and inspection applications which include what it takes to become a Certified Welding Inspector and a CWI's inspection duties. Prerequisite: WELD 201. Corequisite: WELD 212. (S)

WELD 211**Welding Lab III (7)**

This course provides the student an opportunity to learn various advanced welding applications for pipe welding which include Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). The student will also learn about qualifications and certifications from various national welding codes and standards including an unlimited thickness qualification. This course will also provide the student with the technical understanding of calculating material and use of proper procedures for the completion of pipe and heavy plate weldments. The student will also learn a technical understanding of machine control cutting and robotic welding operations which include Numerical Control (NC) programming and teach pendant control. Prerequisites: WELD 152, WELD 154, MFGT 101, MFGT 123, MFGT 135, MFGT 137. Corequisite: WELD 201. (F)

WELD 212**Welding Lab IV (7)**

This course provides the student an opportunity to use on projects a variety of advanced welding applications which include Gas Metal Arc Welding- Pulse (GMAW-P), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Shielded Metal Arc Welding (SMAW). The student will learn advanced CNC plasma cutting, robotic welding, shear, and press brake controls to correctly operate fabrication equipment needed for the completion of projects. This course will provide the student with a technical understanding of tacking and welding techniques for completing projects to reflect industry standards. This course will provide the student with a technical understanding of calculating material and use of proper procedures for the completion of projects manufactured in the lab. Prerequisite: MFGT 140 and WELD 211. Corequisite: WELD 202. (S)

WELD 213**Fabrication Welding (7)**

This course provides the student an opportunity to learn additional advanced welding applications which include Gas Metal Arc Welding- Pulse (GMAW-P), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Shielded Metal Arc Welding (SMAW). The student will also learn additional advanced CNC cutting and robotic operations to correctly operate fabrication equipment. Prerequisite: WELD 211. Corequisite: WELD 202. (S)

WELD X92**Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

WELD 297**Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

WELD 299**Special Topics (1-15)**

A course designed to meet special departmental needs.

EMPLOYEE DIRECTORY

State Board of Higher Education

Mark Hagerott, Ph.D.
Chancellor

Dr. Casey Ryan, Ph.D.
Chair
Grand Forks
Term Expires June 30, 2025

Tim Mihalick
Vice Chair
Minot
Term Expires June 30, 2023

Kevin Black
Minot
Term Expires June 30, 2024

Danita Bye
Stanley
Term Expires June 30, 2026

Lisa, Montplaisir, Ph.D.
Faculty Advisor
Fargo
Term Expires June 30, 2023

Nick Hacker
Bismarck
Term Expires June 30, 2023

Sadie Hanson
Student Member
UND
Term Expires June 30, 2023

Michael Linnell
Staff Advisor
Minot
Term Expires June 30, 2023

Jeffry Volk
West Fargo
Term Expires June 30, 2025

Dr. John Warford
Bismarck
Term Expires June 30, 2024

North Dakota State College of Science

PRESIDENT'S OFFICE

Rod Flanigan, Ph.D., 2012
President

Kijja Holmes, B.A., 2009
Executive Assistant

VICE PRESIDENT

Lisa Karch, Ph.D., 2011
Vice President for Instructional Affairs

Havery G. Link, M.S., 1978
Interim Vice President for Student Affairs

Kim Dassenko, B.U.S., 2003
Office Manager

EMERITI

Jerry C. Olson, Ph.D., 1987-2000
President Emeritus

Don Engen, M.S., 1966-1998
Director Emeritus

James A. Horton, M.A., 1946-1982
Vice President Emeritus

Harlan Arneson, A.A.S., 1964-2007
Faculty Emeritus

Vernon E. Hektner, M.A., 1946-1984
Dean Emeritus

Rodney Casad, D.D.S., 1966-1994
Department Chair Emeritus

Don Kruckenberg, B.S., 1975-2005
Professor Emeritus

Gloria Dohman, Ph.D. 1976-2013
Associate Vice President Emerita

Robert J. Gette, M.S., 1965-2002
Vice President Emeritus

Margaret Wall, M.S., 1975-2013
Dean Emerita

Donald J. Tobin, M.S., 1967-1995
Vice President Emeritus

Barbara Bang, M.Ed., 1974-2016
Dean Emerita

Mercedes Morris, M.S., 1942-1985
Dean Emerita

Max Reinke, B.S., 1976-2016
Faculty Emerita

Rene Moen, M.S., 1972-1999
Director Emerita

INSTRUCTIONAL DEPARTMENTS

ACADEMIC SERVICES

Kara Gruenberg, B.S., 1992
Associate Professor/Department Chair

Cindy Lee Deuser, M.A., 2014
ASC/ELL Associate Professor

Leah Alsaker, M.F.A., 2020
Assistant Professor

Traci Eklund, B.A., B.S., 2011
Associate Professor

Karl Bakkum, M.F.A., 2020
Assistant Professor

Larissa Gilbertson, M.S., 2011
Associate Professor

AGRICULTURE

Craig Zimprich, M.S., 2008
Associate Professor/Department Chair

Anissa Hoffman, Ph.D., 2006
Associate Professor

Kelsey Hoffman, B.S., 2019
Assistant Professor
Adult Farm Management-Fargo

Chandra Langseth, M.S., 2020
Assistant Professor

Michael Radig, M.S., 2021
Instructor
Adult Farm Management-Wahpeton

Sheldon Schmiess, M.B.A., 2008
Associate Professor

Oybek Turayev, Ph.D., 2022
Assistant Professor

ALLIED DENTAL EDUCATION DEPARTMENT

Rhonda Edwardson, M.Ed., R.D.H., C.D.A., 2005
Associate Professor/Department Chair

Danielle Erickson, B.S., R.D.H., C.D.A., 2016
Associate Professor

Chanel Malone, B.A., R.D.A., C.D.A., 2014
Associate Professor
Dental Assisting Program Coordinator

Stacy Owens, M.Ed., R.D.H., C.D.A., 2011
Associate Professor

Mallory Regan, B.S., R.D.H., R.D.A., C.D.A., 2018
Assistant Professor
Dental Hygiene Program Coordinator

AUTO BODY REPAIR & REFINISHING TECHNOLOGY

James Erdahl, B.S., 1997
Associate Professor/Program Coordinator

Matthew Omodt, A.A.S., 2022
Instructor

AUTOMOTIVE TECHNOLOGY

Peter Pfeiff, A.A.S., 2019
Assistant Professor
Automotive Technology Program Coordinator

Michael Bitz, A.A.S., 2022
Instructor

BUILDING SYSTEMS

(including Electrical Technology and Mechanical Systems Technologies)

Ivan Maas, B.S. Ed., 1985
Associate Professor/Department Chair
Electrical Technology

Mark Eback, A.A.S., 2004
Associate Professor
Electrical Technology

Slade Fitzgerald, A.A.S., 2002
Associate Professor
Electrical Technology

Jeff Kukert, A.A.S., 2009
Associate Professor
HVAC/R Technology Program Coordinator

Tanner Oliphant, Certificate, 2021
Instructor
Plumbing Program Coordinator

Zachary Sheeley, A.A.S., 2021
Instructor
Electrical Technology

John Travis, B.S., 2006
Associate Professor
Electrical Technology

Mark Wood, A.A.S., 2001
Associate Professor
HVAC/R Technology

BUSINESS ADMINISTRATION & MANAGEMENT

(including Culinary Arts)

Gregory Anderson, M.S., 2000
Associate Professor/Department Chair

Kyle Armitage, B.S., 2003
Associate Professor
Culinary Arts Program Coordinator

Kathy Marquette, M.A., 1995
Associate Professor

Curt Schreiber, M.B.A., 2007
Associate Professor

Ann Smith, M.M., 2003
Associate Professor

Benjamin Whitmore, B.S., 2019
Associate Professor
Culinary Arts

CONSTRUCTION & DESIGN TECHNOLOGY

(including Architectural Modeling and Design Technology, Building Construction Technology, Land Surveying and Civil Engineering Technology, Construction Management Technology, and Unmanned Aircraft Systems)

Randy Stach, M.S., 1996
Associate Professor/Department Chair

Jeremy Hoesel, B.S., 2018
Assistant Professor
Building Construction Technology

Jeff Jelinek, A.A.S., R.L.S., 1998
Associate Professor
Land Surveying and Civil Engineering Technology
Program Coordinator

Lara Lekang, A.A.S., 2017
Associate Professor
Architectural Modeling and Design Technology

Nathan Longlet, A.A.S., 2022
Instructor
Architectural Modeling and Design Technology

Seth Simonson, A.A.S., 2014
Associate Professor
Land Surveying and Civil Engineering Technology

Bryan Wolfgram, B.S., 2001
Associate Professor
Building Construction Technology Program Coordinator

DIESEL TECHNOLOGY

(including John Deere Tech, CAT Dealer Service, Case IH and Komatsu)

Terry Marohl, B.S., 1992
Associate Professor/Department Chair

Patrick Anderson, Diploma, 2019
Instructor

Eugene Floersch, B.S., 2013
Associate Professor

Barry Frank, A.A.S., 2012
Associate Professor

Brian Hanson, A.A.S., 2013
Associate Professor

James Hartzell, A.A.S., 2020
Assistant Professor

Todd Kunkel, Diploma, 2021
Instructor

Joe Larsen, A.A.S., 2018
Assistant Professor

Evan Meier, A.A.S., 2019
Assistant Professor
Komatsu Program Coordinator

Michael Redding, A.A.S., 2011
Associate Professor
Case IH Program Coordinator

Michael Seedorf, A.A.S., 2018
Assistant Professor
CAT Dealer Service Technician Program Coordinator

Tyler Slettedahl, A.A.S., 2009
Associate Professor
John Deere Tech Program Coordinator

EMERGENCY MEDICAL SERVICES (EMS)

Ron Lawler, B.U.S., 2014
Department Chair

ENGLISH, COMMUNICATION & PERFORMING ARTS

Wade King, M.A., 1996
Associate Professor/Department Chair

Dana Anderson, M.A., 2013
Associate Professor

Kathryn Beherns, M.F.A., 2016
Assistant Professor

Dean Foley, M.A., 1994
Associate Professor

Adam Hollingsworth, Ph.D., 2016
Associate Professor

Ronda Marman, M.S., 2011
Associate Professor

Bryan Poyzer, M.Ed., 2015
Associate Professor/
Performing Arts Program Coordinator

Sybil Priebe, M.A., 2005
Associate Professor

HEALTH INFORMATION

Kaila Givens, DHS, RHIA, 2019
Assistant Professor/Department Chair

Martin Smith, M.S., RHIA, CCA, 2019
Assistant Professor

HEALTH, PHYSICAL EDUCATION & RECREATION

Jane Passa, M.Ed., 1999
Assistant Professor/Department Chair
Head Coach, Volleyball/Fitness Center Manager

Stu Engen, M.Ed., 2012
Athletic Director/Head Coach, Men's Basketball/
Home Event Coordinator

Eric Issendorf, M.S., 2018
Head Football Coach/Aquatics Coordinator

Park Masterson, B.A., 2017
Women's Basketball Coach/
Director of Fundraising and Marketing

Ryan Steffens, B.S., 2006
Grounds/Athletic Equipment Tech.

INFORMATION & COMMUNICATIONS TECHNOLOGY

Bonnie Schillinger, M.M., 1991
Associate Professor/Department Chair

Linda Fink, B.S., 1995
Associate Professor

John Kroshus, B.S., 1996
Associate Professor

MANUFACTURING TECHNOLOGIES

(including Autonomous Systems Technology (AST); Precision Machining Technology; Robotics, Automation and Mechatronics Technology (RAMT); and Welding Technology)

Steve Johnson, A.A.S., 1992
Associate Professor/Department Chair
Precision Machining Technology

Clinton Gilbertson, M.S., 2007
Professor/Welding Technology Program Coordinator

Vance Harthun, B.S., 2007
Associate Professor
Welding Technology

LeAnne Jaenisch, B.S., 2014
Associate Professor
Robotics, Automation and Mechatronics Technology

Joel Johnson, M.S., 1994
Associate Professor
Welding Technology

Lee Larson, A.A.S., 2005
Associate Professor
Welding Technology, NDSCS-Fargo

Jay Schimelfenig, A.A.S., 2002
Associate Professor
Precision Machining Technology

Lincoln Thompson, A.A.S., 2007
Associate Professor
Precision Machining Technology

Mitchell Van Vleet, A.A.S., 2014
Associate Professor
Welding Technology, NDSCS-Fargo Lead

Lonnie Wurst, B.A., 2014
Associate Professor
AST and RAMT Program Coordinator

MATHEMATICS & SCIENCE

Shannon King, M.S., 1999
Associate Professor/Department Chair

Susan Bornsen, Ph.D., 2011
Associate Professor

Margaret Brady, M.S., 2012
Associate Professor

Paula Comeau, Ph.D., 2020
Assistant Professor

Brian Hagelstrom, M.S., 2000
Associate Professor

Jan Kompelien, M.Ed., 2020
Assistant Professor

William Shay, Ph.D., 2006
Professor

NURSING

Debra Smith, M.S.N., R.N., 2019
Associate Professor/Department Chair

Kalai Brink, M.S.N., R.N., 2019
Assistant Professor

Jeri Christiansen, M.S.N., R.N., 2015
Associate Professor/P.N. Program Coordinator

Caleigh Differding, B.S.N., R.N., 2022
Instructor

Trina Fear, M.S.N., R.N., 2016
Associate Professor/R.N. Program Coordinator

Crystal Graening, M.S.N., R.N., 2020
Assistant Professor/Outreach Coordinator

Missy Jacobson, M.S.N., R.N., 2021
Instructor

McKenna Kvern, B.S.N., R.N., 2021
Instructor

Amy Medhaug, B.S.N., R.N., 2020
Assistant Professor

Reena Nadeau, M.S.N., R.N., 2022
Instructor

Emily Nelson, B.S.N., R.N., 2022
Instructor

Kayley Peterson, B.S.N., R.N., 2022
Instructor

OCCUPATIONAL THERAPY ASSISTANT

Elizabeth Schlepp, M.Ed., COTA/L, 1994
Associate Professor/Department Chair

Missi Twidwell, M.Ed., OTR/L, 2003
Associate Professor
Outreach Therapist Supervisor

Jennifer Lundblad, A.A.S., 2021
Outreach Therapist

PHARMACY TECHNICIAN

Melissa Krava, B.S., 2018
Assistant Professor/Department Chair

POWERSPORTS TECHNOLOGY

Luke Kasowski, B.S., 2005
Associate Professor/Program Coordinator

Mitchell K. Jobe, B.S., 1988
Associate Professor

SOCIAL & BEHAVIORAL SCIENCES

Char Schuler, M.S.W., 2005
Associate Professor/Department Chair

Marilyn Evenson, Ph.D., 2011
Associate Professor

Jeff Hart, M.A., 2007
Associate Professor

Jennifer Krueger, M.S., 2019
Assistant Professor

Michael Learn, Ph.D., 2020
Assistant Professor

Kelly Wolf, Ph.D., 2005
Associate Professor

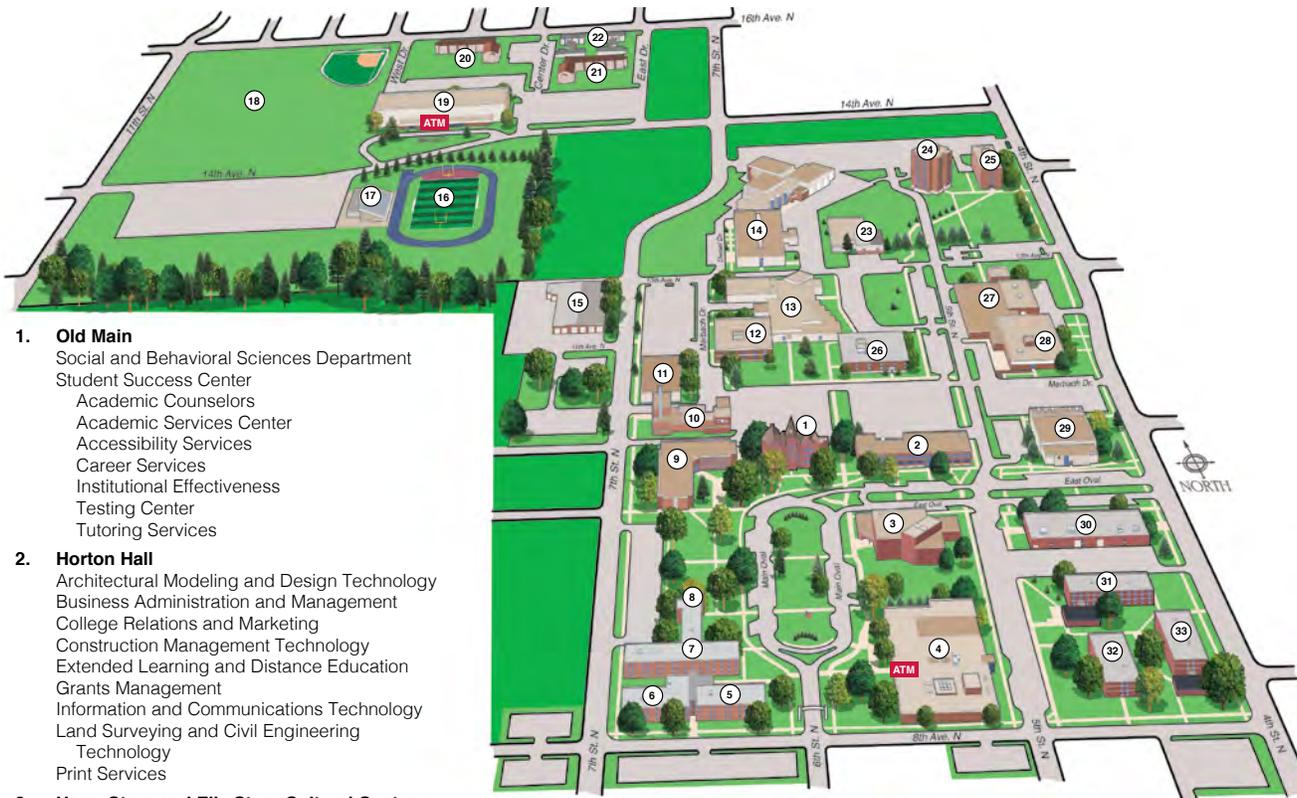
NDSCS DEPARTMENT PHONE NUMBERS

Department	Phone
Accounts Payable	701-671-2288
Alumni/Foundation.....	701-671-2247
Arts, Science and Business Division.....	701-671-2295
Athletics.....	701-671-2281
Bookstore	701-671-2125
Business Affairs.....	701-671-2216
College Relations and Marketing	701-671-2245
Customer Service Desk.....	701-671-2401
Dining Services	701-671-2321
Distance Education	701-671-2275
Enrollment Services	
Admissions	701-671-2521
Records	701-671-2521
Facilities Management	701-671-2313
Financial Aid.....	701-671-2207
Grants Management.....	701-671-2154
Human Resources.....	701-671-2903
Information Technology Services (ITS) Service Desk	701-671-3333
Library Services.....	701-671-2618
Mail Center	701-671-2825
NDSCS-Fargo.....	701-231-6900
NDSCS Police.....	701-671-2233
President's Office	701-671-2221
Print Services.....	701-671-2230
Residential Life.....	701-671-2224
Student Life Assistant Director.....	701-671-2109
Student Health and Wellness	701-671-2286
Student Success Center.....	701-671-3000
Vice President for Instructional Affairs Office.....	701-671-2416
Vice President for Student Affairs.....	701-671-2258
Workforce Affairs Training Division	701-671-2206

To reach these offices toll-free, call 1-800-342-4325 and use the extensions listed above.

NDSCS WAHPETON CAMPUS MAP

800 SIXTH STREET NORTH



- 1. Old Main**
Social and Behavioral Sciences Department
Student Success Center
Academic Counselors
Academic Services Center
Accessibility Services
Career Services
Institutional Effectiveness
Testing Center
Tutoring Services

- 2. Horton Hall**
Architectural Modeling and Design Technology
Business Administration and Management
College Relations and Marketing
Construction Management Technology
Extended Learning and Distance Education
Grants Management
Information and Communications Technology
Land Surveying and Civil Engineering
Technology
Print Services

- 3. Harry Stern and Ella Stern Cultural Center**
Alumni/Foundation
Bremer Bank Theatre
Performing Arts

- 4. Hektner Student Center**
ATM
Bookstore and Mail Center
Culinary Arts Department
Customer Service
Dining Services
Flickertail Dining Room
Information Technology Services
NDSCS Police
Student Life
The Alley/Game Room
Wild Grounds Café

- 5. Walton Residence Hall**

- 6. Schulz Residence Hall**

- 7. Forkner Residence Hall**

- 8. Riley Residence Hall**
Residential Life
Student Health and Wellness

- 9. Haverty Hall**
Admissions and Enrollment Services
Business Affairs
English, Communication and Performing Arts
Department
Financial Aid
Human Resources
Instructional Affairs
Mathematics and Science Department
President's Office
Safety
Veteran's Services

- 10. Central Heating Plant**

- 11. Mechanical Systems**
HVAC/R Technology
Plumbing

- 12. Barnard Hall**
Electrical Technology
HVAC/R Technology
Robotics, Automation and Mechatronics
Technology

- 13. Tech Center**
Agriculture Department
Arts, Science and Business Division
John Deere Tech
Manufacturing Department
HAAS Technical Education Center
Technologies and Services Division
Workforce Training Division
TrainND Southeast
ApprenticeshipND

- 14. Bisek Hall**
Case IH
Caterpillar Dealer Service Technician
Diesel Technology
Komatsu

- 15. Patterson Maintenance Center**
Central Receiving
Facilities Management
Motor Pool
Purchasing

- 16. Frank Vertin Athletic Field**

- 17. Earl "Skip" Bute Alumni Stadium**

- 18. Intramural Sports Field**
Gayle Miller Softball Complex

- 19. Clair T. Blikre Activities Center**
ATM
Athletics
Ed Werre Arena
Fitness Center
Health, Physical Education and Recreation
Pool

- 20. Northwest Apartments**

- 21. Southeast Apartments**

- 22. College Townhomes**

- 23. Building Construction Technology**

- 24. Nordgaard Residence Hall**

- 25. Robertson Residence Hall**

- 26. Mildred Johnson Library**
Instructional Technology
Library

- 27. Schuett Hall**
Automotive Technology
Snap-on Innovation Center
Powersports Technology

- 28. Trade Tech II**
Welding Technology

- 29. Mayme Green Allied Health Center**
Allied Dental Education
Health Information
Nursing
Occupational Therapy Assistant
Pharmacy Technician

- 30. Ballweber Hall**
Auto Body Repair and Refinishing

- 31. Babcock Hall**

- 32. McMahon Hall**

- 33. Satterlee Hall**

2021 NDSCS PLACEMENT REPORT

	Responding Graduates	Beginning Average Monthly Salary	Reported High Monthly Salary	Placement Rate
Agriculture [*]	22	\$3,302	\$4,853	100%
Architectural Drafting & Estimating Technology	4	-	\$3,900	100%
Associate in Science in Nursing (RN)	21	\$5,015	\$5,547	100%
Auto Body Repair & Refinishing Technology	3	-	-	67%
Automotive Technology [^]	11	\$3,221	\$4,680	88%
Building Construction Technology	6	\$3,787	\$5,526	100%
Business Management ^{**}	12	\$2,903	\$3,467	91%
Caterpillar Dealer Service Technician	13	\$4,468	\$5,157	100%
Construction Management Technology	8	\$3,727	\$4,853	100%
Culinary Arts ⁻	7	\$2,328	\$2,773	100%
Dental Assisting	21	\$3,706	\$4,333	100%
Dental Hygiene	14	\$5,583	\$7,800	100%
Diesel Technology ^{***}	40	\$3,744	\$6,067	100%
Electrical Technology ^{^^^}	38	\$3,483	\$7,575	94%
Emergency Medical Services (EMS) ⁻⁻	17	\$3,470	\$4,514	100%
Health Information ^{**}	7	\$3,802	\$4,853	100%
HVAC/R Technology	8	\$3,516	\$4,853	100%
Information & Communications Technology ^{^^}	20	\$3,230	\$5,287	95%
John Deere Tech	25	\$3,420	\$4,333	100%
Land Surveying & Civil Engineering Technology	6	-	-	100%
Mechanical Systems	-	-	-	-
Occupational Therapy Assistant	9	\$4,854	\$6,067	88%
Pharmacy Technician	10	\$3,131	\$4,853	90%
Plumbing	9	\$2,897	\$3,120	100%
Powersports Technology	2	-	-	100%
Practical Nursing	37	\$3,512	\$4,333	100%
Precision Machining Technology	8	-	-	67%
Registered Nursing (AAS)	18	\$4,908	\$6,041	100%
Robotics, Automation & Mechatronics Technology	14	\$3,643	\$5,278	92%
Tehnical Studies	2	-	-	100%
Unmanned Aircraft Systems	7	-	-	100%
Welding Technology	30	\$3,798	\$4,853	93%
TOTALS & AVERAGES¹	445	\$3,717	\$4,997	97%

NOTES:
¹Six responding students graduated from multiple programs. Totals have been adjusted on the Totals line to count these students once.
^{*}Agriculture (Includes Ag Business, Agronomy, Animal Science, Farm Management, Precision Agriculture, Ranch Management)
[^]Automotive Technology (Includes Automotive and Diesel Master Technician)
^{**}Business Management (Includes Administration and Finance, Business Technology Management, Marketing, Sales and Hospitality Services, Restaurant Management, General Business Management)
⁻Culinary Arts (Includes Chef Training and Management Technology, Restaurant Management)
^{***}Diesel Technology (Includes General Diesel, Case IH, Komatsu)
^{^^^}Electrical Technology (Includes Construction, Industrial, Master Technician)
⁻⁻Emergency Medical Services (EMS) (Includes Emergency Medical Technician (EMT), Paramedic Technology)
^{**}Health Information (Includes Health Information Technician, Medical Coding)
^{^^}Information and Communications Technology (Includes Information Systems Administrator, Information Technology Support, IT Forensics and Security, Web Design, Web Developer)
^{*}Jobs posted with NDSCS Career Services may be related to more than one academic program.



NORTH DAKOTA STATE COLLEGE OF SCIENCE

WAHPETON | FARGO | ONLINE

VISIT [NDSCS.edu](https://www.ndscs.edu)

**NORTH DAKOTA STATE COLLEGE OF SCIENCE
ENROLLMENT SERVICES**

800 6th Street North | Wahpeton, ND 58076
800-342-4325, ext. 3-2521
NDSCS.Admissions@ndscs.edu