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1 This curriculum is currently pending approval for Title IV (Financial Aid) funding by the U.S. Department of Education.
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For updated information, visit NDSCS.edu
2021-2022 ACADEMIC CALENDAR

FALL SEMESTER 2021
Aug. 18  Fall Opening Meeting for Faculty & Staff
Aug. 22  NDSCS-Wahpeton New Student Orientation
Aug. 23  NDSCS-Wahpeton New Student Departmental Orientation
Aug. 23  Classes Begin at 4 p.m.
Aug. 24  First Full Day of Classes
Aug. 27  1st 8-weeks Final Day to Add a Class
Aug. 27  1st 8-weeks Final Day to Drop a Class without Transcript Record*
Sept. 1  Full Semester Final Day to Add a Class
Sept. 1  Full Semester Final Day to Drop a Class without Transcript Record*
Sept. 6  Holiday (No Classes/Offices Closed)
Sept. 24  Homecoming Pep Rally (No Classes 11 a.m.-1 p.m.)
Oct. 1  1st 8-weeks Final Day to Drop a Class*
Oct. 5  Assessment Day (No Classes 8 a.m.-12 noon)
Oct. 15  1st 8-Week Session Ends
Oct. 18  2nd 8-Week Session Begins
Oct. 20  1st 8-Week Final Grades Must Be Entered by 9 a.m.
Oct. 22  2nd 8-weeks Final Day to Add a Class
Oct. 22  2nd 8-weeks Final Day to Drop a Class without Transcript Record*
Nov. 1  Registration Opens for Spring/Summer Semesters for Currently Enrolled Students
Nov. 3  Advising Day 8 a.m.-4 p.m. (Classes Resume at 4 p.m.)
Nov. 11  Holiday (No Classes/Offices Closed)
Nov. 12  Full Semester Final Day to Drop a Class*
Nov. 12  Full Semester Final Day to Withdraw from all Classes
Nov. 24  Fall Break (No Classes/Offices Open)
Nov. 25  Holiday (No Classes/Offices Closed)
Nov. 26  Fall Break (No Classes/Offices Open)
Nov. 26  2nd 8-weeks Final Day to Drop a Class*
Dec. 13-17  Final Exams
Dec. 22  Final Grades Must Be Entered by 9 a.m.
Dec. 24  Holiday (Offices Closed)
Dec. 31  Holiday (Offices Closed)

SPRING SEMESTER 2022
Jan. 10  NDSCS-Wahpeton New Student Orientation Activities
Jan. 10  Classes Begin at 4 p.m.
Jan. 11  First Full Day of Classes
Jan. 14  1st 8-weeks Final Day to Add a Class
Jan. 14  1st 8-weeks Final Day to Drop a Class without Transcript Record*
Jan. 17  Holiday (No Classes/Offices Closed)
Jan. 20  Full Semester Final Day to Add a Class
Jan. 20  Full Semester Final Day to Drop Class without Transcript Record*
Feb. 18  1st 8-weeks Final Day to Drop a Class*
Feb. 21  Holiday (No Classes/Offices Closed)
Mar. 4  1st 8-Week Session Ends
Mar. 7  2nd 8-Week Session Begins
Mar. 9  1st 8-Week Final Grades Must Be Entered by 9 a.m.
Mar. 11  2nd 8-weeks Final Day to Add a Class
Mar. 11  2nd 8-weeks Final Day to Drop a Class without Transcript Record*
Mar. 14-18  Spring Break (No Classes/Offices Open)
April 4  Registration Opens for Fall Semester for Currently Enrolled Students
April 6  Advising Day 8 a.m.-4 p.m. (Classes Resume at 4 p.m.)
April 8  Full Semester Final Day to Drop a Class*
April 15  Holiday (No Classes/Offices Closed)
April 18  Holiday (No Classes/Offices Open)
April 22  2nd 8-weeks Final Day to Drop a Class*
May 5  Agawasie Day (No Classes 12-7 p.m.)
May 9-13  Final Exams
May 13  Graduation (3 p.m.)
May 16-17  Instructional Departments Assessment Days
May 18  Final Grades Must Be Entered by 9 a.m.
May 30  Holiday (Offices Closed)

SUMMER SEMESTER 2021
June 7  Classes Begin
June 9  1st 4-weeks Final Day to Add a Class
June 9  1st 4-weeks Final Day to Drop a Class without Transcript Record*
June 13  Full Semester Final Day to Add a Class
June 13  Full Semester Final Day to Drop a Class without Transcript Record*
June 24  1st 4-weeks Final Day to Drop a Class*
July 1  1st 4-week Session Ends
July 4  Holiday (No Classes/Offices Closed)
July 5  2nd 4-week Session Begins
July 7  2nd 4-weeks Final Day to Add a Class
July 7  2nd 4-weeks Final Day to Drop a Class without Transcript Record*
July 15  Full Semester Final Day to Drop a Class*
July 15  Full Semester Final to Withdraw from all Classes
July 22  2nd 4-weeks Final Day to Drop a Class*
July 28-29  Summer Semester Final Exams
July 29  Summer Session Ends
Aug. 3  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 more than 115 years, NDSCS has provided a wide range of education for thousands of students who, upon graduation, become available to meet business, professional, and industrial needs. Today, we continue our mission as a comprehensive college encompassing liberal arts transfer programs, career and technical education, and workforce training.

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 Watertown 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, main 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 Watertown 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” Butte Alumni Stadium and Frank Vertin Field.

### 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 Goals

The North Dakota State College of Science will use a culture of continuous improvement that advances, supports and rewards successful learning by students, faculty and staff as it addresses the following 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 development 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 will assist 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.
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) at the National Automotive Technicians Education Foundation, Inc. (NATEF), 1503 Edwards Ferry Rd., NE, Suite 401, Leesburg, VA 20176, Phone: 703-669-6650
- 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 – Associated Equipment Distributors, Inc., 650 E. Algonquin Rd., Suite 305, Schaumburg, IL 60173, Phone: 630-574-0650
- Heath 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

For updated information, visit NDSCS.edu
Admission Requirements and 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.

Permanent Resident/Refugee
Admission requirements for permanent residents and refugees.
1. Refer to admission procedures for completing your admission/registration requirements.
2. Submit an official high school transcript. An in-progress high school equivalent.
3. Submit high school and/or college transcripts or GED test scores.

Submit test scores.
NDSCS does not accept faxed or emailed transcripts.

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.

Selecting courses will be required once all course work has been completed.

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

Selective and 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.

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:
1. Summer Semester (begins in June) – April 15
2. Fall Semester (begins in August) – July 1
3. 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. College transcripts from outside the United States must be 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/AdmissionsProcedure - New Applicants with International Coursework.

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.

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.

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 any crime in which the use of 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 check 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 and 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. All students are required to follow English and mathematics placement recommendations based on standardized test scores. Students under the age of 25 must present ACT scores and students age 25 and over will complete ACCUPLACER placement testing.

Students will be placed in the appropriate college English composition course according to their ACT English and reading test scores, and students will be placed in the appropriate mathematics course according to their ACT mathematics test scores. Students must take the ACCUPLACER placement test if ACT test scores are not available on the date of registration. Students may elect to take the ACCUPLACER placement test to challenge their course placement. If there is a difference between the ACT and ACCUPLACER placement, the best scores will be used.
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 his or her 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.
2021-2022 Tuition and 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.

Students pay tuition and per credit fees at the following rates:

<table>
<thead>
<tr>
<th>Residency¹</th>
<th>Tuition Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Dakota Resident</td>
<td>$150.11 per credit</td>
</tr>
<tr>
<td>Minnesota Reciprocity</td>
<td>$168.13 per credit</td>
</tr>
<tr>
<td>U.S. Resident, Manitoba &amp; Saskatchewan</td>
<td>$180.14 per credit</td>
</tr>
<tr>
<td>International</td>
<td>$262.70 per credit</td>
</tr>
<tr>
<td>Early Entry - Subsidized</td>
<td>$80.66 per credit</td>
</tr>
<tr>
<td>Early Entry - Unsubsidized</td>
<td>$142.71 per credit</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Class Location</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wahpeton Mandatory Fees²</td>
<td>$35.09 per credit</td>
</tr>
<tr>
<td>Fargo Mandatory Fees²</td>
<td>$23.61 per credit</td>
</tr>
<tr>
<td>Online Mandatory Fees²</td>
<td>$16.33 per credit</td>
</tr>
<tr>
<td>Online Access Fee</td>
<td>$36.00 per credit (does not cap)</td>
</tr>
<tr>
<td>Early Entry Mandatory Fees²</td>
<td>$5.54 per credit</td>
</tr>
</tbody>
</table>

² Mandatory Fees:
• Wahpeton Classes - Student Activity $18.76, ConnectND $5.50, Technology $8.79, Assessment $1.00, Placement $1.00, NDSA $.04
• Fargo Classes - Student Activity $7.28, ConnectND $5.50, Technology $8.79, Assessment $1.00, Placement $1.00, NDSA $.04
• Online Classes - ConnectND $5.50, Technology $8.79, 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:

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

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

Applicatioon 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
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. 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. These dates can be found at www.NDSCS.edu/Payment.

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 and 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 and 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 very significant 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 15 to meet the priority deadline date of April 15. Students are encouraged to complete the FAFSA online at www.FAFSA.ed.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.

### 2021-2022 Estimated Average Annual Budget

These amounts are estimates used for financial aid budgets and are based on 2021-2022 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 $842 for all states (excluding unusual costs, please contact the Financial Aid Office at 1-800-342-4325.

The average annual amount for fees is $842 for all states (excluding unusual costs, please contact the Financial Aid Office at 1-800-342-4325.

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

### Additional Costs by Program

Students in a number of academic programs should plan for additional costs 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.

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.

<table>
<thead>
<tr>
<th>Program</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture (1)</td>
<td>$1,586</td>
</tr>
<tr>
<td>Agriculture (2)</td>
<td>$346</td>
</tr>
<tr>
<td>Architectural Drafting Technology (1)</td>
<td>$2,486</td>
</tr>
<tr>
<td>Architectural Drafting Technology (2)</td>
<td>$380</td>
</tr>
<tr>
<td>Auto Body Repair &amp; Refinishing Technology (1)</td>
<td>$6,026</td>
</tr>
<tr>
<td>Auto Body Repair &amp; Refinishing Technology (2)</td>
<td>$1,086</td>
</tr>
<tr>
<td>Automotive Technology (1)</td>
<td>$9,486</td>
</tr>
<tr>
<td>Automotive Technology (2)</td>
<td>$1,060</td>
</tr>
<tr>
<td>Autonomous System Technician</td>
<td>$1,660</td>
</tr>
<tr>
<td>Building Construction (1)</td>
<td>$3,066</td>
</tr>
<tr>
<td>Building Construction (2)</td>
<td>$366</td>
</tr>
<tr>
<td>Business (1)</td>
<td>$576</td>
</tr>
<tr>
<td>Business (2)</td>
<td>$600</td>
</tr>
<tr>
<td>Caterpillar (1)</td>
<td>$8,326</td>
</tr>
<tr>
<td>Caterpillar (2)</td>
<td>$1,050</td>
</tr>
<tr>
<td>Construction Management Technology (1)</td>
<td>$2,540</td>
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<tr>
<td>Construction Management Technology (2)</td>
<td>$380</td>
</tr>
<tr>
<td>Culinary Arts (1)</td>
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<tr>
<td>Culinary Arts (2)</td>
<td>$850</td>
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<tr>
<td>Dental Assisting (1)</td>
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</tr>
<tr>
<td>Dental Hygiene (1)</td>
<td>$7,246</td>
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<td>Dental Hygiene (2)</td>
<td>$4,626</td>
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<tr>
<td>Diesel Technology (1)</td>
<td>$8,550</td>
</tr>
<tr>
<td>Diesel Technology (2)</td>
<td>$1,040</td>
</tr>
<tr>
<td>Diesel Technology - Case IH (1)</td>
<td>$8,396</td>
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<tr>
<td>Diesel Technology - Case IH (2)</td>
<td>$1,100</td>
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<td>$8,460</td>
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<tr>
<td>Electrical Technology (1)</td>
<td>$2,846</td>
</tr>
<tr>
<td>Electrical Technology (2)</td>
<td>$1,026</td>
</tr>
</tbody>
</table>

### **PERSONAL EXPENSES**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food/Entertainment</td>
<td>$756</td>
</tr>
<tr>
<td>Clothing</td>
<td>$540</td>
</tr>
<tr>
<td>Toiletries</td>
<td>$405</td>
</tr>
<tr>
<td>Transportation</td>
<td>$1,150</td>
</tr>
<tr>
<td>Loan Fees</td>
<td>$54</td>
</tr>
</tbody>
</table>

### Financial Aid

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
3. **Room/board amount is the total of a double room ($3,124) and a 225 meal plan ($3,544). All rates are for two semesters.**
Financial Aid

Dropping Out of College and Repaying Financial Aid

The federal government requires all colleges and universities to monitor the academic progress of all students, whether or not they receive federal aid. This involves more than maintaining the quality standard of a minimum GPA of 1.75 after the first year, or a 2.0 by the end of the second year. It also involves monitoring the quantity standard set to insure students are completing the academic work at an acceptable pace. Students on financial aid should be careful about dropping classes. At minimum, a student should complete at least 67 percent of the course work assigned during an academic year.

To drop a class or drop out of college, the first step is to stop at Student Success in Old Main. If it is not possible to stop in at the Dean’s office, it is important to contact the office via phone or in writing. A withdrawal notice will be issued, requiring a number of signatures from across campus notifying the respective offices of the student’s intent to leave school. Failure to follow this formal process easily can result in serious consequences to the student in the form of receiving all “F” grades on your permanent record for the work not completed. This also may result in unnecessary cost to you in other ways, such as not having certain costs credited on a timely basis.

For all students receiving U.S. Department of Education Title IV funds — Federal Pell grants, SEOG grants, State Incentive grants, Federal Stafford, Perkins or PLUS funds — the federal government has detailed policies on the return of these funds. The policy as summarized here only relates to students completely dropping out of college (dropping all classes not yet completed). A withdrawal date first must be established. For NDSCS, that date is considered to be the day NDSCS learns about the withdrawal by the student and/or the parent of the student, provided that date is still during the term. If the term is over and if the Enrollment Services office has not been informed of a drop date by the student and/or parent, the Enrollment Services office has the option of using the midpoint of the term or the last date of actual class attendance, as researched by contacting instructors.

It does not normally enter into the formal return of funds calculations. After determining the drop date for those students completely dropping out of college, one of the next steps is to determine what fraction of the term the student attended. For example, if the term included 120 calendar days, and the student withdrew during the 60th day of the term, 50 percent of the term would be considered to have been earned, and the remaining 50 percent would have to be returned. Likewise, if one dropped on the 30th day of a 120-day term, the student would have earned 25 percent of the aid, and the rest would have to be returned. After the 60 percent point in time of the semester, or after 72 days if the term had 120 calendar days, no return of Title IV funds is required. Therefore, the aid is returned to the federal programs based on the percent of unearned aid.

The responsibility for returning the unearned aid is shared by both the college and the student. Both aid that was disbursed and aid that could have been disbursed, are included. The college must return its portion first. The student’s account is charged for it, and the respective Title IV account is credited for the same amount. Of course, in most cases, NDSCS would first have credited a student’s account for the charges involved. (The actual refund percentages on these charges will be covered later.) That credit on an account may be enough to satisfy the required return of the unearned aid. The college’s share of the unearned and/or earned aid is computed using the same percentage process already covered above. For example, if a student attended 25 percent of the term, NDSCS would consider he or she earned 25 percent of the institutional charges and would return up to 75 percent towards the student’s unearned financial aid amount. Again, this goes through 60 percent of the term.

After the college takes care of its share of the financial aid repayment, the student is responsible for the rest. If the aid program is a loan, the amount due from the student is considered to be repaid later when the loan is repaid. If the aid program is a grant, the amount due is reduced by 50 percent. The college will inform the student of any amount still due and arrangements must be made for payment.

For updated information, visit NDSCS.edu
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.

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 transcripted 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 and 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 requires 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 general education, technical or business credits. 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 and English Language and 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, which support both academic goals and lifelong learning for students, employees, and community members. In this modern age the Library seeks to serve the students in all venues from brick and mortar to online. The resources consist of numerous computer and electronic resources, DVDs, CDs, board games, 3-D models, magazines, academic journals, newspapers and print books. The Library also has group 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 1-800-343-4325, Ext. 3-2618 or direct at 701-671-2618, or by emailing NDSCS.library@ndscs.edu. Stop and visit us – we are here to support you.

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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
<th>Explanation</th>
<th>Per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td>Excellent</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td>Poor</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Failure</td>
<td></td>
</tr>
<tr>
<td>Au</td>
<td></td>
<td>Audit</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td>Satisfactory</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td></td>
<td>Unsatisfactory</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td></td>
<td>Withdrawal</td>
<td></td>
</tr>
<tr>
<td>WV</td>
<td></td>
<td>Waive</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>In Progress</td>
<td></td>
</tr>
<tr>
<td>NR</td>
<td></td>
<td>Not Reported</td>
<td></td>
</tr>
</tbody>
</table>

- 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 “Withdrawal” 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 and 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:

<table>
<thead>
<tr>
<th>GPA Units</th>
<th>Institutional GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-16</td>
<td>1.50</td>
</tr>
<tr>
<td>17-33</td>
<td>1.75</td>
</tr>
<tr>
<td>34-50</td>
<td>1.85</td>
</tr>
<tr>
<td>51+</td>
<td>2.00</td>
</tr>
</tbody>
</table>

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 his/her 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

1. 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.
2. 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.
3. 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.
4. 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 and shops 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 choose to no longer attend classes for the remainder of the semester, need to initiate that request through Student Success. Student Success will determine if the request qualifies as a “Class Drop” or a “Term Withdrawal.” The effective date is the date of notification to Student Success. Note: A final grade is considered “earned” after the last day to drop the class.

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:COMPS or ND:SCI
      i. All students must complete one lab science (ND:LABSC), one mathematics course (ND:MATH) and one ND:COMPS
   e) eight credits in ND:SS (must have courses from two prefixes)
   f) two credits in wellness

For updated information, visit NDSCS.edu
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 GPA of 2.0 (C) or better.
2. The student must have completed 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.
   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 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:COMPS, ND:SCI. All students must complete one lab science (ND:LABSC) course, one mathematics (ND:MATH) course and one CIS (ND:COMPS) 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 AND GERTA COURSE MATRIX

<table>
<thead>
<tr>
<th>COURSE</th>
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<th>GERTA (NDUS)</th>
<th>DEGREE</th>
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<td>POLS 115 American Government</td>
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**WELLNESS**

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<td>THEA 270 Stagecraft</td>
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*HPER 210 may be used to fulfill the Wellness requirement for AAS, Diploma or Certificate programs.
ACADEMIC AND COLLEGE POLICIES AND 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 nurturing 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 rights identified within the NDSCS Student Rights and Responsibilities: A Code of Conduct 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 and student clubs and organizations are expected to observe the College standards, Community Expectations and Prohibited Conduct published in the NDSCS Student Rights and Responsibilities: A Code of Conduct, as well as 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 and 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.

If a student finds themselves in a situation in which a policy violation is taking place, students are expected to do one or more of the following:

- Immediately bring the situation to the awareness of a staff member/police, or
- Immediately leave the scene of the violation as long as it is not their room or suite it is happening in.

Students who passively participate in any code violation will be found responsible for and sanctioned as if they had committed the prohibited act. Students are also accountable for their guests’ conduct and can 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 Campus Policy

NDSCS prohibits the use of all tobacco products on College property including off-campus, 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 e-cigarette devices in College-owned residential buildings.

This policy applies to employees, students and visitors. Tobacco products include any product that contains tobacco, is derived from tobacco or contains nicotine or other similar substances, intended for human consumption, or is likely to be consumed, whether smoked, heated, inhaled, chewed, absorbed, dissolved, or ingested by any other means. The term “tobacco product” includes e-cigarettes and other electronic smoking devices, pipes and rolling papers, but does not include any product approved by the United States Food and Drug Administration for legal sale as a tobacco cessation product and is being marketed and sold for solely the approved purpose.

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 Campus 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 and 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:

Jane Vangsness Frisch, Ph.D.
NDSCS – Old Main 340
800 6th St. N.
Wahpeton, ND 58076
Jane.Vangsness@ndscs.edu
701-671-2627

Academic Integrity 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 reduction in grade, failure of course or removal from class. Repeat offenses may result in additional sanctions.

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. Refer to the NDSCS Catalog, student handbook and/or course syllabi for specific requirements.

It is the responsibility of the instructor to enforce the attendance policy as specified in the course syllabi, student handbook and/or NDSCS Catalog. 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 doctor’s statement or the campus nurse;
- 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); or
- Verified family emergencies (verified by the division academic counselor).

Inclement 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 As always, students are to be referred to an academic counselor after three consecutive absences.

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

North Dakota University System Computer and Network Usage Policy

See NDUS policy 1901.2 – Computing Facilities: www.ndus.edu/makers/procedures/sbhe 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.

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, 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 NDUS Student Rights and Responsibilities: A Code of Conduct. Students engaging in dangerous, unlawful or ongoing disruptive behavior may be denied from attending classes.

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 and 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 in the NDSCS Catalog (www.NDSCS.edu/Catalog), on the NDSCS website (www.NDSCS.edu/FERPA), or they may 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.

**DISTANCE EDUCATION**

**General Information**

Distance Education at NDSCS utilizes technology and innovative delivery methods to reach students who are unable, for whatever reason, to make use of the complete college environment on the Wahpeton campus.

Distance Education students tend to be those who are place-bound, older than average or looking at new career options. NDSCS serves their needs through internet-based programming, classes taught via interactive video network (IVN), Early Entry classes taught in high schools for college credit, and courses taught at NDSCS-Fargo and other sites in the region.

**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)
- 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)***
- Welding Technology (certificate, diploma, A.A.S. degree)

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 NDUSI 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 NDUSI and NDSCS-Fargo, located adjacent to the NDUSI campus. Pathway students have access to all student services and activities at NDUSI. Please contact the Admissions office at NDUSI for additional information.

**NDSCS Online and 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)
- Emergency Medical Services (EMS) (certificate, A.A.S. degree)
- Emergency Medical Technician (EMT) (certificate)**
- Paramedic Technology (certificate, A.A.S. 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)
- Liberal Arts (A.A. 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.

- Technical Studies (certificate, diploma, A.A.S. degree)

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 the Distance Education office at 1-800-342-4325, ext. 3-2347.

**Tuition and Fees for Online Courses**

In addition to the tuition and fees on page 12, online courses are charged an Online Access Fee of $36 per credit.

**Buying Textbooks**

Most online courses use at least one textbook and some courses use additional resources which may require an access code. The required books may be purchased by calling the NDSCS Bookstore at 1-800-342-4325, ext. 3-2239, or going to 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 their online class for a period of seven consecutive days may be dropped from the course. Efforts to contact inactive students are
apprenticeship correspondent study and incumbent worker training, ApprenticeshipND, TrainND and SkillsND. The division 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/VN classes. Early Entry (Dual Credit) classes are coordinated through the Distance Education office. For more information, contact the Early Entry Coordinator at 701-671-2406 or 800-342-4325 ext. 2406.

**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. Following is a required statement by the State of MN: “North Dakota State College of Science is a public institution registered as a private institution with the Minnesota Office of Higher Education pursuant to Minnesota Statutes, sections 136A.61 to 136A.71. Registration is not an endorsement of the institution. Credits earned at the institution may not transfer to all other institutions.”

**DIVISION FOR WORKFORCE AFFAIRS**

**General Information**

The Division for Workforce Affairs includes the departments of ApprenticeshipND, TrainND and SkillsND. The division provides apprenticeship correspondent study and incumbent worker training, enhancing business and individual performance and productivity.

Division for Workforce Affairs
North Dakota State College of Science
800 North Sixth Street
Wahpeton, ND 58076-0002
1-800-342-4325, ext. 3-2206 or 701-671-2206
www.NDSCS.edu

**TrainND**

As part of the North Dakota Workforce Affairs System, TrainND Southeast is committed to providing businesses and industries in our 15-county area with the most competitive workforce in the nation. This goal is accomplished through customized training, state-of-the-art facilities or enrolling employees in our workshops, seminars and classes. Tailored or customized employee training is available at the awareness level, skill building level and mastery level. Types of training available include: computer, technical, employee development and organization training.

The primary office is located within Workforce Affairs at NDSCS with a regional office in Fargo, ND, at NDSCS-Fargo. Workforce Affairs can be reached through the NDSCS website, www.NDSCS.edu/Training which will provide comprehensive contact information for the entire statewide system. Contact Workforce Affairs for more information.

The North Dakota Workforce Affairs System provides responsive, accessible and flexible delivery of innovative world-class employee 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 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.
STUDENT SERVICES

Library Resources and Services
The Mildred Johnson Library offers a plethora of services and resources available online 24/7 and in-house. A supportive environment to work either collaboratively or on your own. The Library offers collaborative work spaces, study rooms, FitDesks to work out your mind and body collectively, cozy couches and many other amenities to serve you on your collegiate path.

The Library lends books, DVDs, CDs, 3-D models and board games to the current NDSCSC community. If an item of interest is not owned by the Library, a request can be made to purchase the material. In addition to locally owned items, the Library can inter-library loan most books, DVDs and articles from lending libraries regionally and throughout the United States.

Computers, printers and scanners are available for in-Library use. In addition, wireless access is available for those who bring laptops and other devices. The Library provides space for group and individual study, with private study rooms lining the second floor and a mix of tables and couches on the first floor.

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 website. These services are available to current students and employees on- and off-campus.

Faculty may request Library orientations to prepare students for library research in particular areas of their curriculum and many students can expect to receive an orientation during their academic career. Employees and community 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 at 1-800-342-4325, ext. 3-2618. Stop and visit us, we are here to support you.

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

Orientation
An orientation session for new and transfer students is required at the beginning of the first semester so that students may become acquainted with services and programs at NDSCS. Information about the required orientation activities, specific to your program and/or delivery method, will be sent prior to the first semester you are enrolled. This is an addition to orientation activities that were conducted during the new student registration process.

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
SMARTTHINKING 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 SMARTTHINKING 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 and Volunteer Opportunities

Students are encouraged to participate in campus activities outside the classroom. Choosing to become involved early can greatly enhance your college experience. Students can participate in entertainment events like 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, softball and basketball. Intercollegiate competition for men includes football, basketball, and baseball. An assortment of facilities are available for both indoor and outdoor competition.
- **Intramurals** – The intramural program for men and women offers competition in basketball, softball, flag football, volleyball, and dodge ball.
- **Open Gym** – The Clair T. Blikre Activities Center offers students many hours of free play and open recreation. Several hours each day are set aside for this purpose. Activities include swimming, racquetball, jogging, weightlifting, basketball and volleyball.

Clubs and Organizations
There are over 30 student run clubs and organizations. If you’re serious about getting ahead in life, getting involved is a great place to begin. 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. You can even start a new club. Visit www.NDSCS.edu/Clubs to learn more.
- **Media Squad** – Spreading the word about campus events, important information and sometimes even the zaniest of useless knowledge is the NDSCS Media Squad informers. These students are often the faces you see sharing messages that are posted to the NDSCS Student Life Facebook page found at Facebook.com/NDSCSstudentlife. For more information about the Media Squad, call 701-671-2109.

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 Agawasie 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 whose role is to support residents by fostering a cooperative and considerate residential community environment that contributes to the academic and personal growth and success of each resident. Resident Assistants enhance each resident student’s experience by establishing authentic and appropriate relationships with them, as well as providing 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 On-campus Club** – Campus Crusade for Christ (CRU) is a faith-focused club offering spiritual support for students.

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

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 and Mail Center
The Bookstore and Mail Center are located in the Hektner Student Center on the Wahpeton campus. The Bookstore at NDSCS-Fargo is in Room 155 and offers reduced services.

Mail Center services include issuance of mailbox keys, stamps, USPS, and UPS shipping services. Packages may be picked up during normal mail center hours or at the Bookstore’s customer service counter. All students living on the Wahpeton campus are encouraged to have a campus post office box to receive personal mail and packages.

The Bookstore prides itself in following the latest textbook trends to reduce course material costs for students by offering new, used, rental, e-books, and inclusive access. Textbook buyback is offered at the end of each term in-store and online. Through our vendor partnerships, the Bookstore sells program tools at an educational discounted price, as well as required course and school supplies to support student academic success.

Wildcat apparel and gifts, and more are available for students, parents, alumni, visitors, and the NDSCS community. Visit us in-store or online at www.NDSCSbookstore.com.

Customer Service Desk and 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.

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.
- Has extenuating circumstances.

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

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 701-671-2370 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 and Alumni – Ella Stern and 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 and 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, Shurma 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 XII competition.
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, 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 cash and ask about using your dining plan

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 may park vehicles on campus as long as they observe parking rules, speed limits and other traffic regulations. 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

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<th>Academic Programs</th>
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X = degree or award
* = emphasis areas

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

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:

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<td>English – 16</td>
<td>Sentence Skills – 20</td>
<td>Reading – 240</td>
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<td>Writing – 250</td>
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</table>

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 an Associate in Applied Science degree in Agriculture with an emphasis in Ag Business.
The Agronomy curriculum is designed to provide instruction in crop production, soils, marketing, 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.”

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:

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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 an Associate in Applied Science degree in Agriculture with an emphasis in Agronomy.
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.”

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:

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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 an Associate in Applied Science degree in Agriculture with an emphasis in Animal Science.
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.

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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 14</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 16</td>
<td>Sentence Skills – 20</td>
<td></td>
</tr>
<tr>
<td>WritePlacer – 5</td>
<td>Reading – 240</td>
<td>Writing – 250</td>
</tr>
</tbody>
</table>

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 an Associate in Applied Science degree in Agriculture with an emphasis in Farm Management.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEC 145</td>
<td>Farm Records</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 197</td>
<td>Farm and Ranch Management Internship</td>
<td>4</td>
</tr>
<tr>
<td>AGEC 242</td>
<td>Introduction to Agricultural Management</td>
<td>4</td>
</tr>
<tr>
<td>AGEC 244</td>
<td>Introduction to Agricultural Marketing</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 246</td>
<td>Introduction to Agricultural Finance</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 248</td>
<td>Introduction to Risk Management and Insurance</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 247</td>
<td>Agricultural Land Resource Acquisition</td>
<td>2</td>
</tr>
<tr>
<td>AGEC 297</td>
<td>Farm and Ranch Management Internship</td>
<td>2</td>
</tr>
<tr>
<td>AGRI 275</td>
<td>Introduction to Precision Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>PLSC 225</td>
<td>Principles of Crop Production</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 222</td>
<td>Soil Fertility and Fertilizers</td>
<td>3</td>
</tr>
<tr>
<td>Any Agriculture Electives</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

1 course must be an ANSC prefix

Related/General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 135</td>
</tr>
<tr>
<td>ENGL 110</td>
</tr>
<tr>
<td>FYE 101</td>
</tr>
<tr>
<td>HPER 210</td>
</tr>
<tr>
<td>MATH 120</td>
</tr>
<tr>
<td>MFGT 110</td>
</tr>
<tr>
<td>PLSC 110</td>
</tr>
<tr>
<td>SOIL 210</td>
</tr>
<tr>
<td>English/Communication Elective (choose one)</td>
</tr>
<tr>
<td>ENGL 105</td>
</tr>
<tr>
<td>ENGL 120</td>
</tr>
<tr>
<td>ENGL 125</td>
</tr>
<tr>
<td>COMM 110</td>
</tr>
<tr>
<td>Social and Behavioral Sciences, Humanities, History and/or Computer Electives</td>
</tr>
</tbody>
</table>

Total Required Credits 69

Revised: May 2021
Meat Processing (Certificate in Technical Studies)

Contact Information
Craig Zimprich, department chair
craig.a.zimprich@ndscs.edu
701-671-2249
Tech Center 49

Delivery Methods
Face-to-Face: Wahpeton
Face-to-Face: Fargo

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.

This curriculum is designed as a collaboration offering between NDSCS and NDSU. The meat processing courses (ANSC 241, 243, 244, and 245) will be taught at the NDSU Meat Science Lab and awarded credit as an NDSU course. These credits will be transferred to NDSCS to fulfill the curriculum requirements of the NDSCS Meat Processing Certificate program.

Students enrolled in this program will complete a 400-hour paid internship at a meat processing facility, related to their career goals, during the last 8 weeks of this program.

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.”

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:

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<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
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</tr>
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</tr>
<tr>
<td>WritePlace – 5</td>
<td>Writing – 250</td>
<td></td>
</tr>
</tbody>
</table>

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 Technical Studies with an emphasis in Meat Processing.

Course Code | Course Title | Credits
---|---|---
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
AGRI 197 | Internship | 5

Meat Processing Courses (NDSU/NDSCS Collaborative)

English/Communication Elective | 3
General Education Elective | 2
FYE 101 Science of Success | 1

Total Required Credits | 30

*These classes are taught in collaboration with North Dakota State University at the NDSU meat processing lab.

Revised: May 2021

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

NORTH DAKOTA STATE COLLEGE OF SCIENCE
NDSCS.EDU
Precision Agriculture

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."

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:

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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 an Associate in Applied Science degree in Agriculture with an emphasis in Precision Agriculture.

Related/General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 135</td>
<td>Applied Math</td>
<td>2</td>
</tr>
<tr>
<td>MATH 120</td>
<td>Basic Mathematics I</td>
<td>2</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>HPER 210</td>
<td>First Aid and CPR (Professional/Community)</td>
<td>2</td>
</tr>
</tbody>
</table>

Social and Behavioral Sciences, Humanities, History, and/or Computer Electives 4

Total Required Credits 69

Revised: May 2021
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.

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

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.

Required minimum placement scores:

<table>
<thead>
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<td>Sentence Skills – 20</td>
</tr>
<tr>
<td>WritePlace – 5</td>
<td>Writing – 250</td>
</tr>
</tbody>
</table>

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 an Associate in Applied Science degree in Agriculture with an emphasis in Ranch Management.
The Architectural Drafting and Estimating 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 the purchase of a notebook computer. The cost will be approximately $1,900. 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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
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<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math – 17</td>
<td>Arithmetic – 51</td>
<td>Writing – 237</td>
</tr>
<tr>
<td>Or transfer equivalencies will apply as appropriate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Applicants not meeting the above requirements are encouraged to visit with the academic counselor at 701-671-2257 or the Construction and Design Technology department chair at 701-671-2116 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 Architectural Drafting and Estimating Technology.

Course Code | Course Title | Credits
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCT 101</td>
<td>Architectural Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 102</td>
<td>Architectural Drafting II</td>
<td>5</td>
</tr>
<tr>
<td>ARCT 110</td>
<td>Graphic Communications</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 121</td>
<td>Revit Architecture</td>
<td>2</td>
</tr>
<tr>
<td>ARCT 133</td>
<td>Residential Methods and Materials</td>
<td>2</td>
</tr>
<tr>
<td>ARCT 144</td>
<td>Construction Estimating I</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 201</td>
<td>Architectural Drafting III</td>
<td>4</td>
</tr>
<tr>
<td>ARCT 202</td>
<td>Architectural Drafting IV</td>
<td>4</td>
</tr>
<tr>
<td>ARCT 212</td>
<td>Architectural Presentations</td>
<td>2</td>
</tr>
<tr>
<td>ARCT 214</td>
<td>Architectural Portfolio</td>
<td>1</td>
</tr>
<tr>
<td>ARCT 223</td>
<td>Renovation and Design</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 231</td>
<td>Commercial Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 234</td>
<td>Structural Steel Detailing I</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 241</td>
<td>Construction Estimating II</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 242</td>
<td>Construction Estimating III</td>
<td>3</td>
</tr>
<tr>
<td>ARCT 120</td>
<td>AutoCAD for Architecture</td>
<td>3</td>
</tr>
<tr>
<td>or CAD 120</td>
<td>Introduction to AutoCAD (3)</td>
<td></td>
</tr>
<tr>
<td>CMT 225</td>
<td>Mechanical and Electrical Systems</td>
<td>2</td>
</tr>
</tbody>
</table>

Business/Technical Elective (choose one/2 credit minimum)
| ARCT 297 | Cooperative Education (2) |
| BADM 240 | Sales (3) |
| BCT 222 | Construction Safety (2) |
| BUSN 120 | Fundamentals of Business (3) |
| CMT 130 | Green Building Fundamentals (2) |
| CMT 165 | Residential and Project Experience (1) |
| CMT 251 | Construction Documents and Specifications (3) |
| CMT 265 | Residential Project Experience (1) |
| UAS 111 | Introduction to UAS (2) |
| UAS 112 | Unmanned Aircraft Systems Certification (1) |

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 |
| Wellnes Elective(s) | 2 |
| FYE 101 | Science of Success | 1 |
| Social and Behavioral Sciences, Humanities, History and/or Computer Electives | 4 |
| or transfer equivalencies as appropriate |

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

Total Required Credits
70

Revised: May 2021
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:

<table>
<thead>
<tr>
<th>ACT</th>
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</tr>
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<td>Reading – 240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing – 237</td>
</tr>
</tbody>
</table>

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 |
-------------|--------------------------------------------------|---------|
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 120     | Applied Welding                                   | 3       |
ABOD 200     | Mechanical/Electrical Components                  | 3       |
ABOD 201     | Wheel Alignment and Measuring Systems             | 2       |
ABOD 202     | Frame/Body and Structural Repairs                 | 2       |
ABOD 203     | Advanced Damage Analysis Lab I                    | 8       |
ABOD 204     | Estimating and Job Costing                        | 2       |
ABOD 205     | Body Shop Planning                                | 2       |
ABOD 206     | Advanced Damage Analysis Lab II                   | 8       |

Related/General Education Courses for Diploma

ENGL 105 Technical Communications
or ENGL 110 College Composition I (3)
Mathematics and/or Science
Social and Behavioral Sciences, Humanities, History and/or Computer Electives
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 67

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
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
Social and Behavioral Sciences, Humanities, History and/or Computer Electives
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 73

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

Contact Information
Peter Mandt, program coordinator
peter.mandt@ndscs.edu
701-671-2442
Schuett Hall 140

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 a laptop computer. For further information please contact Peter Mandt at 701-671-2442.

Admission Requirements*

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
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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 Automotive Technology program coordinator at 701-671-2442 for strategies to meet the admission requirements.

Course Code Course Title Credits

<table>
<thead>
<tr>
<th>Diploma and Associate in Applied Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 103 Power Trains/Brakes 3</td>
</tr>
<tr>
<td>AUTO 143 Steering, Suspension, and Wheel Alignment 3</td>
</tr>
<tr>
<td>AUTO 165 Automotive Electrical and Electronics 5</td>
</tr>
<tr>
<td>AUTO 168 Hybrid and Electric Vehicle Systems 1</td>
</tr>
<tr>
<td>AUTO 188 Driveability Procedures I 5</td>
</tr>
<tr>
<td>AUTO 206 Chassis Repair/Body Electrical 7</td>
</tr>
<tr>
<td>AUTO 216 Engine Repair 7</td>
</tr>
<tr>
<td>AUTO 226 Automatic Transmission/Transaxles 7</td>
</tr>
<tr>
<td>AUTO 285 Light Duty Diesel 2</td>
</tr>
<tr>
<td>AUTO 286 Driveability Procedures 7</td>
</tr>
<tr>
<td>MFGT 110 Industrial Shop Practices 2</td>
</tr>
<tr>
<td>TECH 109 Air Conditioning 2</td>
</tr>
</tbody>
</table>

Related/General Education Courses

Diploma

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYE 101</td>
<td>Science of Success 1</td>
</tr>
<tr>
<td>ENGL 105</td>
<td>Technical Communications 3</td>
</tr>
<tr>
<td>MATH 120</td>
<td>Basic Mathematics I 2</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Basic Mathematics II 2</td>
</tr>
<tr>
<td>Social and Behavioral Sciences, Humanities, History and/or Computer Electives 4</td>
<td></td>
</tr>
</tbody>
</table>

Recommended:

- CIS 101 – Computer Literacy – 2 cr
- PSYC 100 – Human Relations in Organizations – 2 cr
- Wellness Elective 1

Associate in Applied Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYE 101</td>
<td>Science of Success 1</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I 3</td>
</tr>
<tr>
<td>English/Communication Elective (choose one) 3</td>
<td></td>
</tr>
<tr>
<td>ENGL 105</td>
<td>Technical Communications</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
</tr>
<tr>
<td>MATH 120</td>
<td>Basic Mathematics I 2</td>
</tr>
<tr>
<td>MATH 123</td>
<td>Basic Mathematics II 2</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Basic Mathematics III 2</td>
</tr>
<tr>
<td>Wellness Electives 2</td>
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</tr>
<tr>
<td>Social and Behavioral Sciences, Humanities, History and/or Computer Electives 4</td>
<td></td>
</tr>
</tbody>
</table>

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 64
Total Required Credits for Associate in Applied Science 72

Specialty Options: (Fifth Semester)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>AUTO 209</td>
<td>Advanced Chassis Repair and Body Electrical 4-8</td>
</tr>
<tr>
<td>AUTO 219</td>
<td>Advanced Engine Rebuilding 4-8</td>
</tr>
<tr>
<td>AUTO 229</td>
<td>Advanced Automatic Transmissions/Automatic Transaxles 4-8</td>
</tr>
<tr>
<td>AUTO 289</td>
<td>Electronics and Computer Systems 4-8</td>
</tr>
</tbody>
</table>

Award

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

Revised: May 2021

NORTH DAKOTA STATE COLLEGE OF SCIENCE
NDSCS.EDU

For updated information, visit NDSCS.edu
Automotive and Diesel Master Technician

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.

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 103</td>
<td>Power Trains/Brakes</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 143</td>
<td>Steering, Suspension, and</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 165</td>
<td>Wheel Alignment</td>
<td></td>
</tr>
<tr>
<td>AUTO 168</td>
<td>Automotive Electrical and Electronics</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 188</td>
<td>Hybrid and Electric Vehicle Systems</td>
<td>1</td>
</tr>
<tr>
<td>AUTO 206</td>
<td>Driveability Procedures I</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 216</td>
<td>Chassis Repair/Body Electrical</td>
<td>7</td>
</tr>
<tr>
<td>AUTO 226</td>
<td>Engine Repair</td>
<td>7</td>
</tr>
<tr>
<td>AUTO 285</td>
<td>Automotive Transmission/Transaxles</td>
<td>7</td>
</tr>
<tr>
<td>AUTO 286</td>
<td>Light Duty Diesel</td>
<td>2</td>
</tr>
<tr>
<td>AUTO 287</td>
<td>Driveability Procedures</td>
<td>7</td>
</tr>
<tr>
<td>AUTO 297</td>
<td>Cooperative Education (324 hours)</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 110</td>
<td>Industrial Shop Practices</td>
<td>2</td>
</tr>
<tr>
<td>TECH 109</td>
<td>Air Conditioning</td>
<td>2</td>
</tr>
</tbody>
</table>

Related/General Education Courses

- ENGL 110 College Composition I 3
- English/Communication Elective (choose one) 3
- ENGL 105 Technical Communications 2
- ENGL 120 College Composition II 2
- ENGL 125 Introduction to Professional Writing 2
- ENGL 135 Fundamentals of Public Speaking 3
- MATH 120 Basic Mathematics I 2
- MATH 123 Basic Mathematics II 2
- MATH 125 Basic Mathematics III 2
- Social and Behavioral Sciences, Humanities, History 4
- and/or Computer Electives 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 or 3
- DTEC 125 Introduction to Heavy Duty Drive Systems or 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 99

Throughout the course of the year, students will need to take DTEC 110 or DTEC 125 or DTEC 135, DTEC 164, DTEC 215, DTEC 225 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.
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 an HP ProBook 650 Laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately $950 if purchased from NDSCS. For further information, contact Lonnie Wurst, Robotics, Automation, and Mechatronics Technology program coordinator at 701-671-2832.

### Admission Requirements*

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading -15</td>
<td>Reading Comp- 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English- 15</td>
<td>WritePlace- 3-4</td>
<td>Reading- 240</td>
</tr>
<tr>
<td>Math- 17</td>
<td>Arithmetic- 51</td>
<td>Writing- 237</td>
</tr>
</tbody>
</table>
|                  | Elementary Algebra- 25 | QAS- 232 | 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 Robotics, Automation and Mechatronics Technology program coordinator at 701-671-2832 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 Autonomous Systems Technology (AST).
Building Construction Technology

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 the purchase of a notebook computer. The minimum cost will be approximately $1,000.00. For further information, contact Randy Stach at 701-671-2116.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math – 17</td>
<td>Arithmetic – 51</td>
<td>Writing – 237</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>QAS – 232</td>
</tr>
</tbody>
</table>

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 Construction and Design Technology department chair at 701-671-2116 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 Building Construction Technology.

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             | 2       
BCT 116      | Commercial Construction           | 3       
BCT 131      | Rough Carpentry                   | 3       
BCT 132      | Exterior Finish Construction      | 3       
BCT 133      | Carpentry Fundamentals            | 2       
BCT 201      | Intro to Print Reading            | 2       
BCT 202      | Construction Seminar              | 2       
BCT 203      | Supervised Occupational Experience I | 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       
ENGL 105     | Technical Communications          | 3       
ENGL 120     | College Composition II            | 2       
ENGL 125     | Introduction to Professional Writing | 2       
COMM 110     | Fundamentals of Public Speaking   | 2       
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       
FYE 101      | Science of Success                | 1       

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

Total Required Credits 76

NORTH DAKOTA STATE COLLEGE OF SCIENCE
NDSCS.EDU

Revised: May 2021
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
Online: Some Classes
Combination

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>NEXT GENERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>14</td>
<td>Reading Comp – 61</td>
</tr>
<tr>
<td>English</td>
<td>12</td>
<td>WritePlacer – 3-4</td>
</tr>
<tr>
<td>Math</td>
<td>13</td>
<td>Arithmetic – 51</td>
</tr>
</tbody>
</table>

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 BADM department chair at 701-671-2172 for strategies to meet the admission requirements.

Business Management

Admission and Finance

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 his/her career goals.

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       |
BADM 282    | *Professional Development      | 1       |

Related/General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 200</td>
<td>Elements of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 201</td>
<td>Elements of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 215</td>
<td>Business in the Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>CIS 101</td>
<td>Computer Literacy</td>
<td>2</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ECON 105</td>
<td>Elements of Economics</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 201</td>
<td>Principles of Microeconomics (3)</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 202</td>
<td>Principles of Macroeconomics (3)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 120</td>
<td>College Composition II (3)</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>WELL Elective(s)</td>
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<td>2</td>
</tr>
<tr>
<td>MATH Elective (BOTE 108 or MATH 103)</td>
<td>3</td>
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</tr>
<tr>
<td>Electives</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Choose 3 credits from the courses listed below.

BADM 217 Promotion and Advertising (3)
BADM 230 Market Information Analysis (3)
BADM 244 Sales Seminar (3)
BUSN 297 Internship/Coop (1-5)
PHIL 210 Ethics (3)
PSYC 111 Introduction to Psychology (3)
SOC 110 Introduction to Sociology (3)

Total Required Credits 67

*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.

* Includes membership in Collegiate DECA.

Revised: May 2021
Business Management

Business Certificate Options
- Entrepreneurship
- Finance
- Management/Supervision
- Sales

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.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 14</td>
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<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 12</td>
<td>Write/Place – 3-4</td>
<td></td>
</tr>
<tr>
<td>Math – 13</td>
<td>Arithmetic – 51</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elementary Algebra</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

Or transfer equivalencies will apply as appropriate.

Applicants not meeting the above requirements are encouraged to visit with the academic counselor at 701-671-2283 or the BADM department chair at 701-671-2172 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 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM 201</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BADM 217</td>
<td>Promotion and Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BADM 230</td>
<td>Marketing Information Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BUSB 170</td>
<td>Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 215</td>
<td>Business in the Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>BADM 202</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM 282</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 215</td>
<td>Business in the Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>BADM 202</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM 282</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>BOTE 108</td>
<td>Business Mathematics</td>
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</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>BADM 234</td>
<td>Customer Service</td>
<td>1</td>
</tr>
<tr>
<td>BADM 240</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>BADM 244</td>
<td>Sales Seminar</td>
<td>3</td>
</tr>
<tr>
<td>BUSB 120</td>
<td>Fundamentals of Business</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of Entrepreneurship Certificate</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Completion of Finance Certificate</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Completion of Management/Supervision Certificate</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Completion of Sales Certificate</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total Required Credits for A.A.S. Degree</td>
<td>68</td>
<td></td>
</tr>
</tbody>
</table>

Award Cont’d
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 2021

NORTH DAKOTA STATE COLLEGE OF SCIENCE
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 their career goals. Employment opportunities are unlimited, depending upon the individuals’ strengths and interests.

Admission Requirements*

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER NEXT GENERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 14</td>
<td>Reading Comp – 61</td>
<td>Writing – 237</td>
</tr>
<tr>
<td>English – 12</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math – 13</td>
<td>Arithmetic – 51</td>
<td>QAS – 225</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td></td>
</tr>
</tbody>
</table>

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 BADM department chair at 701-671-2172 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 Business Management with an emphasis in Business Technology 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: All Classes
Combination

Business Management

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 his/her career goals.

Admission Requirements*

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

Required minimum placement scores:

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 102</td>
<td>Fundamentals of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 118</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 215</td>
<td>Business in the Legal Environment</td>
<td>3</td>
</tr>
<tr>
<td>CIS 101</td>
<td>Computer Literacy</td>
<td>2</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 297</td>
<td>Internship/Coop (1-5)</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 254</td>
<td>Financial Statement Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics (3)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 105</td>
<td>Elements of Economics (3)</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 201</td>
<td>Principles of Microeconomics (3)</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 202</td>
<td>Principles of Macroeconomics (3)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Required Credits 68

*Includes membership in Collegiate DECA.

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

Related/General Education Courses

Electives 3

Choose 3 credits from the courses listed below.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 297</td>
<td>Internship/Coop (1-5)</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 254</td>
<td>Financial Statement Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics (3)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Microeconomics (3)</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 202</td>
<td>Principles of Macroeconomics (3)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

*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 on Marketing, Sales and Hospitality Services.

Revised: May 2021
Restaurant Management

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 his/her career goals. Employment opportunities are unlimited, depending upon the individual's strengths and interests.

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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math</td>
<td>Arithmetic – 51</td>
<td>Writing – 237</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>QAS – 225</td>
</tr>
</tbody>
</table>

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 BADM department chair at 701-671-2172 for strategies to meet the admission requirements.

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

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

Total Required Credits 36

(in addition to previously earned A.A.S. degree in Culinary Arts)

* Includes membership in Collegiate DECA.

*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 2021
Caterpillar Dealer Service Technician

Caterpillar Dealer Service Technician

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:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td></td>
<td>Writing – 237</td>
<td></td>
</tr>
</tbody>
</table>

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                   | 3       |
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               | 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                              | 2       |
ENGL 120    | College Composition II                               | 2       |
ENGL 125    | Introduction to Professional Writing                  | 2       |
COMM 110    | Fundamentals of Public Speaking                      | 2       |
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 |

Recommended:

• CIS 101 – Computer Literacy – 2 cr
• PSYC 100 – Human Relations in Organizations – 2 cr

Total Required Credits 74

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

Face-to-Face: Wahpeton
Construction Management Technology

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. Students will also take required classes in written and oral communications, technical mathematics, business, computer sciences and social sciences.

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 the purchase of a notebook computer. The cost will be approximately $1900.00. For further information, contact Randy Stach at 701-671-2116.

Admission Requirements*

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
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<tr>
<td>Math – 17</td>
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<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>QAS – 232</td>
</tr>
</tbody>
</table>

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 Construction and Design Technology department chair at 701-671-2116 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 Construction Management Technology.

Course Code | Course Title                              | Credits |
-------------|------------------------------------------|---------|
ARCT 144     | Construction Estimating I                | 3       |
ARCT 231     | Commercial Methods and Materials         | 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 130      | Green Building Fundamentals              | 3       |
CMT 225      | Mechanical and Electrical Systems        | 2       |
CMT 251      | Residential 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 133     | Residential Methods and Materials (2)    |         |

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           | 3       |
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  | 1       |

Total Required Credits 73  |                                  |

Revised: May 2021
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 requires 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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Reading – 14</td>
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<tr>
<td>Math – 13</td>
<td>Arithmetic – 51</td>
<td>Writing – 250</td>
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<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>QAS – 225</td>
</tr>
</tbody>
</table>

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 Culinary Arts program coordinator at 701-671-2842 for strategies to meet the admission requirements.

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

Recommended:
• CIS 101 – Computer Literacy – 2 cr
• PSYC 100 – Human Relations in Organizations – 2 cr

Total Required Credits for Diploma 68

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, in an attempt 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.

*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 Culinary Arts with an emphasis in Chef Training and Management Technology.
Dental Assisting

Dental Assisting (Certificate)

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;
- providing 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;
- 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.

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. Satisfaction of the following: Minimum of 2.5 high school GPA; OR twelve college semester credits with a minimum GPA of 2.0.
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, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross BLS for Healthcare Provider course ONLY), health insurance and documentation of a current eye exam are required and must remain current while in the program. Additional prerequisites (e.g., drug screening/finger printing) may be required dependent on site-specific student prerequisites. All requirements 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: May 2021
Dental Assisting (AAS degree)

Contact Information
Chanel Malone, program coordinator
701-671-2367
Mayme Green Allied Health Center 213P

Delivery Methods
Face to Face: Wahpeton
Online: Some Classes

The Dental Assisting program is fully accredited by the Commission on Dental Accreditation of the American Dental Association, 211 East Broadway, Chicago, IL 60612. 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 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 clinical experience(s), and therefore, program completion. If this issue applies, the student must meet with the department chair.

Admission/Selection Requirements
The following criteria must be completed 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. SAT/ACT scores for English (reading and writing) and math, with a minimum ACT score of 18 or SAT score of 1100.
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, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross BLS for Healthcare Provider course ONLY), health insurance, and documentation of a current eye exam are student required and all must remain current while in the program. Additional prerequisites (e.g. drug screening/finger printing) may be required dependent on site-specific student prerequisites. All requirements 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.
Dental Hygiene

**Dental Hygiene**

**Contact Information**
Rhonda Edwardson, department chair
alliedhealthcareers@ndscs.edu
701-671-2967
Mayme Green Allied Health Center 213I

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.

**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 or a minimum GPA of 2.50.
5. Review career link and submit the Dental Hygiene Career Review form.
6. Complete the selection assessment exam 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) and Intro to Organic and Biochemistry (CHEM 116/116L) 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, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross BLS for Healthcare Provider course ONLY), health insurance and documentation of a current eye exam are required and must remain current while in the program. Additional prerequisites (e.g. drug screening/finger printing) may be required dependent on site-specific student prerequisites. All requirements 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.
Diesel Technology

Case IH

Contact Information
Michael Redding, program coordinator
michael.redding@ndscs.edu
701-671-2226
Bisek 1171

Case IH

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.

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

Required minimum placement scores:

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<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlace – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td></td>
<td>Writing – 237</td>
<td></td>
</tr>
</tbody>
</table>

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.

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

Revised: May 2021

Michael Redding, program coordinator
michael.redding@ndscs.edu
701-671-2226
Bisek 1171
**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 the required courses. 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.

Required minimum placement scores:
- **ACT**
  - Reading – 15
  - Writing – 237

- **ACCUPLACER**
  - Reading Comp – 61
  - Writing – 3-4

- **NEXT GENERATION**
  - Reading – 240

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 a diploma or an Associate in Applied Science degree in Diesel Technology – General Diesel.

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**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

**Associate in Applied Science**

**Diploma**

- **ENGL 105** Technical Communications | 3
- **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**

**Diploma**

- **ENGL 110** College Composition I | 3
- **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

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

**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.

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NORTH DAKOTA STATE COLLEGE OF SCIENCE

NDSCS.EDU

For updated information, visit NDSCS.edu

Revised: May 2021
Diesel Technology

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:

<table>
<thead>
<tr>
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</thead>
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</table>

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 | 4
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 | 6

Related/General Education Courses

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

Total Required Credits for Associate | 72

Revised: May 2021
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.

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:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing – 237</td>
</tr>
</tbody>
</table>

Or transfer equivalencies will apply as appropriate

Applicants not meeting the above requirements are encouraged to visit 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.

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       |
ENGL 105   | Technical Communications                    | 3       |
ENGL 120   | College Composition II                     |         |
ENGL 125   | Introduction to Professional Writing        |         |
COMM 110   | Fundamentals of Public Speaking            |         |
Wellness Elective(s) | 2 cr
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 cr
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.

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 2021
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.

**Admission Requirements**

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
</tr>
<tr>
<td>Math – 17</td>
<td>Arithmetic – 51</td>
</tr>
</tbody>
</table>

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 Electrical Technology department chair at 701-671-2662 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.

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**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 Study
- ECAL 204: Electrical Planning and Estimating
- ECAL 233: Commercial Wiring Laboratory

**Related/General Education Courses**

- FYE 101: Science of Success
- ENGL 110: College Composition I
- 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
- MATH 134: Technical Algebra II
- MATH 136: Technical Trigonometry
- HPER: Wellness Elective(s)
- CIS 101 – Computer Literacy – 2 cr
- PSYC 100 – Human Relations in Organizations – 2 cr

**Total Required Credits**

73

**NOTE:** This program requires an HP ProBook 650 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately $900 if purchased from 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.

**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 2021

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**NORTHERN DAKOTA STATE COLLEGE OF SCIENCE**

**NDSCS.EDU**
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 students 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 Social Sciences, Humanities, History and/or Computer Electives. Recommended:

- CIS 101 – Computer Literacy – 2 cr
- PSYC 100 – Human Relations in Organizations – 2 cr

Total Required Credits 73

NOTE: This program requires an HP ProBook 650 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately $900 if purchased from 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.

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.

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For updated information, visit NDSCS.edu

Revised: May 2021
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

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

Required minimum placement scores:

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECAL 101</td>
<td>Direct Current (DC) Fundamentals</td>
<td>5</td>
</tr>
<tr>
<td>ECAL 102</td>
<td>Alternating Current (AC) Fundamentals</td>
<td>5</td>
</tr>
<tr>
<td>ECAL 103</td>
<td>Electrical Code Study</td>
<td>4</td>
</tr>
<tr>
<td>ECAL 111</td>
<td>Electric Meters and Motors Lab</td>
<td>3</td>
</tr>
<tr>
<td>ECAL 133</td>
<td>Basic Wiring Lab</td>
<td>3</td>
</tr>
<tr>
<td>ECAL 137</td>
<td>Electrical Drafting</td>
<td>2</td>
</tr>
<tr>
<td>ECAL 201</td>
<td>Three-phase Electrical Systems</td>
<td>5</td>
</tr>
<tr>
<td>ECAL 205</td>
<td>Electrical Design and Lighting</td>
<td>3</td>
</tr>
<tr>
<td>ECAL 211</td>
<td>AC Measurements</td>
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<tr>
<td>ECAL 223</td>
<td>Electronic Devices/Lab</td>
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</tr>
<tr>
<td>ECAL 241</td>
<td>Basic Motor Controls Lab</td>
<td>3</td>
</tr>
<tr>
<td>ECAL 243</td>
<td>Programmable Logic Controllers Lab</td>
<td>3</td>
</tr>
</tbody>
</table>

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
- ENGL 105 Technical Communications 1
- ENGL 120 College Composition II 1
- ENGL 125 Introduction to Professional Writing 1
- COMM 110 Fundamentals of Public Speaking 1
- FYE 101 Science of Success 1
- MATH 133 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

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

Revised: May 2021
Emergency Medical Services (EMS)

Emergency Medical Technician (Certificate)

Contact Information
Thomas Dobrzynski, program coordinator
tom.dobrzynski@sanfordhealth.org or
thomas.dobrzynski@ndscs.edu
701-364-1737 / 701-231-6978

Delivery Methods
- Face-to-Face: Fargo
- Online: Some Classes
- Combination
  *Hybrid online lectures with weekend labs

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.

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.
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.

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 coordinator.
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 2021
Emergency Medical Services (EMS)

Paramedic Technology (AAS degree)

Contact Information
Thomas Dobrzynski, program coordinator
tom.dobrzynski@sanfordhealth.org or
thomas.dobrzynski@ndscs.edu
701-364-1737 / 701-231-6978

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: 214-703-9445, 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.

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 2021

NORTH DAKOTA STATE COLLEGE OF SCIENCE

NDSCS.EDU

For updated information, visit NDSCS.edu
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, physicians, practices, software vendors, consulting and auditing firms, government agencies, and other facilities outside of healthcare. With appropriate experience, RHIT’s 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 required/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 Coding Diagnosis 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
BIOI 220** Anatomy and Physiology I 3
BIOI 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

**BIOI 220L and BIOI 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). The College’s accreditation for an Associate 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.

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).
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/grouper 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT 176</td>
<td>Introduction to Health Information</td>
<td>4</td>
</tr>
<tr>
<td>HIT 180</td>
<td>Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>HIT 184</td>
<td>Basic Diagnosis Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIT 185</td>
<td>Basic Procedure Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIT 285</td>
<td>Reimbursement Methodologies</td>
<td>3</td>
</tr>
<tr>
<td>HIT 286</td>
<td>Intermediate Diagnosis Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIT 287</td>
<td>Computer Applications in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIT 288</td>
<td>Intermediate Procedure Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIT 197C</td>
<td>Practicum</td>
<td>2</td>
</tr>
</tbody>
</table>

Related/General Education Courses
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 220**</td>
<td>Anatomy and Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 221**</td>
<td>Anatomy and Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>BOTE 171</td>
<td>Medical Terminology</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
</tbody>
</table>

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:

a. Identifies specialized programs that meet established coding educational standards.

b. Stimulates improvement of educational standards through faculty development opportunities, and by involving faculty and staff in program evaluation and planning.

c. Promotes a better understanding of the goals of professional coding education.

d. Provides reasonable assurance that practitioners possess the necessary job skills upon entry into the profession.

Timeframe of Program Approval
April of 2018 to July 17, 2021 with annual interim approval during these years.

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 2021
HVAC/R Technology

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.

Admission Requirements*

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing – 237</td>
</tr>
</tbody>
</table>

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 HVAC/R Technology program coordinator at 701-671-2515 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 or an Associate in Applied Science degree in HVAC/R Technology.

Revised: May 2021

Total Required Credits for Certificate

36

Total Required Credits for Associate in Applied Science

73
Information and Communications Technology

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
1. To provide students with the knowledge of computer and network training enabling them to configure and install systems.
2. To provide students with the knowledge and skills necessary to assist management in the selection of computer hardware and software.
3. To provide students with the knowledge of computer networks enabling them to configure and install them.
4. 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 the purchase of a notebook computer. The cost will be approximately $1,500 with several purchase or lease options available. For further information, call the Information Technology Department at 701-671-3333.

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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite – 17</td>
<td>Reading Comp – 85</td>
</tr>
<tr>
<td>WritingFlacer – 5</td>
<td>Reading – 256</td>
</tr>
<tr>
<td>Elementary Algebra – 41</td>
<td>Writing – 250</td>
</tr>
</tbody>
</table>

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 ICT department chair at 701-671-2496 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.

Information Technology Support (Certificate)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 125</td>
<td>IT Essentials I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 129</td>
<td>IT Essentials II</td>
<td>3</td>
</tr>
<tr>
<td>CIS 164</td>
<td>Networking Fundamentals I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 165</td>
<td>Networking Fundamentals II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 191</td>
<td>First Year Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CIS 197</td>
<td>Internship</td>
<td>1</td>
</tr>
<tr>
<td>CIS 212</td>
<td>Microsoft Windows Operating System Client</td>
<td>3</td>
</tr>
<tr>
<td>CIS 220</td>
<td>Operating Systems (UNIX)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Web Server Management</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 142</td>
<td>Cyber Security Operations</td>
<td>4</td>
</tr>
<tr>
<td>CIS 180</td>
<td>HTML and CSS</td>
<td>3</td>
</tr>
<tr>
<td>CIS 215</td>
<td>Implementing a Microsoft Windows Server Environment</td>
<td>4</td>
</tr>
<tr>
<td>CIS 216</td>
<td>Implementing a Microsoft Windows Network Infrastructure</td>
<td>4</td>
</tr>
<tr>
<td>CIS 267</td>
<td>Intermediate Networking I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 279</td>
<td>Security Awareness and Policy</td>
<td>1</td>
</tr>
<tr>
<td>CSCI 160</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ND:MATH</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL/COMM Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Science, Humanities and History Electives</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Total Required Credits for Associate 66

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 2021

NORTH DAKOTA STATE COLLEGE OF SCIENCE

NDSCS.EDU

For updated information, visit NDSCS.edu

75
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.

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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite</td>
<td>Reading Comp – 85</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td></td>
<td>WritePlacer – 5</td>
<td>Reading – 256</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 41</td>
<td>Writing – 250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QAS – 237</td>
</tr>
</tbody>
</table>

Or transfer equivalencies will apply as appropriate

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.
Software Coding ¹

**Contact Information**
Bonnie Schillinger, department chair  
bonnie.schillinger@ndscs.edu  
701-671-2496  
Horton Hall 227/NDSCS-Fargo 138

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 the purchase of a notebook computer. The cost will be approximately $1,500 with several purchase or lease options available. For further information, call the Information Technology Department at 701-671-3333.

**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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT Composite</th>
<th>ACCUPLACER Reading Comp</th>
<th>ACCUPLACER NEXT GENERATION WritePlacer</th>
<th>ACCUPLACER NEXT GENERATION Writing</th>
<th>ACCUPLACER NEXT GENERATION Arithmetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>85</td>
<td>5</td>
<td>250</td>
<td>51</td>
</tr>
</tbody>
</table>

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 Information and Communications department chair at 701-671-2496 for strategies to meet the admission requirements.

**Software Coding (Certificate)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 180</td>
<td>HTML and CSS</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 133</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 134</td>
<td>Database Design and Management</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 162</td>
<td>Web Application Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 230</td>
<td>Web Database I (ASP/PHP)</td>
<td>3</td>
</tr>
<tr>
<td>General Education Elective</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Total Required Credits for Certificate** 18

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

NDSCS.edu 77
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 the purchase of a notebook computer. The cost will be approximately $1,500 with several purchase or lease options available. For further information, call the Information Technology Department at 701-671-3333.

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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Composite – 17 Read Comp – 85 Next GENERATION</td>
<td>Writing 250</td>
</tr>
<tr>
<td></td>
<td>WritePlace 5</td>
<td>Reading – 256</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>OAS – 225</td>
</tr>
<tr>
<td></td>
<td>Arithmetic – 51</td>
<td></td>
</tr>
</tbody>
</table>

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 Information and Communications department chair at 701-671-2496 for strategies to meet the admission requirements.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 180</td>
<td>HTML and CSS</td>
<td>3</td>
</tr>
<tr>
<td>CIS 183</td>
<td>Social Media</td>
<td>3</td>
</tr>
<tr>
<td>CIS 188</td>
<td>Application Design</td>
<td>3</td>
</tr>
<tr>
<td>CIS 191</td>
<td>First Year Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CIS 197</td>
<td>Internship</td>
<td>2-3</td>
</tr>
<tr>
<td>CIS 279</td>
<td>Security Awareness and Policy</td>
<td>1</td>
</tr>
<tr>
<td>CSCI 102</td>
<td>Fundamentals of CyberLaw</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 133</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 134</td>
<td>Database Design and Management</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 135</td>
<td>Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 160</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 161</td>
<td>Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 162</td>
<td>Web Application Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 230</td>
<td>Web Database I (ASP/PHP)</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 231</td>
<td>Web Database II</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 260</td>
<td>Computer Science III</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL/COMM</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>MATH 103</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 104</td>
<td>Finite Math</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Science, Political Science, Humanities and History Elective(s)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Total Required Credits for Associate 66-67

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.

NORTH DAKOTA STATE COLLEGE OF SCIENCE

North Dakota State College of Science

Revised: May 2021
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 enable 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 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 the purchase of a notebook computer. The cost will be approximately $1,500 with several purchase or lease options available. For further information, call the Information Technology Department at 701-671-3333.

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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite – 17</td>
<td>Reading Comp – 85</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>WritePlacer – 5</td>
<td>Reading – 256</td>
<td></td>
</tr>
<tr>
<td>Elementary Algebra – 25</td>
<td>Writing – 250</td>
<td></td>
</tr>
<tr>
<td>Arithmetic – 51</td>
<td>QAS – 225</td>
<td></td>
</tr>
</tbody>
</table>

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 Information and Communications department chair at 701-671-2496 for strategies to meet the admission requirements.

Web Design (Certificate)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM 110</td>
<td>Introduction to eBusiness</td>
<td>3</td>
</tr>
<tr>
<td>BOTC 108</td>
<td>Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>CIS 164</td>
<td>Networking Fundamentals I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 180</td>
<td>HTML and CSS</td>
<td>3</td>
</tr>
<tr>
<td>CIS 181</td>
<td>Web Authoring Software</td>
<td>3</td>
</tr>
<tr>
<td>CIS 182</td>
<td>Image Editing Software</td>
<td>3</td>
</tr>
<tr>
<td>CIS 232</td>
<td>Graphics Design</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 135</td>
<td>Web Programming (XML)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 183</td>
<td>Social Media</td>
<td>3</td>
</tr>
<tr>
<td>CIS 188</td>
<td>Application Design</td>
<td>3</td>
</tr>
<tr>
<td>CIS 220</td>
<td>Operating Systems (Unix)</td>
<td>3</td>
</tr>
<tr>
<td>CIS 279</td>
<td>Security Awareness and Policy</td>
<td>1</td>
</tr>
<tr>
<td>CIS 197/297</td>
<td>Internship and/or Cooperative Education 2-3</td>
<td></td>
</tr>
<tr>
<td>CSCI 102</td>
<td>Fundamentals of Cyberlaw</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 133</td>
<td>Database Concepts I (SQL)</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 160</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 230</td>
<td>Web Database I (ASP/PHP)</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Science, Humanities and History Elective(s)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Total Required Credits for Associate 65-66

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.

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

Revised: May 2021

NORTH DAKOTA STATE COLLEGE OF SCIENCE
NDSCS.EDU
John Deere Tech

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Score</th>
<th>Course</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT Reading</td>
<td>15</td>
<td>ACCUPLACER</td>
<td>61</td>
</tr>
<tr>
<td>English</td>
<td>15</td>
<td>WritePlacer</td>
<td>3-4</td>
</tr>
</tbody>
</table>

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       |
ENGL 105    | Technical Communications                         | 3       |
ENGL 120    | College Composition II                           | 2       |
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
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, 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. Some positions are in fixed locations, while others require limited to extensive travel. Students are provided with experiences emphasizing surveying, drafting and materials testing. Surveying courses give students the opportunity to learn how to operate the latest instruments used in distance and angle measurement. Surveying drawings and maps are developed using enhanced computer-aided drafting programs (CAD). Courses in soil testing, water-quality management, concrete and asphalt provide students with hands-on experience in materials testing. 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 the purchase of a notebook computer. The cost will be approximately $1,900. For further information, call Jeff Jelinek, Land Surveying and Civil Engineering Technology program coordinator, at 701-671-2268.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>reading comp 61</td>
<td>reading 240</td>
</tr>
<tr>
<td>English</td>
<td>writeplacer 3-4</td>
<td>writing 237</td>
</tr>
<tr>
<td>Math</td>
<td>arithmetic 51</td>
<td>elementary algebra 25 QAS 232</td>
</tr>
</tbody>
</table>

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 Construction and Design Technology department chair at 701-671-2116 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 Land Surveying and Civil Engineering Technology.
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.”

### 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.

### Course Code Course Title Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>PLSC 110</td>
<td>World Food Crops</td>
<td>3</td>
</tr>
<tr>
<td>PLSC 225</td>
<td>Principles of Crop Production</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 210</td>
<td>Introduction to Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 242</td>
<td>Introduction to Agricultural Management</td>
<td>4</td>
</tr>
<tr>
<td>Free Electives</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Humanities/History Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Math, Science and Computer Information Systems Electives</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All students must complete one lab science course, one mathematics course and one computer science course.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Science Electives</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>From two or more prefixes within the category marked ND:SS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Microeconomics (3)</td>
<td></td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Macroeconomics (3)</td>
<td></td>
</tr>
<tr>
<td>*Agriculture and General Education Electives</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Total Required Credits</td>
<td></td>
<td>67</td>
</tr>
</tbody>
</table>

*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.
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

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.

Award
Upon successful completion of the required courses, students will be awarded an Associate in Science degree in Liberal Arts.

Biotechnology Transfer

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 150</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 150L</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 121</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 121L</td>
<td>General Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 122</td>
<td>General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 122L</td>
<td>General Chemistry II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 241</td>
<td>Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 241L</td>
<td>Organic Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 242</td>
<td>Organic Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 242L</td>
<td>Organic Chemistry II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>MATH 165</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MICR 202</td>
<td>Introductory Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MICR 202L</td>
<td>Introductory Microbiology Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>College Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 211L</td>
<td>College Physics I Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 212</td>
<td>College Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 212L</td>
<td>College Physics II Lab</td>
<td>1</td>
</tr>
<tr>
<td>Computer Information System Elective</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Humanities/History Electives</td>
<td>From two different prefixes within the categories marked ND:HUM or ND:HIST</td>
<td>6</td>
</tr>
<tr>
<td>Social and Behavioral Science Electives</td>
<td>From two or more prefixes within the category marked ND:SS</td>
<td>8</td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

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.

Revised: May 2021
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
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 his/her career goals. Employment opportunities are unlimited, depending upon the individuals’ strengths and interests.

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       |
PSYC 111     | Introduction to Psychology                       | 3       |
SOC 110      | Introduction to Sociology                        | 3       |
Humanities/History Electives | 6
From two different prefixes within the categories marked ND:HUM or ND:HIST

Required:

PHIL 210 | Ethics (3) |
Math, Science and Computer Information Systems Electives |
CSCI 116 | Business Use of Computers (3) |
MATH 103 | College Algebra (3) |
MATH 210 | Elementary Statistics (3) |
Lab Science Elective (4) |

General Requirements |
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 2021

NORTH DAKOTA STATE COLLEGE OF SCIENCE

NDSCS.EDU
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.

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
--- | --- | ---
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) | 1
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

Any course marked ND:COMPSC

Humanities/History Electives
From two different prefixes within the categories marked ND:HUM or ND:HIST
2

Social and Behavioral Science Electives
From two or more prefixes within the category marked ND:SS
8

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.
Chiropractic (A.S.)

Contact Information
Shannon King, department chair
shannon.king@ndscs.edu
701-671-2296
Haverty Hall 223

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 150</td>
<td>General Biology I</td>
<td>3</td>
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<tr>
<td>BIOL 150L</td>
<td>General Biology I Lab</td>
<td>1</td>
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<tr>
<td>BIOL 151</td>
<td>General Biology II</td>
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<td>BIOL 151L</td>
<td>General Biology II Lab</td>
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<td>CHEM 121</td>
<td>General Chemistry I</td>
<td>4</td>
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<td>CHEM 121L</td>
<td>General Chemistry I Laboratory</td>
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<td>CHEM 122</td>
<td>General Chemistry II</td>
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<td>CHEM 122L</td>
<td>General Chemistry II Laboratory</td>
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<td>CHEM 241</td>
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<td>CHEM 242</td>
<td>Organic Chemistry II</td>
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<td>Organic Chemistry II Laboratory</td>
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<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
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<tr>
<td>MATH 105</td>
<td>Trigonometry</td>
<td>2</td>
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<tr>
<td>or MATH 165</td>
<td>Calculus I (4)</td>
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<tr>
<td>PHYS 211</td>
<td>College Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 211L</td>
<td>College Physics I Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 212</td>
<td>College Physics II</td>
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<td>PHYS 212L</td>
<td>College Physics II Lab</td>
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<td>Computer Information Systems Elective</td>
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<tr>
<td>From any course marked ND:COMPSC</td>
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<tr>
<td>Humanities/History Electives</td>
<td>6</td>
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<tr>
<td>From two different prefixes within the categories marked ND:HUM or ND:HIST</td>
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<tr>
<td>Social and Behavioral Sciences Electives</td>
<td>8</td>
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<tr>
<td>From two or more prefixes within the category marked ND:SS</td>
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<tr>
<td>Required:</td>
<td>PSYC 111 Introduction to Psychology (3)</td>
<td>2</td>
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<tr>
<td>Wellness Elective(s)</td>
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</tr>
</tbody>
</table>

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 2021
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
From any course marked ND:COMPSC
Humanities/History Electives  6
From two different prefixes within the categories marked ND:HUM or ND:HIST
Social and Behavioral Sciences Electives  8
From two or more prefixes within the category marked ND:SS
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.
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: It is required that students entering this program purchase a notebook computer. The cost will be approximately $1,500 with several purchase or lease options available. For further information, call the Information Technology Department at 701-671-3333.

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.

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
From two different prefixes within the categories marked ND:HUM or ND:HIST
Science Electives                            8
Any course marked ND:LABSC                    4
Social and Behavioral Sciences Electives      8
From two or more prefixes within the category marked ND:SS
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.

Revised: May 2021
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.

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 103</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 104</td>
<td>United States History Since 1877</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 115</td>
<td>Concepts of Anatomy and Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 115L</td>
<td>Concepts of Anatomy and Physiology Lab</td>
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<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>3</td>
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<tr>
<td>MATH 210</td>
<td>Elementary Statistics</td>
<td>3</td>
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<td>CJ 160</td>
<td>The Legal System</td>
<td>4</td>
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<td>CJ 201</td>
<td>Introduction to Criminal Justice</td>
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<tr>
<td>CJ 232</td>
<td>Administration of Justice</td>
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<td>CJ 297</td>
<td>Internship (1-4)</td>
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<tr>
<td>POLS 115</td>
<td>American Government</td>
<td>3</td>
</tr>
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<td>POLS 116</td>
<td>State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 115</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Required Credits 65
Consult academic advisor in selecting electives that are most appropriate for the intended baccalaureate program.

* Suggested Electives:
POL 103 Global Politics in a Multi-Cultural World | 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.

Revised: May 2021
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/zooly, 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.

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.
Early Childhood Education Transfer

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
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<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
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<tr>
<td>FYE 101</td>
<td>Science of Success</td>
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<td>Humanities/History Electives</td>
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<td>Recommended:</td>
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<tr>
<td>ENGL 238</td>
<td>Children’s Literature (3)</td>
<td>2</td>
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<td>Wellness Elective(s)</td>
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<td>MATH 103</td>
<td>College Algebra</td>
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<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>3</td>
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<td>BIOL 111</td>
<td>Concepts of Biology</td>
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<td>Math, Science and Computer Information Systems Electives</td>
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<td>PSYC 111</td>
<td>Introduction to Psychology</td>
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<tr>
<td>PSYC 250</td>
<td>Developmental Psychology</td>
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<td>PSYC 255</td>
<td>Child and Adolescent Psychology</td>
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<td>SOC 110</td>
<td>Introduction to Sociology</td>
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<td>SOC 220</td>
<td>Family</td>
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<tr>
<td>HPER 217</td>
<td>Personal and Community Health (3)</td>
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<td>PHIL 210</td>
<td>Ethics (3)</td>
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<td>SOC 115</td>
<td>Social Problems (3)</td>
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<tr>
<td>HPER 210</td>
<td>First Aid and CPR (Professional/Community) (2)</td>
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<tr>
<td><strong>EDUC 250</strong></td>
<td>Introduction to Education (3)</td>
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</table>

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.
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.

### 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
- Any course marked ND:POLS or ND:HIST
- 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
- 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.

**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 2021

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**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

---

**Suggested courses:**

<table>
<thead>
<tr>
<th>Math Education Majors</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 103</td>
<td>3</td>
</tr>
<tr>
<td>MATH 165</td>
<td>4</td>
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<td>MATH 166</td>
<td>4</td>
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<tr>
<td>MATH 265</td>
<td>4</td>
</tr>
<tr>
<td>MATH 266</td>
<td>3</td>
</tr>
</tbody>
</table>

| 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. |

<table>
<thead>
<tr>
<th>Science Education Majors</th>
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<tbody>
<tr>
<td>BIOL 150 and 150L</td>
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</tr>
<tr>
<td>BIOL 151 and 151L</td>
<td>3/1</td>
</tr>
<tr>
<td>PHYS 211 and 211L</td>
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<tr>
<td>PHYS 212 and 212L</td>
<td>4/1</td>
</tr>
<tr>
<td>MATH 165</td>
<td>4</td>
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<td>MATH 166</td>
<td>4</td>
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<tr>
<td>PHYS 251</td>
<td>5</td>
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<tr>
<td>PHYS 252</td>
<td>5</td>
</tr>
</tbody>
</table>

| Elementary Education Majors | |
|-----------------------------| |
| Please refer to the Elementary Education transfer curriculum plan section. |

<table>
<thead>
<tr>
<th>Social Science Education Majors</th>
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</tr>
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<tbody>
<tr>
<td>EDUC 250</td>
<td>3</td>
</tr>
<tr>
<td><strong>EDUC 250</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

*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.

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**NDSCS.EDU**

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**NORTH DAKOTA STATE COLLEGE OF SCIENCE**

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92 North Dakota State College of Science
Elementary Education Transfer

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.

**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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
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<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
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<td>ENGL 120</td>
<td>College Composition II</td>
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<tr>
<td>ENGL 238</td>
<td>Children’s Literature</td>
<td>3</td>
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<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
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<td>HIST 103</td>
<td>United States History to 1877</td>
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<td>HIST 104</td>
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<td>POLS 115</td>
<td>American Government</td>
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<td>Humanities elective</td>
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<td>PSYC 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<td>PSYC 230</td>
<td>Educational Psychology</td>
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<td>PSYC 255</td>
<td>Child and Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 115</td>
<td>Social Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

**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.

**Suggested courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 111/L or 124/L</td>
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<tr>
<td>MUSC 100 or 101</td>
<td>3</td>
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<tr>
<td>CSCI 116</td>
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<tr>
<td>COMM 112</td>
<td>3</td>
</tr>
<tr>
<td><strong>EDUC 250</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**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.
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.

### 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.

### 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

### 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
*Any course marked ND:COMPSC
Humanities/History Electives  6
From two different prefixes within the categories marked ND:HUM or ND:HIST
Recommended:
PHIL 210  Ethics (3)
Social and Behavioral Science Electives  8
From two or more prefixes within the category marked ND:SS
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.

*Revised: May 2021*
General Liberal Arts Transfer

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.

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.
Health, Physical Education and Recreation Transfer

Contact Information
Jane Passa, department chair
jane.passa@ndscs.edu
701-671-2445
Blikre Activity 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 (Professional/Community) | 2
HPER 217 | Personal and Community Health | 3
Wellness Elective(s) | | 2
General Education Electives* | | 12
Humanities/History Electives | | 6
Math, Science and Computer Information Systems Electives | | 13
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.
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
From two or more prefixes within the category marked ND:SS
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.
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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Western Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>and HIST 102</td>
<td>Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 103</td>
<td>U.S. History to 1877 (3)</td>
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</tr>
<tr>
<td>and HIST 104</td>
<td>U.S. History Since 1877 (3)</td>
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<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>Lab Science Elective(s)</td>
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<tr>
<td>MATH 103</td>
<td>College Algebra</td>
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<td>MATH 210</td>
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<td>PHIL 210</td>
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<td>General Education Electives*</td>
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</tr>
<tr>
<td>Social and Behavioral Science Electives**</td>
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<td>24</td>
</tr>
</tbody>
</table>

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). 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 103 Global Politics in a Multicultural World (3)
- POLS 116 State and Local Government (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.
Management Information Systems Transfer

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: It is recommended that students entering this program purchase a notebook computer. The cost will be approximately $1,500 with several purchase or lease options available. For further information, call the Information Technology Department at 701-671-3333.

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.

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 210    | Ethics                        | 3       |
PSYC 111    | Introduction to Psychology    | 3       |
SOC 110     | Introduction to Sociology     | 3       |
Humanities/History Electives | From two different prefixes within the categories marked ND:HUM or ND:HIST | 6       |
Science Electives | Any course marked ND:LABSC | 4       |
Wellness Elective(s) | ND:LABSC | 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.
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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 160</td>
<td>Computer Science I</td>
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<td>ENGL 110</td>
<td>College Composition I</td>
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<td>ENGL 120</td>
<td>*College Composition II</td>
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<td>ENGL 125</td>
<td>*Introduction to Professional Writing</td>
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<td>FYE 101</td>
<td>Science of Success</td>
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<td>MATH 165</td>
<td>Calculus I</td>
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<td>MATH 166</td>
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<tr>
<td>MATH 265</td>
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<td>MATH 266</td>
<td>Introduction to Differential Equations</td>
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<td>Social and Behavioral Science Electives</td>
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<tr>
<td>From two or more prefixes within the category marked ND:SS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**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.
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

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      |
Any course marked ND:COMPSC       |         |
Humanities/History Electives     | 6       |
From two different prefixes within the categories marked ND:HUM or ND:HIST|         |
Social and Behavioral Science Electives | 8     |
From two or more prefixes within the category marked ND:SS |         |
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: March 2021
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.

### 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.

### Course Code Course Title Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
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<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>Wellness Elective(s)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MUSC 115</td>
<td>Concert Band (1 credit/term)</td>
<td>4</td>
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<tr>
<td>or MUSC 117</td>
<td>Concert Choir (1 credit/term) (4)</td>
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<tr>
<td>MUSC 122</td>
<td>Music Theory I</td>
<td>3</td>
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<tr>
<td>MUSC 123</td>
<td>Aural Skills I</td>
<td>2</td>
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<tr>
<td>MUSC 124</td>
<td>Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 125</td>
<td>Aural Skills II</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 138</td>
<td>Jazz Band</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 157</td>
<td>Pop-Swing Choir</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 182</td>
<td>Technology of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 245</td>
<td>Applied Music-Private Piano Lessons (1 credit/term)</td>
<td>2</td>
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<tr>
<td>or MUSC 160</td>
<td>Classic Piano I (1) and MUSC 161 Classic Piano II (1)</td>
<td></td>
</tr>
<tr>
<td>Voice or Instrumental Lessons (1 credit/term)</td>
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<tr>
<td>Students may select from the following:</td>
<td></td>
<td></td>
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<tr>
<td>MUSC 144 Applied Music-Private Voice Lessons (1)</td>
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<td></td>
</tr>
<tr>
<td>MUSC 145 Applied Music-Private Instrumental Lessons (1)</td>
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<tr>
<td>Humanities/History Electives</td>
<td>6</td>
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</tr>
<tr>
<td>From two different prefixes within the categories marked ND:HUM or ND:HIST</td>
<td></td>
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<tr>
<td>Required:</td>
<td>MUSC 100 Music Appreciation (3)</td>
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</tr>
<tr>
<td>Math, Science and Computer Information Systems Electives</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>From any course marked ND:LABSC, ND:MAT, ND:COMPSC, ND:SCI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All students must complete one lab science course, one mathematics course and one computer science course.</td>
<td></td>
<td></td>
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<tr>
<td>Social and Behavioral Sciences Electives</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>From two or more prefixes within the category marked ND:SS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Education Electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

### Total Required Credits
68

This curriculum meets the North Dakota University System general education requirements as indicated in the NDSCS Catalog.
Natural Science Transfer

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.

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.

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 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 |
Any course marked ND:COMPSC | 2 |
Humans/History Electives |
From two different prefixes within the categories marked ND: HUM or ND: HIST | 6 |
Social and Behavioral Science Electives |
From two or more prefixes within the category marked ND: SS | 8 |
Wellness Elective(s) |
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.

Revised: May 2021
Nursing Transfer

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*.

**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.

**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 | 3
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
Any course marked ND:COMPSC | | 6
Humanities/History Electives | From two different prefixes within the categories marked ND:HUM or ND:HIST | 3
General Education Elective | | 1

**Total Required Credits** | **65**

*For updated information, visit NDSCS.edu*
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.

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.
Paralegal 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 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.

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.

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 116</td>
<td>Business Use of Computers</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Western Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIST 102</td>
<td>Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 103</td>
<td>U.S. History to 1877 (3)</td>
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</tr>
<tr>
<td>and HIST 104</td>
<td>U.S. History Since 1877 (3)</td>
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</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
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<tr>
<td>Lab Science Elective(s)</td>
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<tr>
<td>MATH 103</td>
<td>College Algebra</td>
<td>3</td>
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<td>MATH 210</td>
<td>Elementary Statistics</td>
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<tr>
<td>PHIL 210</td>
<td>Ethics</td>
<td>3</td>
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<td>Wellness Elective(s)</td>
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<td>General Education Electives**</td>
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<td>Social and Behavioral Science:</td>
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<tr>
<td>CJ 160</td>
<td>The Legal System (4)</td>
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<td>CJ 201</td>
<td>Introduction to Criminal Justice (3)</td>
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<td>CJ 232</td>
<td>Administration of Justice (3)</td>
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<td>POLS 115</td>
<td>American Government (3)</td>
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<td>Total Required Credits:</td>
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<td>65</td>
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</table>

* 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)

Revised: May 2021
Pharmacy Transfer

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.

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 NDSCS 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.

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 NDSCS 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.
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.

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.

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
Any course marked ND:COMPSC | | 6
Humanities/History Electives | | 8
From two different prefixes within the categories marked ND:HUM or ND:HIST | | 8
Social and Behavioral Science Electives | | 8
From two or more prefixes within the category marked ND:SS | | 8
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.
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.

### Contact Information
Jenny Krueger, instructor
jennifer.a.krueger@ndscs.edu
701-671-2433
Old Main 444

### Delivery Methods
Face-to-Face: Wahpeton
Online: Some Classes
Combination

### 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

*From two different prefixes within the categories marked ND:HUM or ND:HIST

Recommended:
PHIL 210 Ethics (3)

Wellness Elective(s) | 2
MATH 103 | College Algebra | 3
MATH 210 | Elementary Statistics | 3
BIOL 111 | Concepts of Biology | 3
BIOL 111L or BIOL 150 | Concepts of Biology Lab or 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.
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.

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.

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 210  Ethics 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)

Any course marked ND:HUM or ND:HIST 3

Humans/History Elective

Math, Science and Computer Information Systems
Electives 13
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. 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

Revised: May 2021
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.

### 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.

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**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
Biological Electives
  - To be determined through discussion with academic advisor
  - Computer Information System Elective | 2
  - Any course marked ND:COMPSC
  - Humanities/History Electives | 6
  - From two different prefixes within the categories marked ND:HUM or ND:HIST
  - Social and Behavioral Science Electives | 8
  - From two or more prefixes within the category marked ND:SS
  - 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.

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**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
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 is 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 system, 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.

### Admission Requirements*

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110 English Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL/COMM Communication Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102 Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 105 Introduction to Professional Writing</td>
<td>1</td>
</tr>
<tr>
<td>COMM 110 Fundamentals of Public Speaking</td>
<td>1</td>
</tr>
<tr>
<td>FYE 101 Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>Social and Behavioral Sciences, Humanities, History and/or Computer Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

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

*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.

For updated information, visit NDSCS.edu

Revised: May 2021
Practical Nursing – AAS

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 and a 2.0 GPA or higher. If an applicant fails to meet the high school GPA of 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 program benchmark composite score of 46. Exam can be retaken once.
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 46. 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, 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 program or program website under Program Admission Requirements for current information.

For accepted students, specific immunizations, background checks, CPR certification (American Heart Associate BLS, American Red Cross BLS for Healthcare Provider ONLY), and must remain current while in the program. Additional prerequisites (e.g., drug screening/finger printing) may be required dependent on site-specific student prerequisites. All requirements 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).

NORTH DAKOTA STATE COLLEGE OF SCIENCE
NDSCS.EDU

Revised May 2021
Associate in Science in Nursing - ASN
- Registered Nursing (LPN to RN)

Contact Information
Trina Fear, RN program coordinator
trina.fear@ndscs.edu
701-671-2688
Mayme Green Allied Health Center 213L

Delivery Methods
Face to Face: Wahpeton
Online: Some Classes

The program has with select colleges.

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)

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.

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. 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 the ASN Nursing Program.
4. Be a graduate of a Board of Nursing approved Associate in Applied Science or an Associate in Science Practical Nursing Program.
5. Hold an active and unencumbered license as a Practical Nurse (LPN).
6. 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.
7. 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.
8. 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.
9. 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.
10. Review Essential Functions for Registered Nursing Students and submit the Essential Functions Verification form.

For updated information, visit NDSCS.edu

Academic Programs

NORTH DAKOTA STATE COLLEGE OF SCIENCE

Revised: May 2021
Nursing

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: Watertown
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

Online: Some Classes
Face to Face:

Program Credits
69

Course Code | Course Title | Credits
--- | --- | ---
NURS 114 | Role Development | 1
NURS 115 | Essentials for Registered Nursing | 4
NURS 116 | Essentials for Registered Nursing I Clinical | 3
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

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 220/220L 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, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross BLS for Healthcare Provider course ONLY) and health insurance are required and must remain current while in the program. Additional prerequisites (e.g. drug screening/finger printing) may be required dependent on site-specific student prerequisites. All requirements 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: May 2021
**Occupational Therapy Assistant**

**Contact Information**
Beth Schlepp, department chair
alliedhealthcareers@ndscs.edu
701-671-2961
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, 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.

**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.
4. Applicants (with a college transcript) must have a GPA of 2.0 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, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross BLS for Healthcare Provider course ONLY), health insurance, and First Aid Certification. *All requirements must remain current while in the program. Additional prerequisites (e.g. drug screening/ finger printing) may be required dependent on site-specific student prerequisites. All requirements 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.

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**Course Title**
- Introduction to Occupational Therapy
- Disability Awareness
- Medical Terminology
- Therapeutic Media
- Documentation
- Physical Disabilities I: Theory and Practice
- Pediatrics I: Theory and Practice
- Behavioral Health: Theory/Practice - Children and Adolescents
- Fieldwork Level I — Experience I
- Physical Disabilities II: Theory and Practice
- Pediatrics II: Theory and Practice
- Behavioral Health: Theory/Practice - Adults
- Professional Issues
- Simulation Lab
- Aging
- Community Models of OT Practice
- Fieldwork Level I — Experience II
- Orientation to Fieldwork II
- Fieldwork Level II — Experience I
- Fieldwork Level II — Experience II
- Seminar

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**Related/General Education Courses**
- Anatomy and Physiology I
- Anatomy and Physiology Lab I
- Anatomy and Physiology II
- Anatomy and Physiology Lab II
- Fundamentals of Public Speaking
- College Composition I
- College Composition II
- Science of Success
- Developmental Psychology
- Abnormal Psychology
- Wellness Elective

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**Total Required Credits**

45

**Abilities**
- Reading
- Writing
- Communication
- Math

**Questions or Concerns:**
Department of Allied Health
alliedhealthcareers@ndscs.edu
701-671-2961

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**Return to Index**

For updated information, visit NDSCS.edu

Revised May 2021
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 those functions of pharmacy practice that do not require a pharmacist’s professional education or judgment.

NDSCS offers two on-campus 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 other 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 Applied Science.
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.

Course Code Course Title Credits
PHRM 123 Pharmacy for Pharmacy Technicians I 2
PHRM 124 Pharmacy 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 (Professional/Community) 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.

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

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 2021
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 those functions of pharmacy practice that do not require a pharmacist’s professional education or judgment.

NDSCS offers two on-campus 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 regarding this issue if it applies.

The 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.

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 101 | Fundamentals of Public Speaking | 1 |
ENGL 105 | Technical Communications | 3 |
ENGL 120 | College Composition II | 3 |
ENGL 125 | Introduction to Professional Writing | 1 |
FYE 101 | Science of Success | 1 |
HPER 210 | CPR and First Aid (Professional/Community) | 2 |
PHIL 210 | Ethics | 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.

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

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 2021
Plumbing

Contact Information
Ivan Maas, department chair
ivan.maas@ndscs.edu
701-671-2662
Barnard Hall 115

Delivery Methods
Face-to-Face: Wahpeton

The Plumbing program at NDSCS provides theory, code and hands-on training to prepare students for work in the plumbing field. The program also provides training in blueprint reading and drafting as well as a course that focuses on workplace safety. Upon successful completion of the safety course, the students will attain the OSHA 10-hour certification card. Students participate in SkillsUSA State Skills Competition and take the SkillsUSA Competency exam.

Students will spend hours in the lab learning to work with copper, plastic and PEX piping methods and also learning the proper procedures for installing fixtures. Lab courses seek to create good work habits and to develop interpersonal skills. Design classes are included to help students advance their careers in the plumbing industry. Green technology techniques are presented to the students as they are an ever-growing source of discussion regarding conservation.

Upon successful completion of the NDSCS Plumbing program, up to 2,040 schooling hours may be credited toward the apprenticeship training time.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing – 237</td>
</tr>
</tbody>
</table>

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 Building Systems department chair at 701-671-2662 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 Plumbing.

Course Code | Course Title                              | Credits |
------------|-------------------------------------------|---------|
MSYS 101    | Safety for Mechanical Systems Technicians | 1       |
MSYS 103    | Math for Mechanical Systems Technicians   | 3       |
MSYS 151    | Drafting and Sketching                    | 2       |
PLMB 101    | Plumbing Theory and Code                   | 4       |
PLMB 102    | Plumbing Theory and Code                   | 4       |
PLMB 105    | Core Curriculum for Plumbers               | 2       |
PLMB 111    | Plumbing Lab                               | 6       |
PLMB 112    | Plumbing Lab                               | 6       |
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 2021
Powersports Technology

Contact Information
Luke Kasowski, program coordinator
luke.kasowski@ndscs.edu
701-671-2544
Schuett Hall 125

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:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>NEXT GENERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>Writing – 240</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 237</td>
</tr>
</tbody>
</table>

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.

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 2021
Precision Machining Technology

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.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math – 17</td>
<td>Arithmetic – 51</td>
<td>Writing – 237</td>
</tr>
</tbody>
</table>

Elementary Algebra – 25  QAS – 232

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 Manufacturing Technology department chair at 701-671-2478 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, 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  2
ENGL 120  College Composition II  3
ENGL 125  Introduction to Professional Writing  2
COMM 110  Fundamentals of Public Speaking  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:
• 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 2021
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 ProBook 650 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately $950 if purchased from NDSCS. For further information, contact Lonnie Wurst, Robotics, Automation and Mechatronics Technology program coordinator, at 701-671-2832.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math – 17</td>
<td>Arithmetic – 51</td>
<td>Writing – 237</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>OAS – 232</td>
</tr>
</tbody>
</table>

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 Robotics, Automation and Mechatronics Technology program coordinator at 701-671-2832 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 Robotics, Automation and Mechatronics Technology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECAL 224</td>
<td>Automated Industrial Controls Lab</td>
<td>5</td>
</tr>
<tr>
<td>ECAL 241</td>
<td>Basic Motor Controls Lab</td>
<td>3</td>
</tr>
<tr>
<td>ECAL 243</td>
<td>Programmable Logic Controllers Lab</td>
<td>3</td>
</tr>
<tr>
<td>MFGT 110</td>
<td>Industrial Shop Practices</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 101</td>
<td>Applied DC Theory</td>
<td>4</td>
</tr>
<tr>
<td>RAMT 103</td>
<td>Applied AC Theory</td>
<td>4</td>
</tr>
<tr>
<td>RAMT 107</td>
<td>Mechanical Drives and Maintenance I</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 109</td>
<td>Mechanical Drives and Maintenance II</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 137</td>
<td>Print Reading, Drafting and Safety</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 202</td>
<td>PLC’s II</td>
<td>3</td>
</tr>
<tr>
<td>RAMT 203</td>
<td>Machine Safety and Panel Building</td>
<td>3</td>
</tr>
<tr>
<td>RAMT 208</td>
<td>Information Technology for Technicians</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 221</td>
<td>Robotics II</td>
<td>3</td>
</tr>
<tr>
<td>RAMT 223</td>
<td>Solid State Systems Lab</td>
<td>4</td>
</tr>
<tr>
<td>RAMT 240</td>
<td>Principles of Project Management</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 244</td>
<td>System Integration and Troubleshooting</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 246</td>
<td>Quality Assurance Standards and Methods</td>
<td>3</td>
</tr>
<tr>
<td>RAMT 250</td>
<td>Drives and Servo Systems</td>
<td>2</td>
</tr>
<tr>
<td>RAMT 297</td>
<td>Cooperative Education</td>
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<td>2</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
<td>2</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>WELL 101</td>
<td>Wellness Electives</td>
<td>2</td>
</tr>
<tr>
<td>MATH 130</td>
<td>Technical Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>MATH 132</td>
<td>Technical Algebra I</td>
<td>2</td>
</tr>
<tr>
<td>MATH 136</td>
<td>Technical Trigonometry</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Human Relations in Organizations</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Required Credits 72

Revised: May 2021
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 ProBook 650 laptop or equivalent. Please refer to the NDSCS website for specifications. The cost will be approximately $950 if purchased from NDSCS. For further information, contact Lonnie Wurst, Robotics, Automation and Mechatronics Technology program coordinator, at 701-671-2832.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>18</td>
<td>COMP – 61</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>18</td>
<td>WritePlace – 3-4</td>
<td>3</td>
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<tr>
<td>Math</td>
<td>21</td>
<td>Arithmetic – 51</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elementary Algebra – 25</td>
<td>2</td>
</tr>
</tbody>
</table>

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 Robotics, Automation and Mechatronics Technology program coordinator at 701-671-2832 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 Robotics, Automation and Mechatronics Technology – Mechatronics Engineering Technology.
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.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 105</td>
<td>Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Human Relations in Organizations</td>
<td>2</td>
</tr>
<tr>
<td>Total Required Credits for Certificate</td>
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<td></td>
</tr>
</tbody>
</table>

Recommended:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 101</td>
<td>Computer Literacy</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>Human Relations in Organizations</td>
<td>2</td>
</tr>
<tr>
<td>Total Required Credits for Diploma</td>
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<td></td>
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</tbody>
</table>

Total Required Credits for Associate in Applied Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
<td>1</td>
</tr>
</tbody>
</table>

* Technical credits may be earned by a combination of college courses and/or Work-Based Learning Experiences.

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.

For updated information, visit NDSCS.edu

NORTH DAKOTA STATE COLLEGE OF SCIENCE
NDSCS.EDU

Revised: May 2021
Journeyworker Track

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 6,000 hours (including a minimum of 400 related study hours). Students considered for acceptance must complete all admission requirements.

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
<th>ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading – 15</td>
<td>Reading Comp – 61</td>
<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
</tbody>
</table>

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 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 Technical Studies.

Revised: May 2021
Unmanned Aircraft Systems (Certificate)

**Admission Requirements**

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
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</tr>
</thead>
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<td>Reading – 15</td>
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<td>NEXT GENERATION</td>
</tr>
<tr>
<td>English – 15</td>
<td>WritePlacer – 3-4</td>
<td>Reading – 240</td>
</tr>
<tr>
<td>Math – 17</td>
<td>Arithmetic – 51</td>
<td>Writing – 237</td>
</tr>
<tr>
<td></td>
<td>Elementary Algebra – 25</td>
<td>QAS – 232</td>
</tr>
</tbody>
</table>

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 Construction and Design Technology department chair at 701-671-2116 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 Unmanned Aircraft Systems (UAS).
Welding Technology

Welding Technology Certificate

**Contact Information**
Clint Gilbertson  
Program Coordinator – NDSCS Wahpeton  
clint.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 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.

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

Required minimum placement scores:

<table>
<thead>
<tr>
<th>ACT</th>
<th>ACCUPLACER</th>
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</thead>
<tbody>
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<tr>
<td></td>
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<td>QAS – 225</td>
</tr>
</tbody>
</table>

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 Manufacturing Technology department chair at 701-671-2478 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 Welding Technology.

**Course Code**
**Course Title**  
MFGT 101  Robotics I  
MFGT 110  Industrial Shop Practices  
MFGT 135  Basic Metallurgy  
MFGT 123  Fabrication Methods I  
MFGT 137  Print Reading I  
WELD 151  Welding Theory I  
WELD 152  Welding Theory II  
WELD 153  Welding Lab I  
WELD 154  Welding Lab II  

**Related/General Education Courses**
Certificate  
MATH 130  Technical Mathematics  
FYE 101  Science of Success  
Social and Behavioral Sciences, Humanities, History and/or Computer Electives  

**Total Required Credits for Certificate**  
31

Revised: May 2021
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 industry. 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.

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

Required minimum placement scores:

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<td>Elementary Algebra – 25</td>
<td>QAS – 225</td>
</tr>
</tbody>
</table>

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 Manufacturing Technology department chair at 701-671-2478 for strategies to meet the admission requirements.

**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.

*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
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MFGT 101</td>
<td>Robotics I</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 110</td>
<td>Industrial Shop Practices OR</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 135</td>
<td>Basic Metallurgy</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 123</td>
<td>Fabrication Methods I</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 137</td>
<td>Print Reading I</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 140</td>
<td>Fabrication Methods II</td>
<td>2</td>
</tr>
<tr>
<td>MFGT 141</td>
<td>Print Reading II</td>
<td>2</td>
</tr>
<tr>
<td>WELD 151</td>
<td>Welding Theory I</td>
<td>3</td>
</tr>
<tr>
<td>WELD 152</td>
<td>Welding Theory II</td>
<td>3</td>
</tr>
<tr>
<td>WELD 153</td>
<td>Welding Lab I</td>
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<tr>
<td>WELD 154</td>
<td>Welding Lab II</td>
<td>5</td>
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<tr>
<td>WELD 201</td>
<td>Welding Theory III</td>
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<tr>
<td>WELD 202</td>
<td>Welding Theory IV</td>
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<tr>
<td>WELD 211</td>
<td>Welding Lab III</td>
<td>7</td>
</tr>
<tr>
<td>WELD 212</td>
<td>Welding Lab IV</td>
<td>7</td>
</tr>
</tbody>
</table>

### Related/General Education Courses

**Diploma**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 105</td>
<td>Technical Communications</td>
</tr>
<tr>
<td>MATH 130</td>
<td>Technical Mathematics</td>
</tr>
<tr>
<td>MATH 132</td>
<td>Technical Algebra I</td>
</tr>
<tr>
<td>Social and Behavioral Sciences, Humanities, History and/or Computer Electives</td>
<td>4</td>
</tr>
<tr>
<td>Wellness Elective</td>
<td>1</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
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</tbody>
</table>

**Associate in Applied Science**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENGL 105</td>
<td>Technical Communications</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
</tr>
<tr>
<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
</tr>
<tr>
<td>MATH 130</td>
<td>Technical Mathematics</td>
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<tr>
<td>MATH 132</td>
<td>Technical Algebra I</td>
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<td>MATH 136</td>
<td>Technical Trigonometry</td>
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<tr>
<td>Social and Behavioral Sciences, Humanities, History and/or Computer Electives</td>
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</tr>
<tr>
<td>Wellness Electives</td>
<td>2</td>
</tr>
<tr>
<td>FYE 101</td>
<td>Science of Success</td>
</tr>
</tbody>
</table>

**Total Required Credits for Diploma** | 63

**Total Required Credits for Associate in Applied Science** | 69

Award

Upon successful completion of the required courses, students will be awarded a diploma or Associate in Applied Science degree in Welding Technology.
(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 and the application methods safely. 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. Prerequisites: 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 student 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, stress, 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 repair methods, stress, 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 repair 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 120 Applied Welding (3)
This course covers basic welding instruction for students enrolled in the Auto Body curriculum. Major emphasis is placed on gas metal arc welding (GMAW), using wire metal inert gas (MIG) welders on sheet-metal gauges used in modern unibody automobiles. Introduction to oxy-acetylene welding and cutting procedures also is covered. Corequisites: ABOD 101 and ABOD 113. (F)

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 Wheel Alignment and Measuring Systems (2)
This theory/lab course covers tasks necessary to diagnose, repair and replace frame parts on today’s vehicles. The use of various measuring systems will be used in this course to perform proper repairs. Prerequisites: All ABOD 100-level courses. (F)

ABOD 202 Frame/Body and Structural Repairs (2)
This theory/lab course covers tasks necessary to repair and replace frame, unibody and structural parts on today’s vehicles. Chainless anchoring, magna racks and floor pulling equipment will be used in this course. This course is co-scheduled with ABOD 201 and ABOD 203. 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, refinish, and related procedures. Prerequisites: ABOD 100 level courses. (F)

ABOD 204 Estimating and Job Costing (2)
This theory/lab course covers estimating vehicles 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 205 Body Shop Planning (2)
Students will learn the importance of a properly designed collision repair facility and its importance in the production of the repair facility. The students will design and layout a working body shop. 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, refinish, and related procedures. Prerequisites: ABOD 201, ABOD 202, ABOD 203. (S)

ABOD 251 Auto Trim/Upholstery Theory (2)
A lecture, discussion, demonstration and practical applications course in automotive and related auto trim and upholstery techniques. Students receive training in basic upholstery processes involving sewing machine operation, maintenance and repair; measuring, marking and cutting covering materials; seat re-upholstering; trim panel making and covering, headliner recovery; cabinet installation; vinyl top installation; convertible top replacement; window tinting and various other auto trim procedures. (By arrangement)

ABOD 252 Sheet Metal Fabrication Theory (2)
A lecture, discussion, demonstration and practical applications course involving fabrication of repair and replacement body panels using shears, brakes, slip rollers, bead rollers, shakers, stretchers, maltes and sheet bage, English wheels and common body hand tools. (By arrangement)

ABOD 253 MIG/TIG Specialty Welding (2)
A lecture, discussion, demonstration and practical applications course involving Metal Inert Gas (MIG) and Tungsten Inert Gas (TIG) welding techniques to fabricate and repair light to medium gauge steel, aluminum, and stainless steel used in the specialty vehicle industries. Hammer welding using an Oxygen/Acetylene gas torch will be covered. (By arrangement)

ABOD 254 Custom Painting/Vinyl Graphics Theory (2)
A lecture, discussion, demonstration and practical applications course exploring the artistic side of automotive painting, special effects, and graphic design, using common refinish products and equipment as well as air brushing, pinstriping, special effect finishes, graphic designs and vinyl plotters in creating rolling works of art. (By arrangement)

ABOD 261 Basic Auto Body Specialty Lab I (4)
A practical application of basic auto body and specialty skills in the repair, restoration, customizing and building of special interest vehicles. Students develop skills of fabrication using basic and specialized tools and equipment. Learned tasks are performed on live production vehicles. Students also visit restoration/custom/hot rod/street rod shops to gain insight into the specialty vehicle industries. (By arrangement)

ABOD 262 Basic Auto Body Specialty Lab II (4)
A continuation of ABOD 261. Students continue to develop skills in the repair, restoration, customizing and building of live production vehicles. (By arrangement)
ABOD 263  Advanced Auto Body Specialty Lab I (4)  A practical application of all skills required to repair, restore, customize and build specialty vehicles. Specialties of auto trim/upholstery, sheet metal fabrication, MIG/TIG welding, and custom painting are incorporated on live production projects. Students also visit restoration/custom/hot rod/street rod shops to gain insight into the specialty vehicle industries. (By arrangement)

ABOD 264  Advanced Auto Body Specialty Lab II (4)  A continuation of ABOD 263. Students continue to develop advanced specialty skills on live production projects. (By arrangement)

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)  The legal environment of business, governmental regulation, contracts and property. The study of the legal and regulatory environment in which business firms operate. Topics include contract, environmental, criminal, tort law, business ethics and social issues. (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 correspondence. (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, S)

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)

(AGRl) 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 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)

AGRI 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 will also 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)

AGRI 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)

AGRI 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. Students 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)

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.

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 DRAFTING AND ESTIMATING TECHNOLOGY

ARCT 101  Architectural Drafting 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 Drafting II (5)
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 (3)
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 133  Residential Methods and Materials (2)
This course is an introduction to the terminology, methods of construction, and building materials used in residential construction. This course will develop the student's vocabulary and knowledge of the construction industry relating to construction practices and construction material requirements. (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 201  Architectural Drafting 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 Drafting 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 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  Commercial Methods and Materials (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, roof, and interior 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 234 Structural Steel Detailing I (3)
The primary objective of this class is to broadly cover the subject of structural steel drafting, emphasizing the process of preparing structural steel design and fabrication drawings for commercial building applications. Students are introduced to a wide variety of practical drafting examples and assignments that structural steel design or detail drafters might encounter in an on-the-job situation. The design of beams, columns and connections are also discussed so the students are aware of the terminology and design process. (S)

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 sentencing 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, S)

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 expressions and radicals. 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 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 factorizing, 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

AUTO 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)

AUTO 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 103. (S)

AUTO 103 Autonomous Sensing Systems (2)
Students will learn 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)

AUTO 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)

AUTO 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 Ohm’s 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 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 noise. This course is offered both fall and spring semesters. Prerequisites: 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 285  Light Duty Diesel (2)
A lecture, discussion class covering the operational principles of the light duty diesel vehicles used in the passenger vehicle market. A study of diesel fuels, fuel delivery systems, diesel fuel injectors, exhaust emissions systems, air delivery, diagnostic checks, and using scan tools and fuel pressure test equipment to diagnose system failures.

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 will present students with the fundamentals of marketing research for understanding the role of research in managerial strategic planning, defining the problem, designing research instruments, and analyzing data to make the proper recommendations. (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. (F, 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 demonstrate 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 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: Biology 150 and Biology 150L. Corequisite: BIOL 151. (S) ND:LABSC
BIOI 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: BIOI 150 or BIOI 151. Corequisite: BIOI 170L.
(S-even years) ND:LABSC

BIOI 170L General Zoology Lab (1)
A laboratory course to be taken in conjunction with BIOI 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: BIOI 170. ND:LABSC

BIOI 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: BIOI 115 or
Corequisite: BIOI 221. (S, O)

BIOI 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: BIOI 220L. (F, S, Su, O) ND:LABSC

BIOI 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: BIOI 220. (F, S, Su, O) ND:LABSC

BIOI 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: BIOI 220. Corequisite:
BIOI 221L. (F, S, Su, O) ND:LABSC

BIOI 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: BIOI 221. (F, S, Su, O) ND:LABSC

BIOI 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.

BIOI 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
elements 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 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 115  Introductory Chemistry (3 credits)
Introductory chemistry is 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, equilibria 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, alynes, 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 116L. 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 122L. 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
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 synthesizes, 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 105 Microcomputer Spreadsheet (Excel) (3)
This course is designed to teach the use of spreadsheet software and the
types of applications adaptable to this software. (O)

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—one 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 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 commands-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 233 Vector Graphics and Web Animation (3)
This course will introduce students to a development tool that allows them to create interactive experiences, often by using animation. Students will create complex animations for the Web, using drawing tools and tools for creating interactive controls such as navigation buttons and menus. Students will also learn how to incorporate sounds and video into an application and use the software’s publishing capabilities to create Websites and Web-based applications, such as games. Students will also utilize specific tools in this software package such as ActionScript, behaviors and components. (S, 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 235 Digital Video Basics (3)
This course will introduce students to a digital video editing application. Students will learn how to gather loose artwork, video clips, bitmap images and vector graphics, and bring them together to create a new video product. Students will gain an understanding of how to work with transitions, clips, audio, titles, video effects and animating clips. In this course they will also explore editing techniques and exporting options into a movie, frame, Edit Decision List or a filmstrip. (S, O)

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 281 Fundamentals of Network Security II (4)
Introduction to Network Security course focusing on the overall security processes with particular emphasis on hands-on skills in the following areas: firewall design, installation, configuration and maintenance; AAA implementation using firewalls; Intrusion Detection implementation using firewalls; and Virtual Private Networks implementation using firewalls. Prerequisite: CIS 280. (S)

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 283 Computer System Security Advanced (4)
Designed to provide participants with an in-depth understanding of the various methods used for attacking networks and computer systems. Students will learn the concepts, principles and techniques, including applied exercises, for attacking and disabling a network. These methodologies are intended to provide insight into the use of detection strategies and countermeasures needed to properly secure network servers, hardware and clients. Prerequisite: CIS 282. (S)

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 290 Network Security Design (Capstone) (4)
This course affords the network security specialist the opportunity to conduct a vulnerability analysis upon a network in order to practice or refine the attack methodologies with the attacker tools and techniques to which the student was exposed during the various program courses. The student must demonstrate the ability to design, plan and execute a vulnerability analysis against an organization network. The student must prepare a written report of the security design, attack methodology, tools and techniques. (S)

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. (S)

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)
CMT 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, markers, traversing with transit or total stations, traverse calculations, bearing calculations, remote elevations and distances 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 130  Green Building Fundamentals (2)
This course is designed to cover the fundamental understanding of sustainable construction practices and your role in the Green Environment. We will be taking a look at ways to preserve the environment, save energy, and make good choices regarding the health of the planet. Through the introduction of new construction practices and products, you will see how the greening of America has already taken root. (S)

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 employees 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 employees 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) 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 is a class about the joys and challenges of romantic, platonic, family, and work relationships. Interpersonal communication studies the theory and practice of communication skills affecting day-to-day interactions with other people. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, and developing and maintaining personal/professional relationships. This course is designed to develop insights and skills to help maximize success and minimize failures in interpersonal interactions. Developing sensitivity to our behavior choices and their consequences and enlarging our repertoire of interpersonal communication skills are the desired outcomes for this course. (F, S, Su) ND:SS

COMM 216  Intercultural Communication (3)
This course provides an introduction to communication between people from different cultures. Course content focuses on the application of theory and research to intercultural communication. (F, S, Su) ND:SS

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 101  Introduction to Computers (3 credits)
General hardware and software issues such as terminology and environments. Applications such as: word processing, spreadsheets, databases and Internet usage. An introduction to the subject of Computer Information Systems including computer personnel, hardware and software. Students will be required to identify the various units of a computer and their functions; compare computer systems; utilize various number systems; research current issues surrounding computers and their use; examine the elements of computer program planning and coding; and be knowledgeable in the variety of programming languages available. Word processing, spreadsheet and database software packages will be used to familiarize the student with computer concepts and usage. (F, S) ND:COMPSC

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 122  Visual Basic (3)
Introduction to programming in the BASIC/Visual BASIC Language. The concepts of object-oriented programming will be integrated into all programming assignments. These concepts include the design and construction of a Windows program using Visual BASIC tools and creating graphics, text and data within the Windows environment. (F, Su, O) ND:COMPSC

CSCI 125  Beginning COBOL (II) (3)
An introduction to programming in the COBOL language using structured design and top-down testing. Business-oriented projects will involve input and output files, printed reports with headings and page breaks, arithmetic operations including packed decimal fields, and decision and looping statements. Students must write appropriate program documentation and adhere to rigid programming standards. (F, 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: CSCI 160. (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 172  Intermediate Visual Basic (3)
This course is a continuation of CSCI 122 Visual BASIC. The class teaches students how to access sequential files and random-access files. It teaches students how to use database management systems, set up menus and create reports. It also teaches students how to set up and use variable arrays and create a Web page with Visual BASIC. Prerequisite: CSCI 122. (S, O)

CSCI 175  Intermediate COBOL (II) (4)
An intermediate-level programming in the COBOL language as a continuation of CSCI 125. Students will be introduced to systems analysis and design concepts. Control breaks, multi-level array processing, sorting, sequential file maintenance and sub-programs will be covered. Prerequisite: CSCI 125. (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/output 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 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 222/172, 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 inversing 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. Students will apply all concepts to a final project. 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 (6 credits)
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 HACCP 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. This course allows the student to earn a certificate from National Restaurant Association Educational Foundation’s Management First Program™. The Manage First Program™ focuses on the key competencies defined by today’s restaurants, hospitality and foodservice leaders. 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. This course allows the student to earn a certificate from National Restaurant Association Educational Foundation’s Management First Program™. The Manage First Program™ focuses on the key competencies defined by today’s restaurants, hospitality and foodservice leaders. 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 mies 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 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 101  Dental Radiology: Health and Safety (2 credits)
This course is for Dental Assistants that are currently working in a dental office and are planning to take the Dental Assisting National Board (DANB) Exam. The course will provide a review of the critical content in the radiation health and safety component of the DANB exam as well as test-taking strategies to enhance performance on the exam. The majority of the DANB test sites now require students to take the computerized format of the exam and taking an online course should make you more confident with the format when you take the DANB exam. Prerequisite: Student must be currently employed in a dental office with a minimum of three months Dental Assisting experience. (S, O)

DAST 102  Infection Control (2)
This is a preparation course for the Infection Control segment of the Dental Assisting National Board (DANB) examination. It is designed for Dental Assistants who are currently employed in the dental office with at least three months of chairside experience and who are preparing to take the examination. The course will provide relevant information through reading assignments, summaries, class discussion sessions and examinations. Upon completion of this course, the student will have knowledge in all areas of infection control and be prepared for the DANB examination. (S, O)

DAST 103  General Chairside (2)
This is a preparation course for the General Chairside segment of the Dental Assisting National Board examination. It is designed for Dental Assistants who are currently employed in the dental office one year and who are preparing to take the examination. The course will provide relevant information through reading assignments, summaries, class discussion sessions, and examinations. Upon completion of this course, the student will have knowledge in general chairside and be prepared for the Dental Assisting National Board examination. (O)

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 107  Oral Anatomy for the Dental Assistant (2)
This course is a study of dental team dynamics, infectious disease development and methods of controlling and preventing dental diseases. Prerequisite: Acceptance in the Dental Assisting program. Corequisite: DULA 299. (S)

DAST 108  Pre-Clinic for the Dental Assistant (1)
This course will be online. Prerequisite: Acceptance into the Dental Assisting program. Corequisite: DAST 111. (F)

DAST 109  Dental Radiology for the Dental Assistant (3)
This course provides basic instruction in 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 110  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 111  Dental Radiology for the Dental Assistant (3)
This course is a continuation of Food Preparation I. A review of the human body systems will be covered. The course will focus on pre-clinical and clinical skills and encompasses educational and licensure requirements for dental assistants, laboratory competency in basic radiography techniques for bus station, and dining room setup. Emphasis is on 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)

DAST 112  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 assistants, laboratory competency in basic radiography techniques for bus station, and dining room setup. Emphasis is on 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: Satisfactory completion of DAST 111. (S)

DAST 113  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)
For updated information, visit NDSCS.edu
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 tools 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, carries 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, charting of human dentition, muscles, 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. (F)

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 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. (Su)

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. (S)

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 201L. (F)

DHYG 202 Clinic IV (1)  
The course provides instruction in continuing information fundamental principles of clinical dental hygiene. Specific topics to be discussed include: dental specialties, dental injuries, rubber dam, periodontal dressing and suture removal, 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 202L, 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. Students participate in off-campus clinical experiences with a diverse patient population. Prerequisite: DHYG 201L. Corequisite: DHYG 202L. (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, 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 ADEE 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 Heavy Duty Diesel Engines (7)
A lecture and lab type 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 215 Heavy Duty Diesel Engines (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 diesel engines that the agricultural, transportation and industrial industries use on their equipment. Prerequisite: DTEC 125. (F, S)

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 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 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 connect 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 150 AEMT Fundamentals (2)
This course will prepare the student for careers at the next level of pre-hospital emergency medicine. In this course students will learn to identify, assess, manage, and treat various types of pre-hospital traumatic and medical emergencies. The primary focus of the Advanced Emergency Medical Technician (AEMT) is to provide basic and limited advanced emergency medical care and transportation for critical and emergency patients under the scope of practice set forward by the U.S. Department of Transportation. (S)

EMS 150L AEMT Fundamentals Lab (1)
The purpose of the laboratory is to discuss, perform and relate the concepts taught in the AEMT fundamentals course. 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 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 201 Systems and Communications in EMS (1)
This is an introductory course for students pursuing the Paramedic (EMT) Technology program. It will build on the knowledge gained during the student’s EMT-basic education and experiences as well as introducing the student to the expanded role of the paramedic. Topics include but are not limited to: roles and responsibilities, illness and injury prevention, history of EMS, medical/legal issues and ethics. (F)

EMS 203 Pharmacology II (2)
This is the second of a two-part course that prepares 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. Topics include neurology, endocrinology, immunology, infectious diseases, gastroenterology and associated interventions. (F)

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. Topics include toxicology, urology, hematology, environmental conditions, behavioral and psychiatric disorders, and associated interventions. (F)

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 222 Medical Emergencies (4)
This course prepares the paramedic to identify, assess, manage, and treat various medical emergencies. Topics include pulmonology, neurology, endocrinology, immunology, infectious diseases, gastroenterology, toxicology, urology, hematology, environmental conditions, behavioral and psychiatric disorders, and associated interventions. (S)

EMS 231 Paramedic Lab I (2)
This is the first in a series of three paramedic lab courses. 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)
This is the second in a series of three paramedic lab courses. 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)
In this course students will enhance their skills in treating adult victims of cardiac arrest or other cardiopulmonary emergencies, while earning their American Heart Association ACLS (AHA ACLS) for Healthcare Providers Course Completion Card. Students will also use a series of simulated pediatric emergencies to reinforce the important concepts of a systematic approach to pediatric assessment, basic life support, treatment algorithms, effective resuscitation and team dynamics, while earning their American Heart Association PALS (AHA PALS) for Healthcare Provider Course Completion Card. 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. (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 the FISDAP data collection system, ESO and the Moodle database. (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 290  Introduction to Community Paramedicine (3)
This course will cover the fundamentals of community paramedicine. It will include the topics of the roles of the community paramedic, social determinants of health, public health, cultural competencies, and safety/wellness of the provider. (F)

EMS 291  Medical Issues in Community Paramedicine (4)
Students will learn and discuss assessment techniques, lab procedures, special and home health equipment and the diseases they are most likely to encounter in this role. (F)

EMS 291L  Medical Issues in Community Paramedicine Lab (1)
Students will learn and practice assessment techniques, lab procedures, special and home health equipment and the treatments for diseases they are most likely to encounter in this role. Corequisite: EMS 291. (F)

EMS 298  Community Paramedicine Clinical Experience (2)
This course will put the student into primary and specialty care areas in order gain a deeper understanding of disease processes they may encounter. Course objectives mirror EMS 291 but are applied or observed in a live environment. This class includes a mix of sites from the Fargo-Moorhead area and/or sites local to the student. (F, S, Su)

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, S-Online, Su-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. (F)

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 (2-3)
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. The third credit is optional and requires a major research project. (S) ND:HUM

ENGL 238  Children’s Literature (3)
This 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. (F) 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. (Su-Online) 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 260 Women in America (3)
Women in America from pre-colonial to the present. Focuses on experiences of typical women of the past, including minorities. (As needed) 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 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: HIT 176. (F, O)
Corequisites: HIT 180, BIOL 220. (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 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, campsites 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)

(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 218  Personal Trainer Preparation (3)
This course is designed to prepare and qualify students to work as personal trainers. The course bridges the gap between exercise science related course work and the practical skills of personal training. (As needed)

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. (F)
(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 Athlete 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

HUM 250  Norwegian Cultural Studies (3)
This course will provide an introduction to the culture, language, and literature of Norway. It will examine cultural and historical topics representative of traditional and modern Norwegian society, including literature, film, history, arts, folk customs, education, and current events. In addition, students will develop a rudimentary proficiency in writing, speaking, and reading Norwegian by learning the fundamentals of Norwegian vocabulary, grammar, and syntax. (As needed) 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.

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 will 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 215  Komatsu Engine and Fuel Systems (4)
A theory and lab course covering the construction, operating principals, cylinder and piston service, valve service, crankshaft and bearing. 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 (6)
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 fall 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; and 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)

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)

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 146  Applied Calculus I (4)  
Limits, derivatives, integrals, exponential, logarithmic, and applications. Prerequisite: ACT score, MATH 103 or MATH 104 or placement test. (As needed) ND: MATH

MATH 147  Applied Calculus II (4)  
Definite integrals, trigonometric functions, introduction to differential equations, infinite sequences and series, probability, and applications. Prerequisite: MATH 146 or placement test. (As needed) ND: MATH

MATH 155  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—every year, 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 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 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 course introduces the safe use and functional purpose of surface grinders and cylindrical grinding attachments. CNC tool room lathe and milling 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, metalurgy, 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 students 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 run 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 will also 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; Helical 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. (F)  

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:LABS

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:LABS

See also Biology (BIOL)

(MSYS) MECHANICAL SYSTEMS
MSYS 101  Safety for Mechanical Systems Technicians (1 credit)
This course covers the safety issues that pertain to the plumbing industry. Upon successful completion the student will receive the OSHA 10-hour certification. Students are required to attend all sessions to complete the certification. (S – 1st 8-weeks)

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, convention 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 twice 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 repertoirre. 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 repertoirre. 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’s 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 repertoirre. 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)

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**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 philosophy and conceptual framework for the North Dakota State College of Science Practical 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 and assessments, utilizing the 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. (Second semester of the curriculum) (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. 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. 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 210. (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-cultural 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 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 PHRM 210. (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 child bearing 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 to 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 or the first semester of the Associate in Science in Nursing curriculum with a minimum of “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 “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 “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 “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: NURS 240, ENGL 110. Corequisite: NURS 233. (Third semester of curriculum) (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. (Third semester of curriculum) (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. (Fourth semester of the curriculum) (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. (Fourth semester of the curriculum) (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. (Fourth semester of curriculum) (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. (Fourth semester of the curriculum) (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 256 and NURS 257.

NURS 256  Life Span Nursing (4)
This course involves the role and scope of practice of the registered nurse in the care of clients across the life span with complex, multi-system alterations in health. Content and learning objectives are designed to utilize critical reasoning and the nursing process to meet nurse’s responsibilities in the provisions of holistic, safe, competent nursing care to clients throughout the life span. Focus is placed on the student’s attainment of the necessary knowledge and skill sets to provide teaching/learning opportunities to clients/families and communities within their environment to maintain optimal health. Corequisite: NURS 255 and NURS 257.

NURS 257  Life Span Nursing Clinical (3)
This clinical course is composed of supervised nursing practice that focuses on the role of the registered nurse in caring for individuals/families of any age that have complex healthcare needs. Utilizing the nursing process and critical reasoning, the student plans, implements and evaluates nursing care to manage care for groups of clients within their environment. Client/family assessment, communication and utilization of teaching/learning concepts are incorporated into the experience. Corequisite: NURS 255 and NURS 256.

NURS 261  Maternal/Newborn Nursing (2)
This course focuses on the role and scope of practice of the registered nurse in the care of childbearing families, especially those at high risk for complications. Content and learning objectives are designed to utilize critical reasoning and the nursing process to meet nurse’s responsibilities in the provisions of holistic, safe, competent nursing care for the child bearing family during the preconcept, antepartum, intrapartum, postpartum and newborn periods. Focus is placed on the student’s attainment of the necessary knowledge and skill sets to provide teaching/learning opportunities to clients/families and communities within their environment to maintain optimal health. 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 262 and NURS 263.

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 261 and NURS 263.

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 261 and NURS 262.
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)

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 reference, 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 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 (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 210  Ethics (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: Successful 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 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 pharmokinetics. 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: Successful 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)  
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 211L  College Physics I Lab (1 credit)  

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 course 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. 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 course 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. 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 departmental 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 (4 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 (4)
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 Power Tools, Introduction to Blueprints, Basic Rigging, Basic Communication Skills, Basic Employability Skills and Materials Handling. (F – 1st 8-weeks)

PLMB 111 Plumbing Lab (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 (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 132 Plumbing Drawing, Sketching and Design (3)
A study and practice in measuring, drawing 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-trips 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 production 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 103 Global Politics in a Multicultural World (3 credits)
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: HIST 207. (F) ND:SS

POLS 115 American Government (3)
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 236 The American Constitution — Civil Liberties (3)
This course analyzes U.S. Supreme Court decisions and interpretations which focus on civil liberties, equal protection, due process and First Amendment rights. (As needed) 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. This is a lecture course. 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 policies, procedures and treatment of The Joint Commission, inventory control, medication safety and medication reconciliation. Students will master the top 200 drugs as well as the commonly used over-the-counter medications. 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. 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 with approved pharmacy practice standards. Prerequisites: Successful completion of PHRM 101, PHRM 123 and PHRM 124. Corequisite: PRMT 221L. (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, 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 ATVs. 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 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 personal and organizational 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)**
An introduction to the emotional, intellectual, physical, perceptual, and social development of the child from conception to adolescence. The relationship between development and parenting also will be explored. (F, S, O) ND:SS

**PSYC 261  Psychology of Adjustment (3)**
This course focuses on the application of psychological principles to the enhancement of personal and social adjustment. In this course the student will learn what psychological research says about improving adjustment and overall quality of life. Students will explore factors that affect adjustment including gender, personality, self-esteem, ability to communicate effectively, health, stress, aging, coping processes, social influence and pressure, relationships, career preparation, work, and stages of life. The desired outcome is for students to use this knowledge to actively take charge of their own lives, effectively adjusting to an ever-changing world. (As needed)

**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 psychological 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 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 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 of 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 robot 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 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 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, SS, 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. Time will also be spent 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 122. (F)

REFG 122  Electrical Theory II (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 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 electromechanical controls and then proceed to pneumatics, direct digital controls, programmable logic controllers 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 psychrometrics, air quality, building envelope, air exchange and humidification. Emphasis is placed on energy efficiency as it pertains to duct design, layout 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 is 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 an 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 system, 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 troubleshooting. 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 203 World Religions (3 credits)
This course is an introduction to and overview of major world religions. It will focus on the primary tenets of popular religions in our world. Religions to be included in this survey will be Hinduism, Buddhism, Confucianism, Taoism, Islam, Judaism and Christianity. There is an emphasis upon the need for dialogue amongst the various religious groups in the world. (As needed) ND:HUM

RELS 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.

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, 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)
TECH 119  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 (1)
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 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. Corequisite: 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 welding 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 also 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.
State Board of Higher Education

Mark Hagerott, Ph.D.
Chancellor

Nick Hacker, Chair
Bismarck
Term Expires June 30, 2023

Danita Bye
Stanley
Term Expires June 30, 2022

Elizabeth Legerski, Ph.D., Faculty Advisor
Grand Forks
Term Expires June 30, 2022

Jill Louters
Sheyenne
Term Expires June 30, 2022

Retha Mattern, Staff Advisor
Bismarck
Term Expires June 30, 2022

Tim Mihalick
Minot
Term Expires June 30, 2023

Dr. Casey Ryan, Ph.D.
Grand Forks
Term Expires June 30, 2025

Gracie Lian, Student Member
UND
Term Expires June 30, 2022

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

John Richman, Ph.D., 1986
President

Vivian Bernotas, Certificate, 1991
Executive Assistant

Vice Presidents

Ken Kompelien, Ph.D., 1978
Interim Vice President for Instructional Affairs

Kim Dassenko, B.U.S., 2003
Office Manager

Jane Vangsness Frisch, Ph.D., 2013
Vice President for Student Affairs

Kijia Holmes, B.A., 2009
Office Manager

Emeriti

Jerry C. Olson, Ph.D., 1987-2000
President Emeritus

Vice President Emeritus

Vernon E. Hektner, M.A., 1946-1984
Dean Emeritus

Don Kruckenbarg, B.S., 1975-2005
Professor Emeritus

Robert J. Gette, M.S., 1965-2002
Vice President Emeritus

Donald J. Tobin, M.S., 1967-1995
Vice President Emeritus

Mercedes Morris, M.S., 1942-1985
Dean Emerita

Rene Moen, M.S., 1972-1999
Director Emerita

Don Engen, M.S., 1966-1998
Director Emeritus

Harlan Arneson, A.A.S., 1964-2007
Faculty Emeritus

Department Chair Emeritus

Gloria Dohman, Ph.D., 1976-2013
Associate Vice President Emerita

Margaret Wall, M.S., 1975-2013
Dean Emerita

Barbara Bang, M.Ed., 1974-2016
Dean Emerita

Faculty Emerita

Instructional Departments

Academic Services

Kara Gruenberg, B.S., 1992
Associate Professor/Department Chair

Leah Alsaker, M.F.A., 2020
Instructor

Karl Bakkum, M.F.A., 2020
Assistant Professor

Cindy Lee Deuser, M.A., 2014
ASC/ELL Associate Professor

Traci Eklund, B.A., B.S., 2011
Associate 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
Instructor

Sheldon Schmiess, M.B.A., 2008
Associate Professor

Allied Dental Education Department

Associate Professor/Department Chair

Assistant Professor

Associate Professor

Dental Assisting Program Coordinator
Construction and Design Technology
(including Architectural Drafting and Estimating 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
Assistant Professor
Architectural Drafting and Estimating Technology
Russell Pfaff, B.S., 2019
Assistant Professor
Architectural Drafting and Estimating 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
Larry Ascheman, B.S., 1993
Associate Professor
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
Instructor
Joe Larsen, A.A.S., 2018
Assistant Professor
Evan Meier, A.A.S., 2019
Assistant Professor
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)

Tom Dobrzynski, B.S., NRP, 2014
Program Coordinator
English, Communication and Performing Arts

Wade King, M.A., 1996
Associate Professor/Department Chair

Dana Anderson, M.A., 2013
Associate Professor

Kathryn Behrens, M.F.A., 2016
Assistant Professor

Dean Foley, M.A., 1994
Associate Professor

Adam Hollingsworth, Ph.D., 2016
Assistant 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 and 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

Adam Jacobson, B.S., 2020
Women’s Basketball Coach/Fundraiser Coordinator

Ryan Steffens, B.S., 2006
Grounds/Athletic Equipment Tech.

Information and 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
Associate 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 and 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
Associate 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
Assistant 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

Trina Fear, M.S.N., R.N., 2016
Assistant Professor/R.N. Program Coordinator

Crystal Graening, M.S.N., R.N., 2020
Instructor/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
Instructor

Molly Murch, M.S.N., R.N., 2020
Instructor

Whitney Petersen, M.S.N., R.N., 2015
Assistant Professor

Emily Steiner, B.S.N., R.N., 2020
Instructor

Terrie Wilson, M.S.N., R.N., 2019
Assistant Professor
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 and Behavioral Sciences

Jane Krump, M.S., L.R.D., 1980
Professor/Department Chair
Marilyn Evenson, Ph.D., 2011
Associate Professor
Jeff Hart, M.A., 2007
Associate Professor
Jennifer Krueger, M.S., 2019
Assistant Professor
Char Schuler, M.S.W., 2005
Associate Professor
Kelly Wolf, Ph.D., 2005
Instructor
# NORTH DAKOTA STATE COLLEGE OF SCIENCE

## SELECTED COLLEGE PHONE NUMBERS

<table>
<thead>
<tr>
<th>Department</th>
<th>Phone</th>
</tr>
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<tbody>
<tr>
<td>Accounts Payable</td>
<td>701-671-2288</td>
</tr>
<tr>
<td>Alumni/Foundation</td>
<td>701-671-2247</td>
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<tr>
<td>Arts, Science and Business Division</td>
<td>701-671-2295</td>
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<tr>
<td>Athletics</td>
<td>701-671-2281</td>
</tr>
<tr>
<td>Bookstore</td>
<td>701-671-2125</td>
</tr>
<tr>
<td>Business Affairs</td>
<td>701-671-2216</td>
</tr>
<tr>
<td>College Relations and Marketing</td>
<td>701-671-2245</td>
</tr>
<tr>
<td>Customer Service Desk</td>
<td>701-671-2401</td>
</tr>
<tr>
<td>Dining Services</td>
<td>701-671-2321</td>
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<tr>
<td>Distance Education</td>
<td>701-671-2275</td>
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<tr>
<td>Enrollment Services</td>
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<tr>
<td>Admissions</td>
<td>701-671-2521</td>
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<tr>
<td>Records</td>
<td>701-671-2521</td>
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<tr>
<td>Facilities Management</td>
<td>701-671-2313</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>701-671-2207</td>
</tr>
<tr>
<td>Grants Management</td>
<td>701-671-2154</td>
</tr>
<tr>
<td>Human Resources</td>
<td>701-671-2903</td>
</tr>
<tr>
<td>Information Technology Services (ITS) Service Desk</td>
<td>701-671-3333</td>
</tr>
<tr>
<td>Library Services</td>
<td>701-671-2618</td>
</tr>
<tr>
<td>Mail Center</td>
<td>701-671-2227</td>
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<tr>
<td>NDSCS Police</td>
<td>701-671-2233</td>
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<tr>
<td>President's Office</td>
<td>701-671-2221</td>
</tr>
<tr>
<td>Residential Life</td>
<td>701-671-2224</td>
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<tr>
<td>Student Life Assistant Director</td>
<td>701-671-2109</td>
</tr>
<tr>
<td>Student Health and Counseling Services</td>
<td>701-671-2286</td>
</tr>
<tr>
<td>Student Success Center</td>
<td>701-671-3000</td>
</tr>
<tr>
<td>Vice President for Instructional Affairs Office</td>
<td>701-671-2416</td>
</tr>
<tr>
<td>Vice President for Student Affairs Office</td>
<td>701-671-2258</td>
</tr>
<tr>
<td>Workforce Affairs Training Division</td>
<td>701-671-2206</td>
</tr>
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</table>

To reach these offices toll-free, call 1-800-342-4325 and use the extensions listed above.
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 Drafting and Estimating 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
   Campus Police
   Culinary Arts Department
   Customer Service
   Dining Services
   Flickertail Dining Room
   Information Technology Services
   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 Counseling Services

9. Haverty Hall
   Academic Affairs
   Admissions and Enrollment Services
   Business Affairs
   English, Communication and Performing Arts Department
   Financial Aid
   Human Resources
   Mathematics and Science Department
   President’s Office
   Safety
   Veteran 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

For updated information, visit NDSCS.edu
<table>
<thead>
<tr>
<th>Program</th>
<th>Responding Graduates</th>
<th>Jobs Posted with NDSCS Career Services</th>
<th>Beginning Average Monthly Salary</th>
<th>Reported High Monthly Salary</th>
<th>Placement Rate</th>
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<tbody>
<tr>
<td>Agriculture*</td>
<td>28</td>
<td>81</td>
<td>$3,274</td>
<td>$6,000</td>
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<td>Architectural Drafting and Estimating Technology</td>
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<td>106</td>
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<td>Associate in Science in Nursing (RN)</td>
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<td>Auto Body Repair and Refinishing Technology</td>
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<td>Culinary Arts~</td>
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<td>77</td>
<td>$2,399</td>
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<td>Dental Assisting</td>
<td>12</td>
<td>69</td>
<td>$2,917</td>
<td>$3,520</td>
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<td>Dental Hygiene</td>
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<td>85</td>
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<td>Diesel Technology***</td>
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<td>229</td>
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<td>Electrical Technology*</td>
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<tr>
<td>Emergency Medical Services (EMS)~</td>
<td>22</td>
<td>13</td>
<td>$3,280</td>
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<td>Health Information**</td>
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<td>34</td>
<td>$2,617</td>
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<td>HVAC/R Technology</td>
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<td>62</td>
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<td>Information &amp; Communications Technology^^</td>
<td>13</td>
<td>77</td>
<td>$3,875</td>
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<td>John Deere Tech</td>
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<td>229</td>
<td>$4,235</td>
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<tr>
<td>Land Surveying &amp; Civil Engineering Technology</td>
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<tr>
<td>Mechanical Systems</td>
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<tr>
<td>Occupational Therapy Assistant</td>
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<td>22</td>
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<td>Pharmacy Technician</td>
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<td>Plumbing</td>
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<td>Powersports Technology</td>
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<tr>
<td>Practical Nursing</td>
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<tr>
<td>Precision Machining Technology</td>
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<td>Registered Nursing (AAS)</td>
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<td>63</td>
<td>$3,669</td>
<td>$5,000</td>
<td>93%</td>
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<tr>
<td>Robotics, Automation &amp; Mechatronics Technology</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
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<tr>
<td>Unmanned Aircraft Systems</td>
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<td>-</td>
<td>$4,167</td>
<td>$5,000</td>
<td>100%</td>
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<tr>
<td>Welding Technology</td>
<td>30</td>
<td>106</td>
<td>$4,090</td>
<td>$7,280</td>
<td>90%</td>
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**Totals and Averages**

| | ** | $3,290 | ** | $4,904 | ** | 97% |

**NOTES:**
1. Six responding students graduated from multiple programs. Totals have been adjusted on the Totals line to count these students once.
2. Agriculture (Includes Ag Business, Agronomy, Animal Science, Farm Management, Precision Agriculture, Ranch Management)
3. Automotive Technology (Includes Automotive and Diesel Master Technician)
4. Business Management (Includes Administration and Finance, Business Technology Management, Marketing, Sales and Hospitality Services, Restaurant Management, General Business Management)
5. Culinary Arts (Includes Chef Training and Management Technology, Restaurant Management)
6. Diesel Technology (Includes General Diesel, Case IH, Komatsu)
7. Electrical Technology (Includes Construction, Industrial, Master Technician)
8. Emergency Medical Services (EMS) (Includes Emergency Medical Technician (EMT), Paramedic Technology)
9. Health Information (Includes Health Information Technician, Medical Coding)
10. Information and Communications Technology (Includes Information Systems Administrator, Information Technology Support, IT Forensics and Security, Web Design, Web Developer)
11. Jobs posted with NDSCS Career Services may be related to more than one academic program.