

NORTH DAKOTA STATE COLLEGE OF SCIENCE

# NDSCS<sup>TM</sup>

2018-2019

## CATALOG

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[NDSCS.EDU](http://NDSCS.EDU)

# ACADEMIC PROGRAMS

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## HISTORY OF NDSCS

For more than 100 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.

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

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

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

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

**2012** – In April, a \$10.5 million Bisek Hall diesel building expansion project breaks ground, and in May a \$9 million renovation begins 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 launches 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. NDSCS launches social media initiatives including Facebook and Twitter.

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

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

**2005** – NDSCS expands the Welding Technology program to NDSCS-Fargo. NDSCS kicks off the Center for Nanoscience Technology at NDSCS-Fargo.

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

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

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

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

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

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

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

## ACCREDITATIONS

The North Dakota State College of Science is accredited by The Higher Learning Commission of the North Central Association of Colleges and Schools, 230 South LaSalle Street, Suite 7-500, Chicago IL 60604-1411; phone, 312-263-0456 or 1-800-621-7440; fax, 312-263-7462.

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

- Auto Body Repair and Refinishing Technology – National Automotive Technicians Education Foundation, Inc. (NATEF), 101 Blue Seal Drive SE, Suite 101, Leesburg, VA 20175, Phone: 703-669-6650
- Automotive Technology – National Automotive Technicians Education Foundation, Inc. (NATEF), 101 Blue Seal Drive SE, Suite 101, Leesburg, VA 20175, 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](http://www.ada.org/en/coda)
- Diesel Technology – Associated Equipment Distributors, Inc., 650 E. Algonquin Rd., Suite 305, Schaumburg, IL 60173, Phone: 630-574-0650
- Emergency Medical Services (EMS) - Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763, Phone: 727-210-2354
- Health Information Technician – The Health Information Technician Associate in Applied Science degree program at NDSCS is accredited by the Commission on Accreditation for Health Informatics and Information Management Education ([www.cahiim.org](http://www.cahiim.org))

727-210-2350

- Occupational Therapy Assistant – Accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), of the American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449, ACOTE's telephone number, C/O AOTA, is 301-652-AOTA and its Web address is [www.acoteonline.org](http://www.acoteonline.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](http://www.ashp.org) and Accreditation Council for Pharmacy Education, 135 S LaSalle Street, Suite 4100, Chicago, IL 60603. Phone: 312-664-3575, [www.acpe-accredit.org](http://www.acpe-accredit.org)
- Practical Nursing – Accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326, Phone: 404-975-5000 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
- Registered Nursing (ASN and AAS) – Initial accreditation by the Accreditation Commission for Education in Nursing (ACEN), 343 Peachtree Road NE, Suite 850, Atlanta, GA 30326. Phone: 404-975-5000, [www.acenursing.org](http://www.acenursing.org), and have 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](http://www.ndbon.org)

**PLEASE NOTE: 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](http://www.coaemsp.org). 10/18**

## 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](http://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.

## 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.

## Family Educational Rights and Privacy Act (FERPA)

FERPA is a federal law which was passed in 1974. The law protects the privacy of student educational records and provides rights to students for access to and amendment of those records. FERPA applies to any higher education institutions receiving federal funds administered by the Department of Education (DOE).

FERPA also affords students certain rights with respect to their educational records. Students have the right 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 restrict the release directory information. When a student chooses to restrict the release of information, that information will not be released to any source, including publications such as telephone directories or other institutional publications. To restrict information please contact Enrollment Services in Haverty Hall 101.

NDSCS may receive many 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 education records without consent to officials of another NDUS institution in which a student seeks or intends to enroll.

See the Academic and College Policies and Procedures section of this catalog for additional information regarding the Grievance/Appeal Procedures.

# 2018-2019 ACADEMIC CALENDAR

## FALL SEMESTER 2018

Aug. 15	Fall Opening Meeting for Faculty & Staff
Aug. 19	NDSCS-Wahpeton New Student Orientation
Aug. 20	NDSCS-Wahpeton New Student Departmental Orientation
Aug. 20	Classes Begin at 4 p.m.
Aug. 21	First Full Day of Classes
Aug. 24	1st 8-weeks Final Day to Add a Class
Aug. 24	1st 8-weeks Final Day to Drop a Class without Transcript Record*
Aug. 28	Student Advising Day (No classes 1-5 p.m.)
Aug. 29	Full Semester Final Day to Add a Class
Aug. 29	Full Semester Final Day to Drop a Class without Transcript Record*
Sept. 3	Holiday – Labor Day (No classes/offices closed)
Sept. 28	1st 8-weeks Final Day to Drop a Class*
Sept. 28	Homecoming Pep Rally (No classes 11 a.m.-1 p.m.)
Oct. 2	Assessment Day (No classes 8 a.m.-12 noon)
Oct. 12	1st 8-Week Session Ends
Oct. 15	2nd 8-Week Session Begins
Oct. 17	1st 8-Week Final Grades Must Be Entered by 9 a.m.
Oct. 19	2nd 8-weeks Final Day to Add a Class
Oct. 19	2nd 8-weeks Final Day to Drop a Class without Transcript Record*
Nov. 6	Registration Begins for Spring/Summer Semesters for Currently Enrolled Students
Nov. 9	Full Semester Final Day to Drop a Class*
Nov. 9	Full Semester Final Day to Withdraw from all Classes
Nov. 12	Holiday – Veterans' Day (No classes/offices closed)
Nov. 22	Holiday – Thanksgiving (No classes/offices closed)
Nov. 23	Holiday Break – Day after Thanksgiving (No classes/offices open)
Nov. 23	2nd 8-weeks Final Day to Drop a Class*
Dec. 10-14	Final Exams
Dec. 19	Final Grades Must Be Entered by 9 a.m.
Dec. 24	Holiday Observed (Offices closed at noon)
Dec. 25	Holiday Observed (Offices closed)

## SPRING SEMESTER 2019

Jan. 1	Holiday - New Year's Day Observed (Offices closed)
Jan. 7	NDSCS-Wahpeton New Student Orientation Activities
Jan. 7	Classes Begin at 4 p.m.
Jan. 8	First Full Day of Classes
Jan. 11	1st 8-weeks Final Day to Add a Class
Jan. 11	1st 8-weeks Final Day to Drop a Class without Transcript Record*
Jan. 17	Full Semester Final Day to Add a Class
Jan. 17	Full Semester Final Day to Drop Class without Transcript Record*
Jan. 21	Holiday – Martin Luther King, Jr. (No classes/offices closed)

Feb. 15	1st 8-weeks Final Day to Drop a Class*
Feb. 18	Holiday – President's Day (No classes/offices closed)
Mar. 1	1st 8-Week Session Ends
Mar. 4	2nd 8-Week Session Begins
Mar. 6	1st 8-Week Final Grades Must Be Entered by 9 a.m.
Mar. 8	2nd 8-weeks Final Day to Add a Class
Mar. 8	2nd 8-weeks Final Day to Drop a Class without Transcript Record*
Mar. 11-15	Spring Break (No classes/offices open)
April 1	Registration Begins for Fall Semester for Currently Enrolled Students
April 5	Full Semester Final Day to Drop a Class*
April 5	Full Semester Final Day to Withdraw from all Classes
April 19	2nd 8-weeks Final Day to Drop a Class*
April 19	Holiday Break (No classes/offices closed)
April 22	Holiday Break (No classes/offices open)
May 2	Agawasia Day (No classes 12-7 p.m.)
May 6-10	Final Exams
May 10	Graduation (3 p.m.)
May 13-14	Instructional Departments Assessment Days
May 15	Final Grades Must Be Entered by 9 a.m.
May 27	Holiday – Memorial Day (Offices closed)

## SUMMER SEMESTER 2019

June 4	Classes Begin
June 6	1st 4-weeks Final Day to Add a Class
June 6	1st 4-weeks Final Day to Drop a Class without Transcript Record*
June 10	Full Semester Final Day to Add a Class
June 10	Full Semester Final Day to Drop a Class without Transcript Record*
June 21	1st 4-weeks Final Day to Drop a Class*
June 28	1st 4-week Session Ends
July 1	2nd 4-week Session Begins
July 3	2nd 4-weeks Final Day to Add a Class
July 3	2nd 4-weeks Final Day to Drop a Class without Transcript Record*
July 4	Holiday (No classes/offices closed)
July 12	Full Semester Final Day to Drop a Class*
July 12	Full Semester Final to Withdraw from all Classes
July 19	2nd 4-weeks Final Day to Drop a Class*
July 25-26	Summer Semester Final Exams
July 26	Summer Session Ends
July 31	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](http://www.ndscs.edu/Refund).*

## Mission Statement

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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

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

## Values

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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 Values

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**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.

## Strategic Goals

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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 student learning experience
2. Strategically meet business and industry needs in North Dakota and the region
3. Commitment to the continuous development of NDSCS employees
4. Strengthen relationships with internal and external stakeholders

## Quality Pledge

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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

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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.

## Assessment of Student Learning

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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.

# ADMISSION INFORMATION

## Admission Requirements and Procedures

### First Year or Freshman Student

You are a new student if you have not attended a post-secondary institution since completing high school and you are planning to be degree seeking and/or applying for financial aid. Also, you would be considered a new student if you enrolled in college level coursework prior to graduating from high school. Complete the application form found at [www.NDSCS.edu/Apply](http://www.NDSCS.edu/Apply). 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](http://www.NDSCS.edu/Apply). Refer to admission procedures for completing your admission/registration requirements. 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 new student and are required to send in coursework from ALL colleges.

Complete the application form found at [www.NDSCS.edu/Apply](http://www.NDSCS.edu/Apply). 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. Complete the re-application form found at [www.NDSCS.edu/Apply](http://www.NDSCS.edu/Apply). 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](http://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. Complete the application form found at [www.NDSCS.edu/Apply](http://www.NDSCS.edu/Apply). 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. Photocopy of I-94, I-551.
3. Non-native English speaking students are required to demonstrate proficiency in the English language. Applicants can demonstrate this by meeting any of the requirements outlined in NDUS Procedures 402.9 Admission Procedures – New Applicants with International Coursework found at [www.ndus.edu/makers/procedures/ndus](http://www.ndus.edu/makers/procedures/ndus).

### Admission Procedures

**Step 1.** Complete the application for admission - Complete the application form found at [www.NDSCS.edu/Apply](http://www.NDSCS.edu/Apply).

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

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

#### Current high school student:

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

#### Transfer student:

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

#### Returning student:

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

NDSCS does not accept faxed or emailed transcripts.

**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](http://www.NDSCS.edu/Academics).

**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](http://www.NDSCS.edu/Immunizations) for more information.

**Step 6.** All official, final transcripts and complete immunization records 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](http://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 used until the admission file is complete.

Application deadline for fall semester (begins in August) – July 15

Application deadline for spring semester (begins in January) – December 1

1. Apply online and pay the \$35 application fee. Go to [www.NDSCS.edu/Apply](http://www.NDSCS.edu/Apply) and click on the link to complete the application for admission online.
2. Submit official high school (secondary school) transcript. Transcript must be evaluated by World Education Services (WES) [www.WES.org](http://www.WES.org). Official transcripts/academic records from all secondary schools attended must be submitted to WES. There will be a cost to the student for the service charged by WES. Exemptions to this policy may be granted if you have completed an associate, bachelor or doctoral degree that has been evaluated through WES.



3. Submit official college or post-secondary transcript(s).  
Transcripts from outside the United States must be evaluated by World Education Services (WES) [www.WES.org](http://www.WES.org). Official transcripts/academic records from all secondary schools attended must be submitted to WES. There will be a cost to the student for the service charged by WES. There is no guarantee that the credits will transfer.
4. Submit test scores.  
If you are applying for an associate in applied science, diploma or certificate program, you will need to obtain minimum entrance scores in order to meet the program admission requirements for your selected program. Approved exams include the ACT, SAT and ACCUPLACER. Go to [www.NDSCS.edu/Requirements](http://www.NDSCS.edu/Requirements) for more information on the required scores for your selected program.
5. English proficiency.  
Students whose native language is not English must submit proof of English proficiency in one of the following ways:
  - At least two years of study, in good standing, at a U.S. high school or regionally accredited U.S. college/university.
  - A U.S. General Education Diploma (GED) administered in English.
  - College Composition I and College Composition II, or equivalent courses, with a grade of "A" or "B" from a regionally accredited U.S., postsecondary college and/or university.
  - Any of the placement scores on the ACT, SAT and/or ACCUPLACER for English:
    - ACT English sub test of 18 or higher
    - SAT writing of 430 or higher
    - ACCUPLACER WritePlacer of 5 or higher
    - The Test of English as a Foreign Language (TOEFL), with a minimum TOEFL internet-based test score of 70. Request your results at [www.toefl.org](http://www.toefl.org), NDSCS's code is 6476.
6. Submit the Financial Responsibility Statement.  
Submit the Financial Responsibility Statement providing evidence of financial support for one year of all anticipated educational and living expenses for study in the United States.  
  
Go to [www.NDSCS.edu/International-Students](http://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](http://www.NDSCS.edu/Immunizations) for more information.

Questions? Email [NDSCS.Admissions@ndscs.edu](mailto:NDSCS.Admissions@ndscs.edu) or call 701-671-2521.

## Criminal Background Check Requirements

1. Beginning July 1, 2008, all applications, including common application, reapplication and continuing application, will include the following questions:
  - a) Have you ever pled guilty to or no contest or been convicted of any felony? Yes/No
  - b) Within the past 10 years, have you pled guilty to or no contest or otherwise been convicted of a misdemeanor crime involving violence or the threat of violence in any court? Yes/No
  - c) Are you currently required to register as a sex offender in any state? Yes/No
  - d) Have you been dismissed or suspended from a college or university for disciplinary reasons within the last 5 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.) Yes/No

2. All applications are received in Enrollment Services. Those students who indicate "yes" to any of the above, will receive a letter stating that the applicant must provide NDSCS with a criminal history record including any pending adult charges. If sanctions were imposed, an official copy of letter(s) or documents which indicate the nature of the sanctions imposed and which confirm the completion of all sanctions imposed is required.
3. All documentation (criminal history checks and letters or documentations) must be received 15 days prior to the start of the term for the applicant to be considered for admission. If a student does not choose to attend after being admitted, and then wishes to be reconsidered for admission for a following term, the applicant must resubmit a current criminal history check and letters or documentation. 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 committee'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. A number of curriculums 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](http://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.

## Servicemembers Opportunity Colleges (SOC)

NDSCS is a member of the SOC Degree Network System.

NDSCS and SOC have developed an articulated degree plan for MOS 68Q Pharmacy Specialists to complete online (from NDSCS) for an Associate in Applied Science degree in Pharmacy Technician. A soldier meeting the requirements set forth in the degree plan and upon transcript review and approval will have classes waived which are equivalent to their MOS Pharmacy training.

Soldiers in other MOS areas may also take classes toward an NDSCS program, online or on the NDSCS campus. For additional information, call 800-342-4325 ext. 3-2189 or 701-671-2189.

## SOC Degree Network System

NDSCS is a member of the SOC Degree Network System (DNS), a subgroup of SOC Consortium member institutions selected by the military services to deliver specific associate and bachelor's degree programs to servicemembers and their families. As a member of the DNS we have agreed to adhere to academic policies intended to support military students in their academic endeavors towards degree completion.

NDSCS is approved for membership in SOCAD at the associate degree level. SOC operates the 2- and 4-year Degree Network System for the Army (SOCAD), Navy (SOCNAV), Marine Corps (SOCMAR) and Coast Guard (SOCCOAST). Refer to the SOC Degree Network System-2 and -4 Handbooks to view associate and bachelor's degree programs, location offerings and college information. An electronic version of the handbook can be found at [www.soc.aascu.org](http://www.soc.aascu.org) and on the SOCAD, SOCNAV, SOCMAR and SOCCOAST home pages.

# TUITION AND FEES

## 2018-2019 Estimated Average Annual Costs

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

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

- North Dakota resident, \$168.47 per credit
- Minnesota resident with reciprocity, \$184.80 per credit
- South Dakota, Montana, Saskatchewan and Manitoba residents, \$202.49 per credit
- MSEP<sup>3</sup> or WUE<sup>2</sup> resident, \$236.50 per credit
- Other Non-Residents and Other Canadian Provinces, \$395.68 per credit
- Online and other distance education students, \$202.33 per credit
- NDSCS-Fargo students, \$202.33 per credit

The average annual amount for fees is \$778 for all states (excluding campus-approved fees). The remainder is tuition for an average of 16 credits per semester. For current tuition, fees, housing and dining plan costs, please contact Business Affairs or check the NDSCS website at [www.ndscs.edu](http://www.ndscs.edu).

### On-Campus with Meal Plan

Residents of all states and countries will be charged in-state tuition if living on-campus with meal plan of 160 meals or greater

Residency	Tuition/Fees*	Room/Board**	Books/Supplies	Personal***	TOTAL
All States/Countries	\$5,132	\$6,220	\$1,000	\$3,403	\$15,755

### Off-Campus or On-Campus without Meal Plan

Residency	North Dakota	<sup>1</sup> Border States/Provinces	MN with Reciprocity	<sup>2</sup> WUE & <sup>3</sup> MSEP States	Other States and Countries
Tuition/Fees*	\$5,132	\$6,226	\$5,654	\$7,309	\$12,402
Room/Board**	\$6,220	\$6,220	\$6,220	\$6,220	\$6,220
Books/Supplies	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Personal***	\$3,403	\$3,404	\$3,401	\$3,406	\$3,403
<b>TOTAL</b>	<b>\$15,755</b>	<b>\$16,850</b>	<b>\$16,275</b>	<b>\$17,935</b>	<b>\$23,025</b>

### At Home (living with parents)

Residency	North Dakota	South Dakota	MN with Reciprocity	<sup>3</sup> MSEP
Tuition/Fees*	\$5,132	\$6,226	\$5,654	\$7,309
Room/Board	\$3,110	\$3,110	\$3,110	\$3,110
Books/Supplies	\$1,000	\$1,000	\$1,000	\$1,000
Personal***	\$3,403	\$3,404	\$3,401	\$3,401
<b>TOTAL</b>	<b>\$12,645</b>	<b>\$13,740</b>	<b>\$13,165</b>	<b>\$14,820</b>

<sup>1</sup> Border States and Provinces: Manitoba, Montana, Saskatchewan, South Dakota

<sup>2</sup> WUE States: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Nevada, New Mexico, Northern Marianas Island, Oregon, Utah, Washington, Wyoming (All programs except for A.S. in Dental Hygiene)

<sup>3</sup> MSEP States: Illinois, Indiana, Kansas, Michigan, Minnesota without reciprocity, Missouri, Nebraska, Wisconsin

\*\*Room/board amount is the total of a double room (\$2,820) and a 225 meal plan (\$3,400). All rates are for two semesters.

### \*\*\*PERSONAL EXPENSES

Medical/Dental	(\$84/Mo.) \$756
Clothing	(\$60/Mo.) \$540
Toiletries	(\$45/Mo.) \$405
Entertainment/Misc.	(\$56/Mo.) \$504
Transportation	(\$126/Mo.) \$1,145
Loan Fees	\$54
<b>Total</b>	<b>\$3,404</b>

### 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.

### Additional Costs by Program

Students in a number of academic programs should plan for additional expenses as part of their education. These added expenses include professional-quality tools and equipment such as laptop computers, required supplies such as uniforms and special books. Many departments also carry a program fee and special course fees that help offset instructional costs specific to that academic discipline.

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

Agriculture (1)	\$366
Architectural Drafting and Estimating Technology (1)	\$1,960
Associate in Science in Nursing (1)	\$2,150
Auto Body Repair and Refinishing Technology (1)	\$5,048
Auto Body Repair and Refinishing Technology (2)	\$1,036
Automotive and Diesel Master Technician	\$360
Automotive Technology (1)	\$7,728
Automotive Technology (2)	\$1,116
Building Construction Technology (1)	\$1,656
Caterpillar Dealer Service Technician (1)	\$6,546
Construction Management Technology (1)	\$1,810
Culinary Arts (1)	\$1,372
Culinary Arts (2)	\$1,160
Dental Assisting (1)	\$3,768
Dental Assisting (2)	\$500
Dental Hygiene (1)	\$6,276
Dental Hygiene (2)	\$4,226
Diesel Technology (1)	\$7,432
Diesel Technology (2)	\$856
Electrical Technology (1)	\$2,248
Electrical Technology (2)	\$900
Emergency Medical Technician	\$404
Emergency Medical Services (EMS) (1)	\$3,484
Emergency Medical Services (EMS) (2)	\$2,950
HVAC/R Technology (1)	\$3,870
Information and Communications Technology	\$1,810
John Deere Technology (1)	\$6,776
Land Surveying and Civil Engineering Technology (1)	\$2,110
Land Surveying and Civil Engineering Technology (2)	\$300
Occupational Therapy Assistant (1)	\$1,000
Occupational Therapy Assistant (2)	\$930
Pathway - On Campus	\$5,738
Pathway - At Home	\$3,394

Pharmacy Technician (1)	\$550
Plumbing	\$856
Powersports Technology (1)	\$6,512
Powersports Technology (2)	\$720
Practical Nursing (1)	\$2,900
Practical Nursing (2)	\$950
Precision Machining Technology (1)	\$3,582
Precision Machining Technology (2)	\$1,325
Robotics, Automation and Mechatronics Technology (1)	\$2,400
Robotics, Automation and Mechatronics Technology (2)	\$300
Welding Technology (1)	\$1,970
Welding Technology (2)	\$640

These amounts are estimates used for financial aid budgets and are based on 2018-2019 anticipated costs. Specific course fees, as outlined for 2018-2019, are listed later in this section of the catalog.

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

## 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:

### Application Fee: \$35

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

### Registration/Orientation Fee: \$48

**Auditing Fee (per semester hour):**  
50 percent of the tuition rate, plus applicable fees.

### Credit by Challenge Exam Fee:

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

### Parking Fee: \$61 per year

### On-campus Students Enrolled in Online Courses:

Additional \$25 per credit

Special course fees are recommended by the various departments and approved by their respective deans. They also are subject to change without further notice. Please see the course fees section in this catalog for a full listing of course fees.

## Special Course Fees

A number of NDSCS classes assess special course fees to offset the cost of specific materials or technology needs. This is a list of special course fees for the 2017-2018 academic year. These fees are subject to change without further notice. Updated lists of course fees are available from individual departments or Business Affairs.

Course	Purpose/use of fee	Fee
ABOD 101	Repair supplies	\$100
ABOD 102	Lab supplies/mask fit test	\$50
ABOD 103	Lab supplies	\$25
ABOD 104	Lab supplies/custom painting supplies	\$50
ABOD 120	Rod/gas/steel	\$50
ABOD 200	Lab fee	\$45
ABOD 201	Lab supplies	\$50

ABOD 202	Lab supplies	\$50
ABOD 203	Repair/paint supplies	\$100
ABOD 204	Lab supplies	\$50
ABOD 205	Lab supplies	\$50
ABOD 206	Lab supplies	\$50
ABOD 251	Supplies	\$40
ABOD 252	Supplies	\$40
ABOD 253	Supplies	\$40
ABOD 254	Supplies	\$40
ABOD 261	Supplies	\$20
ABOD 262	Supplies	\$20
ABOD 263	Supplies	\$20
ABOD 264	Supplies	\$20
ACCT 118	Special fees	\$30
AGEC 145	Software	\$40
AGEC 244	Special fees	\$20
AGEC 245	Marketing software	\$20
AGRI 275	Software upgrades	\$20
AGRI 285	Software	\$20
ANSC 116	ANSC fee	\$20
ANSC 118	ANSC fee	\$20
ANSC 192	ANSC fee	TBD
ANSC 220	ANSC fee	\$20
ANSC 292	ANSC fee	TBD
ARCT 101	Plotting/printing expenses	\$25
ARCT 102	Plotting/printing expenses	\$25
ARCT 110	Technical manual & tool usage	\$15
ARCT 121	Plotting/printing expenses	\$15
ARCT 144	Estimating manuals, forms	\$15
ARCT 201	Plotting/printing expenses	\$25
ARCT 202	Plotting/printing expenses	\$25
ARCT 212	Art supplies	\$10
ARCT 223	Plotting/printing expenses	\$25
ARCT 241	Blueprints & forms	\$10
ARCT 242	Blueprints, specs & forms	\$10
ARCT 292	Experimental course	TBD
ASC 086	Supplies	\$6
ASC 087	Supplies	\$6
ASC 088	Special fees	\$3
ASC 090	Supplies	\$5/credit
ASC 091	Supplies	\$5/credit
ASC 092	Supplies	\$5/credit
ASC 093	Supplies	\$5/credit
AUTO 103	Lab supplies	\$30
AUTO 143	Lab supplies	\$30
AUTO 165	Lab supplies	\$30
AUTO 188	Lab supplies	\$30
AUTO 206	Lab supplies, scan tool equipment, mechanical parts	\$40
AUTO 209	Lab fee	\$40
AUTO 216	Lab supplies, scan tool equipment, mechanical parts	\$40
AUTO 219	Lab fee	\$40
AUTO 226	Lab supplies, scan tool equipment, mechanical parts	\$40
AUTO 229	Lab fee	\$40
AUTO 286	Lab supplies, scan tool equipment, mechanical parts	\$40
AUTO 289	Lab fee	\$40
BADM 103	Special fees	\$100
BADM 110	Supplies	\$25
BADM 201	Special fees	\$25
BADM 202	Special fees	\$25
BADM 217	Special fees	\$25
BADM 234	Special fees	\$12
BADM 240	Special fees	\$25

BADM 281	Supplies	\$45	CMT 120	Surveying & safety supplies	\$80
BCT 110	Safety fee	\$25	CMT 165	RCMC travel	\$200
BCT 111	ACI certification tests	\$105	CMT 265	RCMC travel	\$200
BCT 115	Personal protective equipment fee	\$25	CSCI	On-campus classes merged with online classes may be charged an additional fee	\$25/credit
BCT 130	Personal protective equipment fee	\$25	CSCI 101	Special fees	\$4/credit
BCT 210	Safety fee	\$25	CSCI 102	Special fees	\$4/credit
BCT 220	Construction manual	\$10	CSCI 116	Special fees	\$4/credit
BCT 230	Personal protective equipment fee	\$25	CSCI 122	Special fees	\$4/credit
BCT 240	Construction prints	\$15	CSCI 125	Special fees	\$4/credit
BIOL 110L	Lab materials	\$15	CSCI 133	Special fees	\$4/credit
BIOL 111L	Lab fees	\$35	CSCI 134	Special fees	\$4/credit
BIOL 115L	Lab fees	\$35	CSCI 135	Special fees	\$4/credit
BIOL 124L	Lab fees	\$35	CSCI 160	Special fees	\$4/credit
BIOL 150L	Lab fees	\$35	CSCI 161	Special fees	\$4/credit
BIOL 151L	Lab fees	\$35	CSCI 162	Special fees	\$4/credit
BIOL 220L	Lab fees	\$35	CSCI 172	Special fees	\$4/credit
BIOL 221L	Lab fees	\$35	CSCI 175	Special fees	\$4/credit
BOTE 146	Flextime - special fees	\$4/credit	CSCI 183	Special fees	\$4/credit
BOTE 171	Special fees	\$25/credit	CSCI 230	Special fees	\$4/credit
BOTE 299	Special topics	TBD	CSCI 231	Special fees	\$4/credit
BUSN 170	Special fees	\$25	CSCI 263	Special fees	\$4/credit
BUSN 282	Special fees	\$100	CSCI 290	Special fees	\$4/credit
CAD 120	Plotting/printing expenses	\$25	CSCI 292	Special fees	\$4/credit
CAD 120	Online-Plotting/printing expenses	\$15	CT 113	Plotting/printing expenses	\$25
CHEM 115L	Lab fees	\$35	CT 121	Surveying supplies	\$80
CHEM 116L	Lab fees	\$35	CT 122	Surveying supplies	\$25
CHEM 121L	Lab fees	\$35	CT 132	Chemicals & materials/travel	\$80
CHEM 122L	Lab fees	\$35	CT 214	Plotting/printing expenses	\$25
CHEM 241L	Lab fees	\$35	CT 215	Plotting/printing expenses	\$25
CHEM 242L	Lab fees	\$35	CT 221	Surveying supplies	\$25
CIS	On-campus classes merged with online classes may be charged an additional fee	\$25/credit	CT 222	Surveying supplies, exam fee	\$150
CIS 101	Special fees	\$4/credit	CT 235	Printing expenses	\$25
CIS 105	Special fees	\$4/credit	CT 261	Staking materials	\$40
CIS 128	Special fees	\$4/credit	CULA	Uniform deposit	\$100/year
CIS 129	Special fees	\$4/credit	CULA	Uniform cleaning fee	TBD
CIS 164	Special fees	\$4/credit	CULA 101	Lab supplies	\$150
CIS 165	Special fees	\$4/credit	CULA 102	Lab supplies	\$150
CIS 180	Special fees	\$4/credit	CULA 201	Lab supplies	\$150
CIS 181	Special fees	\$4/credit	CULA 203	Lab supplies	\$150
CIS 182	Special fees	\$4/credit	DAST 106	Pin fee/background check-tracker/ safety & security certifications	\$100.50
CIS 183	Special fees	\$4/credit	DAST 111	Professional dues/presentation kit	\$75
CIS 188	Special fees	\$4/credit	DAST 115	Lab fee	\$164
CIS 191	Special fees	\$4/credit	DAST 120	Lab supplies	\$112
CIS 197	Special fees	\$4/credit	DAST 132L	Lab supplies	\$112
CIS 212	Special fees	\$4/credit	DAST 133	Mock board exam	\$10
CIS 215	Special fees	\$4/credit	DCAT	Uniform deposit	\$100/year
CIS 216	Special fees	\$4/credit	DCAT	Uniform cleaning fee	TBD
CIS 219	Special fees	\$4/credit	DCAT 110	Lab supplies	\$40
CIS 220	Special fees	\$4/credit	DCAT 115	Lab supplies	\$40
CIS 232	Special fees	\$4/credit	DCAT 117	Lab supplies	\$40
CIS 233	Special fees	\$4/credit	DHYG 101L	Lab supplies/dues/presentation kit	\$285
CIS 241	Special fees	\$4/credit	DHYG 102L	Clinic fees	\$210
CIS 242	Special fees	\$4/credit	DHYG 103L	Lab fees	\$145
CIS 244	Special fees	\$4/credit	DHYG 112	Background check-tracker/ safety & security certifications	\$95
CIS 267	Special fees	\$4/credit	DHYG 114	Lab fees	\$184
CIS 268	Special fees	\$4/credit	DHYG 116	Lab fees	\$114
CIS 279	Special fees	\$4/credit	DHYG 201	Safety & security certifications-renewals/ background re-check	\$75
CIS 280	Special fees	\$4/credit	DHYG 201L	Lab fees/presentation kit	\$165
CIS 281	Special fees	\$4/credit	DHYG 202L	Lab fees/CRDTS exam	\$358
CIS 282	Special fees	\$4/credit	DHYG 202	Pin fee	\$5.50
CIS 283	Special fees	\$4/credit	DHYG 210	Lab fee	\$50
CIS 284	Special fees	\$4/credit	DHYG 220	Dental association dues	\$65
CIS 290	Special fees	\$4/credit			
CIS 292	Special fees	\$4/credit			

DHYG 242	Lab fees	\$135	HIT 282	Online/on-campus	\$29/credit
DHYG 244	Lab fees	\$105	HIT 283	Online/on-campus	\$29/credit
DTEC	Uniform cleaning fee	TBD	HIT 284	Online/on-campus	\$29/credit
DTEC	Uniform deposit	\$100/year	HIT 285	Online/on-campus	\$29/credit
DTEC 109	A/C refrigerant, dyes, refrigerant recovery and certification test	\$40	HIT 286	Online/on-campus	\$29/credit
DTEC 115	Lab supplies	\$40	HIT 287	Online/on-campus	\$29/credit
DTEC 125	Lab supplies	\$40	HIT 288	Online/on-campus	\$29/credit
DTEC 135	Lab supplies	\$40	HIT 297	Special fees	\$229
DTEC 155	Lab supplies	\$30	HPER 101	Ice Fishing	\$60
DTEC 164	Lab supplies	\$30	HPER 101	Snowboarding	\$90
DTEC 185	Lab supplies	\$30	HPER 101	(Trapshooting) Shells, shot, powder	\$100
DTEC 215	Lab supplies	\$30	HPER 101	(Camping & Canoeing) Transportation, site fee & other trip expenses	\$65
DTEC 225	Lab supplies	\$30	HPER 101	(Tenting & Canoeing) Transportation, site fee & other trip expenses	\$65
DTEC 255	Lab supplies	\$50	HPER 101	(Camping & Hiking) Transportation, site fee & other trip expenses	\$55
DTEC 265	Lab supplies	\$50	HPER 101	(Camping & Biking) Transportation, site fee & other trip expenses	\$55
ECAL 111	Lab supplies	\$75	HPER 101	(Downhill Skiing) Lift ticket & ski rental	\$90
ECAL 133	Lab supplies	\$150	HPER 101	(Darts & Billiards) Maintenance	\$6.50
ECAL 137	Lab supplies	\$50	HPER 150	Training supplies	\$90
ECAL 205	(As needed)	TBD	HPER 192	Special fees	TBD
ECAL 211	Lab supplies	\$75	HPER 210	Lab supplies	\$7
ECAL 223	Lab supplies	\$75	HPER 250	Training supplies	\$90
ECAL 224	Lab supplies/software	\$150	JDAT 106	Computer & software usage	\$200
ECAL 233	Lab supplies	\$150	JDAT 165	Lab supplies	\$40
ECAL 237	Lab supplies	\$25	JDAT 215	Lab supplies	\$50
ECAL 238	Lab supplies	\$25	JDAT 255	Computer & software usage	\$200
ECAL 241	Lab supplies	\$100	MATH 125	Lab manual fee	\$3
ECAL 242	Lab supplies	\$100	MATL 111	Supplies, tool steel, tooling	\$40
ECAL 243	Lab supplies/software	\$200	MATL 112	Supplies, tool steel, tooling	\$40
ECAL 245	Lab supplies	\$50	MATL 213	Supplies, tool steel, tooling	\$40
ECAL 246	Lab supplies	\$50	MATL 214	Supplies, tool steel, tooling	\$40
ECAL 253	Lab supplies	\$150	MATL 299	Special topics	TBD
ECAL 254	Electrical fee	\$50	MFGT 101	Supplies	\$120
ECAL 255	Electrical fee	\$50	MFGT 110	Supplies	\$60
ECAL 292	Experimental course	TBD	MFGT 120	Welding gas, supplies	\$40
ECAL 299	Special topics	TBD	MFGT 121	Welding gas, supplies	\$40
EMS 110	Textbooks/testing	\$416.93	MFGT 123	Supplies	\$25
EMS 110L	Planner	\$30	MICR 202L	Lab supplies	\$35
EMS 110P	Liability insurance	\$20	MSYS 101	Supplies	\$10
EMS 150	Testing	\$97.50	MSYS 151	Drafting supplies	\$30
EMS 150L	Planner/lab fees/AEMT testing	\$440	NURS 101	Background check-tracker/linen fee/ lab kit/ATI resources-testing	\$444
EMS 231	Planner/lab fees/testing	\$337.50	NURS 101	NDSCS-Fargo – Nursing fee/ background check-tracker/linen fee/ lab kit/ATI resources-testing	\$100/credit & \$444
EMS 232	Lab fee	\$155	NURS 102	NDSCS-Fargo – Nursing fee/ lab kit/ATI resources-testing	\$100/credit & \$319
EMS 233	Lab fee	\$155	NURS 102	Lab kit/ATI resources-testing	\$319
EMS 241	Clinical fee/liability insurance	\$220	NURS 114	Presentation kit/background check-tracker/ safety & security certifications	\$150
EMS 242	Clinical fee/liability insurance	\$220	NURS 115	Lab kit/ATI resources/testing	\$314
EMS 243	Clinical fee/liability insurance/testing	\$420	NURS 118	Lab kit/ATI resources/testing	\$374
EMS 291L	Lab fees	\$330	NURS 201	Lab kit/ATI resources/testing/ Kaplan resources-testing	\$539
EMS 298	Liability insurance	\$220	NURS 202	Background re-check/safety & security certification-renewals/clinical site fee	\$115
ENGL 105	Special fees	\$9	NURS 205	ATI resources/testing	\$224
ENGL 110	Special fees	\$9	NURS 208	Graduation fee/Kaplan resources-testing	\$300
ENGL 120	Special fees	\$9	NURS 231	NDSCS-Fargo – Nursing fee	\$100/credit
ENGL 125	Special fees	\$9	NURS 232	ATI resources-testing	\$224
ENGL 211	Special fees	\$9	NURS 232	NDSCS-Fargo – Nursing fee/ ATI resources-testing	\$100/credit & \$224
ENGL 220	Special fees	\$9			
ENGL 232	Special fees	\$9			
ENGR 212	Supplies	\$100			
FYE 101	Supplies	\$12			
HIT 176	Online/on-campus	\$29/credit			
HIT 180	Online/on-campus	\$29/credit			
HIT 181	Online/on-campus	\$29/credit			
HIT 184	Online/on-campus	\$29/credit			
HIT 185	Online/on-campus	\$29/credit			
HIT 197	Online/on-campus	\$29/credit			
HIT 280	Online/on-campus	\$29/credit			
HIT 281	Online/on-campus	\$29/credit			

NURS 233	NDSCS-Fargo – Nursing fee/ lab kit/background check renewal/ clinical site fee	\$100/credit & \$145	RAMT 103	Supplies & equipment	\$50
NURS 233	Lab kit/background check renewal/ clinical site fee	\$145	RAMT 107	Supplies & equipment	\$50
NURS 245	ATI resources-testing	\$224	RAMT 109	Supplies & equipment	\$50
NURS 245	NDSCS-Fargo – Nursing fee/ ATI resources-testing	\$100/credit & \$224	RAMT 137	Supplies & software	\$50
NURS 246	NDSCS-Fargo – Nursing fee	\$100/credit	RAMT 202	Supplies & equipment	\$50
NURS 250	NDSCS-Fargo – Nursing fee	\$100/credit	RAMT 203	Supplies & equipment	\$50
NURS 251	Pinning	\$25	RAMT 221	Equipment maintenance	\$50
NURS 251	NDSCS-Fargo – Nursing fee/ pinning	\$100/credit & \$25	RAMT 242	Supplies & software	\$100
NURS 255	Kaplan resources/presentation kit	\$305	RAMT 244	Supplies & equipment	\$100
NURS 256	ATI testing	\$240	REFG	Uniform purchase	\$125/year
NURS 257	Simulation kit/background check/ safety & security certification/clinical site fee	\$200	REFG 104	Manual & test fee for EPA handling of refrigerants	\$50
NURS 263	Graduation/pin fee/NCLEX review course/ ATI testing	\$525	REFG 111	Lab supplies	\$125
OTA 101	Professional journals/dues	\$75	REFG 112	Lab supplies	\$100
OTA 102	Presentation kit/background check-tracker/ safety & certification	\$150	REFG 113	Lab supplies	\$150
OTA 111	Media kit	\$50	REFG 122	Lab supplies	\$35
OTA 112	Electronic documentation	\$65	REFG 124	Lab supplies	\$125
OTA 114	Peds handwriting assessment kit	\$20	REFG 201	Industry manuals	\$20
OTA 213	Splinting kit	\$75	REFG 202	I.C.E. test	\$30
OTA 214	Peds assessment kit	\$50	REFG 211	Lab supplies	\$125
OTA 216	Professional journals/dues/OT exam study tools	\$175	REFG 212	Lab supplies	\$150
OTA 218	Aging assessment kit	\$10	REFG 226	Lab supplies	\$75
OTA 219	Capstone project supplies	\$10	REFG 232	Lab supplies	\$100
OTA 252	Background re-check	\$45	REFG 253	Lab supplies	\$60
OTA 253	AOTA's NBCOT exam prep/safety & security certifications-renewals	\$155	REFG 254	Lab supplies	\$85
OTA 256	NBCOT & OTKE practice exams/ graduation fee	\$395	REFG 255	Lab supplies	\$105
PHRM 205	NDSCS-Fargo – Nursing fee	\$100/credit	REFG 256	Lab supplies	\$15
PHYS 120L	Lab supplies	\$35	REFG 292	Experimental course	TBD
PHYS 211L	Lab supplies	\$35	SOIL 210	Lab supplies	\$10
PHYS 212L	Lab supplies	\$35	SOIL 222	Lab supplies	\$10
PHYS 251L	Lab supplies	\$35	TECH	NOCTI testing	\$15
PHYS 252L	Lab supplies	\$35	TECH 109	A/C refrigerant, dyes, refrigerant recovery & certification test	\$40
PLMB	Uniform cleaning fee	TBD	TECH 121	Solvents, cleaners & lab supplies	\$40
PLMB	Uniform deposit	\$100/year	UAS 111	Equipment & software	\$50
PLMB 111	Lab supplies	\$150	UAS 112	FAA exam	\$160
PLMB 112	Lab supplies	\$150	UAS 121	Equipment & software	\$50
PLMB 132	Drafting supplies	\$30	WELD 153	Welding gas, supplies	\$60
PLSC 110	Computer costs, DTN annual fee	\$10	WELD 154	Welding gas, supplies	\$60
PLSC 115	Lab supplies	\$10	WELD 211	Welding gas, supplies	\$80
PLSC 225	Computer costs, DTN annual fee	\$10	WELD 212	Welding gas, supplies	\$80
PLSC 235L	Lab fees	\$20	WELD 299	Special topics	TBD
PRMT 101	Background check/tracker/safety & security certifications	\$95	<b>Program Fees (per semester)</b>		
PRMT 216L	IV compounding supplies	\$100	The following departments carry a program fee each semester that helps offset instructional costs specific to that academic discipline. These fees are also included in the Additional Costs by Program amounts. Students that are in pre-programs will not be charged program fees until fully admitted to the program.		
PRMT 217	Software/labeling system/presentation kit	\$105	Agriculture		\$150
PRMT 217L	Background re-check/lab supplies/ safety & security certification-renewals	\$150	ASN Nursing (RN)		\$250
PRMT 221L	Compounding supplies	\$75	AAS Nursing (RN)		\$250
PST 101	Lab supplies	\$50	Auto Body Refinishing and Repair Technology		\$200
PST 102	Lab supplies	\$50	Automotive Technology		\$200
PST 103	Lab supplies	\$50	Building Construction Technology		\$50
PST 104	Lab supplies	\$50	Culinary Arts		\$250
PST 122	Lab supplies	\$20	Dental Assisting		\$250
PST 201	Lab supplies	\$60	Dental Hygiene		\$250
PST 202	Lab supplies	\$50	Diesel Technology		\$150
PST 203	EETC Certification Tests	\$130	Electrical Technology		\$200
RAMT 101	Supplies & equipment	\$50	Health Information		\$50
			Land Surveying and Civil Engineering Technology		\$150
			Occupational Therapy Assistant		\$100
			Pharmacy Technician		\$150
			Powersports Technology		\$100

Practical Nursing (LPN)	\$250
Precision Machining Technology	\$250
Robotics, Automation and Mechatronics Technology	\$150
Welding Technology	\$200

## Residency for Tuition Purposes

1. NDCC Section 15-10-19.1 governs determination of residency for tuition purposes. Pursuant to section 15-10-19.1, a resident student for tuition purposes means:

- A person whose custodial parent, guardian, or parents have been a legal resident of North Dakota for 12 months immediately prior to the beginning of the academic term;
- A person 18 years of age or older who has been a legal resident of North Dakota for 12 months immediately prior to the beginning of the academic term;
- A person who graduated from a North Dakota high school;
- A full-time active duty member of the armed forces or a member of a North Dakota national guard unit;
- A spouse or a dependent of a full-time active duty member of the armed forces or a member of a North Dakota national guard unit;
- A spouse or dependent of an employee of any institution of higher education in the state;
- The spouse of any person who is a resident for tuition purposes;
- Any other person who was a legal resident of this state for at least three consecutive years within six years prior to the beginning of the academic term; or
- A child, spouse, widow or widower of a veteran as defined in NDCC section 37-01-40 who was killed in action or died from wounds or other service-connected causes, was totally disabled as a result of service-connected cause, died from service-connected disabilities, was a prisoner of war or was declared missing in action.

2. Definitions.

- "Dependent" means only a person claimed as a dependent on the most recent federal tax return.
- "Member of the armed forces" means only full-time active duty members of the armed forces, and not national guard or reserve members.
- "Spouse" means both parties to a marriage recognized by the state of North Dakota including those subject to an order of legal separation, but not divorced persons.

3. NDCC Section 54-01-26 governs determination of legal residency. Legal residence must be based on an actual physical residence in North Dakota plus an intent to consider this state as a home and legal residence for a substantial period of time. Physical residence in the state for only the special or temporary purpose of attending an institution of higher education, without any assumption of the general responsibilities of legal residency, does not qualify one for legal residency. Nevertheless, a student attending a North Dakota institution of higher education is not precluded from proving legal residency simply because that is the student's primary or exclusive pursuit for a period of time. It is not necessary to show gainful employment or an off-campus residency to prove legal residency, although they may be helpful; what is more important is a showing that some of the significant responsibilities or rights of legal residency enumerated in subsection 4 have been assumed or exercised, or even more importantly, that they have not been countered during a period of legal residency claimed in North Dakota by express acts indicating a legal residency in another state. Generally, because making false statements in a residency application is a crime, an applicant's signature is sufficient guarantee that information in the application is accurate. However, university system employees may, at their discretion, require additional documentation.

4. Legal residence in the State of North Dakota includes, but is not necessarily limited to the following responsibilities and rights:

- To vote in general or special elections in the State after 30 days of residence in the precinct (and assuming U.S. citizenship). See NDCC Section 16-01-03;

- To obtain a North Dakota driver's license before operating any motor vehicle in this State after more than 60 days of residency. See NDCC Section 39-06-02;
  - To obtain a North Dakota license for any motor vehicle owned or operated after beginning residency in this State. See NDCC Section 39-04-18;
  - To file a North Dakota resident's income tax return with the State Tax Department reporting any income derived from within this State. See NDCC Sections 57-38-01-(10) and 57-38-31;
  - To obtain a North Dakota resident game or fishing license after 6 months of residency in the State. See NDCC Sections 20.1-01-02(4) and 20.1-03-05.
5. Given the academic tradition of recess or vacation periods for holidays, between terms and during the summer, a student's visits to other states during these periods are not indicative of a lack of legal residency in North Dakota; in fact, NDCC Section 54-01-26 expressly allows absences for "special or temporary purposes." A student's return from North Dakota to a former state of residence for a period of several months (such as an entire summer), however, when combined with the abandonment of a place of residency in this State indicates abandonment of legal residency in North Dakota. Proof of either the retention of a place of residence in North Dakota during the absence (e.g., by rent receipts), or of a special or temporary purpose for the absence, is required in the event of such a prolonged absence. For example, participation in an internship experience or an exchange program in a state of origin that was an acceptable part of the student's academic program at a North Dakota institution of higher education is considered a special or temporary purpose.

6. International Students.

- To qualify as a North Dakota resident, international students who are not refugees must have an Alien Registration Receipt Card (Green Card) proving permanent residency or immigrant status and must meet all other North Dakota residency requirements for tuition purposes.
- Refugees holding I-94 visas bearing endorsement by the Immigration and Naturalization Service and showing they have been paroled indefinitely, or have been granted indefinite voluntary departure or conditional entry, shall be treated as residents of the United States when applying for North Dakota residency for tuition purposes. In all other respects they must meet the requirements of NDCC Section 15-10-19.1. Time spent in North Dakota prior to being granted I-94 status shall not be counted towards the one year requirement for residency status for in state tuition.

## Non-Resident Students Seeking Resident Status

Non-resident students seeking to declare residence for tuition fee purposes must complete the Residency form 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 and records. 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.mheso.state.mn.us](http://www.mheso.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: Reciprocity applications are not required of students who have graduated from Minnesota high schools within the same calendar year that they are entering NDSCS.

## Payment Due Dates

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

The student's current balance is available 24 hours a day by going to [www.NDSCS.edu/CampusConnection](http://www.NDSCS.edu/CampusConnection). All billing notifications are sent electronically to the student's NDSCS email address. 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 prior to each semester's due date.

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

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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 the Paying for College section at [www.NDSCS.edu](http://www.NDSCS.edu).

## Refunding of Tuition and Fees (per SBHE Policy 830.2-Refund Policy)

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### Financial Impacts of Dropping or Withdrawing

NDSCS is required to follow the ND State Board of Higher Education Policy & 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](http://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).

**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.

# FINANCIAL AID

## 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 1 to meet the priority deadline date of April 15. Students are encouraged to complete the FAFSA online at [www.FAFSA.ed.gov](http://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](http://www.NDSCS.edu).

## 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. Therefore, the student may end up with an amount due to the college. 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.

## Gainful Employment

Gainful employment provides students and consumers with the information they need to make good education choices. Providing an eligible program of training to prepare students for gainful employment in a recognized occupation is one of the criteria an institution must meet to qualify to award federal financial aid in postsecondary vocational education.

Please visit [www.NDSCS.edu/Gainful-Employment](http://www.NDSCS.edu/Gainful-Employment) to view our gainful employment data.

# 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

A unit of credit is three hours of student instruction and learning, which may be represented by:

- one class hour per week for lecture, discussion, seminar, or workshop, or a combination thereof, and two hours of preparation outside of class;
- two class hours per week for laboratory, shop, or field experience, or a combination thereof, and one hour of preparation outside of class; or
- three class hours per week for laboratory, shop, internship, supervised occupational work experience, or other comparable field experience, or a combination thereof.

## 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 director of admissions and records.

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](http://www.ndscs.edu) for further explanation regarding the transfer of credits to NDSCS. Search for transfer to NDSCS and click on the NDSCS TES button.

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

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

## Credit by articulation agreement

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

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

## 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 director of admissions and records 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. Students may not challenge a course in which they are actively enrolled or have completed previously. 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.

Application forms and the complete Challenge Exam Policy and Procedure are available by contacting one of the NDSCS academic counselors.

## 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

The ASC courses are designed to help students develop skills in reading, writing and mathematics. Students are placed in these **required** courses based on ACT, ACCUPLACER, or other approved placement scores.

### 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](http://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](mailto: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:

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

- The grade of "Incomplete" must be removed no later than the end of the mid-term examination week in the next college term, excluding the summer sessions. If the "Incomplete" is not removed by this time, it will automatically be changed to "F" or "U" by the Enrollment Services office.
- The grade of "Incomplete" is given at the instructor's discretion and is dependent on missing work and attendance.
- The summer session is not considered in determining the time allowed for make-up of "I" grades.
- It is the student's responsibility to see that "I" grades are made up.
- The term "Withdrawn" 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 the National Student Clearinghouse which can be found at [www.getmytranscript.com](http://www.getmytranscript.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 drop a course for the period of enrollment 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:

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

### Academic Warning

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

### Academic Probation

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

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

Any student who is on academic probation and transfers from one department or division 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. Suspended students are not eligible to attend summer school.

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

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.

Note: All students placed on academic warning, academic probation, continued on probation or reinstated on suspension will be contacted by a Student Success staff member.

### Academic Reinstatement Process

A student, who is notified they are 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. Appeals received after the required submission date will only be considered if significant extenuating circumstances exist. 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, Haverly Hall, Room 101, by calling 701-671-2521, or online at [www.NDSCS.edu/current-students/update-student-information/academic-reinstatement](http://www.NDSCS.edu/current-students/update-student-information/academic-reinstatement).

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 academic 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 Guide to 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](http://www.NDSCS.edu/AcademicStanding).

## 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 Guide to Student Rights and Responsibilities* or department policies. For more information see Attendance Policy in the Academic and College Policies and Procedures section of the *NDSCS Catalog*.

## Withdrawing from College

A student who desires to withdraw from college must originate a request and obtain a withdrawal slip from the division academic counselor before the last day to withdraw from college. Dates are available in the Academic Calendar online or in the Student Planner. Students planning to withdraw from college should contact the Financial Aid office.

## 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](http://www.ndscs.edu/Graduation).
3. The award will be sent to the graduate.
4. Students are requested to participate in graduation exercises in order to have their degrees, diplomas or certificates conferred.

## Graduation Requirements

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

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

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

1. Students who are enrolled continuously will follow the graduation requirements in effect at the time of their initial enrollment.
2. Students who are not enrolled as a continuous student will follow the graduation requirements in effect during the academic year they reinitiate enrollment.

3. At least 16 of the final 24 credits of the curriculum must be taken through NDSCS.

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

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

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

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

The requirements for graduation are as follows:

### Associate in Arts Degree

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

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

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

### Associate in Science Degree

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

1. The student must have completed a curriculum with a minimum of 64 credits, or more, if specified in the specific curriculum, with a minimum cumulative GPA of 2.0 (C) or better.
2. The student must have completed the following minimum general education requirements:
  - a) six credits in ND:ENGL
  - b) three credits in ND:COMM
  - c) six credits in ND:HUM or ND:HIST (must have courses from two prefixes)
  - d) 13 credits in ND:MATH, ND:LABSC, ND:COMPSC or ND:SCI
    - i. All students must complete one lab science (ND:LABSC), one mathematics course (ND:MATH) and one ND:COMPSC
  - e) eight credits in ND:SS (must have courses from two prefixes)
  - f) two credits in wellness

- g) remaining credits will emphasize business, science and/or mathematics transfer courses
- h) attendance at designated campus and/or community activities that support the general education learning outcomes
- i) GERTA requirements, 36 credits
- 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 of one year or less. If a program is two academic semesters in length, it cannot exceed 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 16 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

Total General Education requirements, three or five credits as indicated above.

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 15 credits or less, 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 NDCSCS 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.

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

### Associate in Applied Science Degree

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

1. The student must have completed a curriculum with a minimum of 64 credits, or more, if specified in the specific curriculum, with a minimum cumulative 2.0 (C) GPA or higher.
2. The student must complete the following minimum general education requirements:
  - a) six credits in English and/or speech 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 upon recommendation of the faculty upon satisfactory completion of the following requirements:

1. The student must have completed the specified curriculum with a minimum of 72 credits, with a minimum cumulative grade-point average of 2.0 (C) or better, and completed all required program courses with a "C" or higher grade.
2. The student must have completed the following minimum general education requirements:
  - a) six credits in ND:ENGL
  - b) three credits in ND:COMM
  - c) six credits in ND:HUM or ND:HIST (must have courses from two prefixes)
  - d) 13 credits in ND:MATH, ND:LABSC, ND:COMPSC or ND:SCI. All students must complete one lab science (ND:LABSC), one mathematics course (ND:MATH) and one ND:COMPSC
  - e) eight credits in ND:SS (must have courses from two prefixes)
  - f) two credits in wellness
  - g) remaining credits will emphasize nursing
  - h) attendance at designated campus and/or community activities that support the general education learning outcomes
  - i) GERTA requirements, 43 credits

### Diploma

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

1. The student must have completed a curriculum with a minimum of 37 credits, or more if specified in the specific curriculum, with a minimum cumulative GPA of 2.0 (C) or higher.
2. The student must have completed the following minimum general education requirements:
  - a) three credits in English
  - b) three credits in mathematics and/or science
  - c) four credits in social and behavioral sciences, humanities, history and/or computer

## Philosophy

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

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

## Objectives

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

## Student Learning Outcomes

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

## General Education Transfer Agreement (GERTA)

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

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

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

## NDSCS GERTA Requirements

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

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

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

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

## Liberal Arts Transfer Program Purposes

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

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

The purposes of the Liberal Arts transfer curriculum plans are:

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

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



# GENERAL EDUCATION AND GERTA COURSE MATRIX

COURSE		CREDITS	GERTA (NDUS)	DEGREE	
				AA/AS	AAS/Dipl./Cert.
<b>ENGLISH</b>					
ENGL 105	Technical Communications	3			X
ENGL 110	College Composition I	3	ND:ENGL	X	X
ENGL 120	College Composition II	3	ND:ENGL	X	X
ENGL 125	Introduction to Professional Writing	3	ND:ENGL	X	X
<b>COMMUNICATION</b>					
COMM 110	Fundamentals of Public Speaking	3	ND:COMM	X	X
COMM 212	Interpersonal Communication	3		X	X
<b>COMPUTER TECHNOLOGY</b>					
CIS 101	Computer Literacy	2	ND:COMPSC	X	X
CSCI 101	Introduction to Computers	3	ND:COMPSC	X	X
CSCI 116	Business Use of Computers	3-4	ND:COMPSC	X	X
CSCI 122	Visual Basic	3	ND:COMPSC	X	X
CSCI 125	Beginning COBOL (II)	3	ND:COMPSC	X	X
CSCI 160	Computer Science I (Java)	4	ND:COMPSC	X	X
CSCI 161	Computer Science II (Java)	4	ND:COMPSC	X	X
<b>HISTORY</b>					
HIST 101	Western Civilization I	3	ND:HIST	X	X
HIST 102	Western Civilization II	3	ND:HIST	X	X
HIST 103	United States History to 1877	3	ND:HIST	X	X
HIST 104	United States History Since 1877	3	ND:HIST	X	X
HIST 207	United States and Current World Affairs	3	ND:HIST	X	X
HIST 220	North Dakota History	3	ND:HIST	X	X
HIST 260	Women in America	3	ND:HIST	X	X
<b>HUMANITIES</b>					
ENGL 207	Lang. Studies: Convers. English & Amer. Studies	3		X	X
ENGL 211	Introduction to Creative Writing	3	ND:HUM	X	X
ENGL 220	Introduction to Literature	3	ND:HUM	X	X
ENGL 232	Mythology	2-3	ND:HUM	X	X
ENGL 240	World Literature Masterpieces	3	ND:HUM	X	X
HUM 211	Integrated Cultural Excursion: Regional and Cultural Studies	1-3	ND:HUM	X	X
HUM 250	Norwegian Cultural Studies	3	ND:HUM	X	
MUSC 100	Music Appreciation	3	ND:HUM	X	X
MUSC 101	Fundamentals of Music	3	ND:HUM	X	X
MUSC 207	History of Rock and Roll Music	3	ND:HUM	X	X
PHIL 210	Ethics	3	ND:HUM	X	X
PHIL 213	Societal and Ethical Implications of Technology	3			X
RELS 203	World Religions	3	ND:HUM	X	X
SPAN 101	First Year Spanish I	4	ND:HUM	X	X
SPAN 102	First Year Spanish II	4	ND:HUM	X	X
<b>MATHEMATICS</b>					
BOTE 108	Business Mathematics	3			X
MATH 102	Intermediate Algebra	3			X
MATH 103	College Algebra	3	ND:MATH	X	X
MATH 104	Finite Mathematics	3	ND:MATH	X	X

COURSE		CREDITS	GERTA (NDUS)	DEGREE	
				AA/AS	AAS/Dipl./Cert.
MATH 105	Trigonometry	2	ND:MATH	X	X
MATH 107	Pre-Calculus	4	ND:MATH	X	X
MATH 120	Basic Mathematics I	2			X
MATH 123	Basic Mathematics II	2			X
MATH 125	Basic Mathematics III	2			X
MATH 130	Technical Mathematics	2			X
MATH 132	Technical Algebra I	2			X
MATH 134	Technical Algebra II	2			X
MATH 135	Applied Mathematics	2			X
MATH 136	Technical Trigonometry	2			X
MATH 137	Applied Algebra	3			X
MATH 138	Applied Trigonometry	3			X
MATH 146	Applied Calculus I	4	ND:MATH	X	X
MATH 147	Applied Calculus II	4	ND:MATH	X	X
MATH 165	Calculus I	4	ND:MATH	X	X
MATH 166	Calculus II	4	ND:MATH	X	X
MATH 210	Elementary Statistics	3	ND:MATH	X	X
MATH 227	Applied Linear Algebra	3		X	X
MATH 265	Calculus III	4	ND:MATH	X	X
MATH 266	Introduction to Differential Equations	3	ND:MATH	X	X
<b>SCIENCE</b>					
BIOL 111/L	Concepts of Biology/Lab	3/1	ND:LABSC	X	X
BIOL 115/L	Human Structure and Function/Lab	3/1	ND:LABSC	X	X
BIOL 124/L	Environmental Science/Lab	3/1	ND:LABSC	X	X
BIOL 150/L	General Biology I/Lab	3/1	ND:LABSC	X	X
BIOL 151/L	General Biology II/Lab	3/1	ND:LABSC	X	X
BIOL 170/L	General Zoology/Lab	3/1	ND:LABSC	X	X
BIOL 213	General Pathology	3		X	X
BIOL 220/L	Anatomy and Physiology I/Lab	3/1	ND:LABSC	X	X
BIOL 221/L	Anatomy and Physiology II/Lab	3/1	ND:LABSC	X	X
CHEM 115/L	Introductory Chemistry/Lab	3/1	ND:LABSC	X	X
CHEM 116 /L	Introduction to Organic and Biochemistry	3/1	ND:LABSC	X	X
CHEM 121/L	General Chemistry I/Lab	4/1	ND:LABSC	X	X
CHEM 122/L	General Chemistry II/Lab	4/1	ND:LABSC	X	X
CHEM 241/L	Organic Chemistry I/Lab	4/1	ND:LABSC	X	X
CHEM 242/L	Organic Chemistry II/Lab	4/1	ND:LABSC	X	X
CHEM 260	Elements of Biochemistry	4		X	X
MICR 202/L	Introductory Microbiology/Lab	3/1	ND:LABSC	X	X
MICR 204	Basic Immunology	3		X	X
NANO 101	Fundamentals of Nanoscience I	3	ND:SCI	X	X
NANO 102	Fundamentals of Nanoscience II	3	ND:SCI	X	X
PHYS 100	Concepts of Physics	3	ND:SCI	X	X
PHYS 110	Introductory Astronomy	3	ND:SCI	X	X
PHYS 120/L	Fundamentals of Physics/Lab	3/1	ND:LABSC	X	X
PHYS 211/L	College Physics I/Lab	3/1	ND:LABSC	X	X
PHYS 212/L	College Physics II/Lab	3/1	ND:LABSC	X	X
PHYS 251/L	University Physics I/Lab	4/1	ND:LABSC	X	X
PHYS 252/L	University Physics II/Lab	4/1	ND:LABSC	X	X

COURSE		CREDITS	GERTA (NDUS)	DEGREE	
				AA/AS	AAS/Dipl./Cert.
PLSC 110	World Food Crops	3	ND:SCI	X	X
SOIL 210	Introduction to Soil Science	3	ND:SCI	X	X
<b>SOCIAL AND BEHAVIORAL SCIENCES</b>					
CJ 160	The Legal System	4		X	X
CJ 201	Introduction to Criminal Justice	3	ND:SS	X	X
CJ 232	Administration of Justice	3		X	X
COMM 216	Intercultural Communication	3	ND:SS	X	X
ECON 105	Elements of Economics	3	ND:SS	X	X
ECON 201	Principles of Microeconomics	3	ND:SS	X	X
ECON 202	Principles of Macroeconomics	3	ND:SS	X	X
POLS 103	Global Politics in a Multicultural World	3	ND:SS	X	X
POLS 115	American Government	3	ND:SS	X	X
POLS 116	State and Local Government	3	ND:SS	X	X
POLS 236	The American Constitution – Civil Liberties	3	ND:SS	X	X
PSYC 100	Human Relations in Organizations	2	ND:SS	X	X
PSYC 111	Introduction to Psychology	3	ND:SS	X	X
PSYC 210	Child Development	3	ND:SS	X	X
PSYC 230	Educational Psychology	3	ND:SS	X	X
PSYC 240	Industrial/Organizational Psychology	3	ND:SS	X	X
PSYC 250	Developmental Psychology	3	ND:SS	X	X
PSYC 270	Abnormal Psychology	3	ND:SS	X	X
SOC 110	Introduction to Sociology	3	ND:SS	X	X
SOC 115	Social Problems	3	ND:SS	X	X
SOC 220	Family	3	ND:SS	X	X
SOC 221	Minority Relations	3	ND:SS	X	X
SWK 255	Social Work in a Modern Society	3	ND:SS	X	X
SWK 256	Development of Social Welfare	3	ND:SS	X	X
<b>WELLNESS</b>					
HPER 100	Concepts of Fitness and Wellness	2		X	X
HPER 101	Activity: Intro Level	1		X	X
HPER 102	Activity: Intermediate Level	1		X	X
HPER 110	Sports Officiating	2		X	X
HPER 150/250	Athletic Participation	1		X	X
HPER 200	Introduction to Parks and Recreation	2		X	X
HPER 201	Intro to Coaching	2		X	X
HPER 207	Prevention and Care of Injuries	3		X	X
HPER 208	Introduction to Physical Education	2		X	X
HPER 210	First Aid and CPR (Professional/Community)	2			X*
HPER 217	Personal and Community Health	3		X	X
MUSC 115	Concert Band	1		X	X
MUSC 117	Concert Choir	1		X	X
MUSC 138	Jazz Band	1		X	X
MUSC 157	Pop-Swing Choir	1		X	X
NUTR 240	Principles of Nutrition (and Diet Therapy)	3		X	X
NUTR 255	Eating Disorders	1		X	X
THEA 201	Theatre Practicum	1	ND:FA	X	X
THEA 270	Stagecraft	1	ND:FA	X	X

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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 Guide to Student Rights and Responsibilities* 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, faculty, staff and administrators. Please refer to it for complete copies of these policies and procedures. It also includes procedures for addressing student sanctions, judicial actions and student complaint, appeal and grievance issues.

The *NDSCS Guide to Student Rights and Responsibilities* can be found at [www.NDSCS.edu/Student-Rights](http://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 identified rights within the Code of Student 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 Guide to Student Rights and Responsibilities*, as well as those outline 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 Guide to Student Rights and Responsibilities*.

## 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 Guide to Student Rights and Responsibilities* for a complete description of Code of Conduct resolution process.

## Student Alcohol/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. Students may face campus charges for alcohol related incidents occurring off campus. Such incidents include, but are not limited to: minor in possession/consumption/under the influence of alcohol, driving under the influence of alcohol, public consumption of alcohol, and providing alcohol to a minor. Possession, consumption, being under the influence, or transport of illegal drugs or any other controlled substances is prohibited except pursuant to a physician's, dentist's or other authorized medical personnel's prescriptions. 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 as well.

Students may also be subject to on campus sanctions for off campus alcohol/drug related behavior.

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 Guide to Student Rights and Responsibilities* for information related to sanctions. More information can be found at [www.NDSCS.edu/Alcohol-Drug/Policies](http://www.NDSCS.edu/Alcohol-Drug/Policies).

## Tobacco Free Campus Policy

The use of tobacco is prohibited on campus property at all times. This prohibition includes indoors, outdoors, inside college vehicles and/or personal vehicles while on campus property. 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 [NDSCS.edu/Tobacco](http://NDSCS.edu/Tobacco) and the *NDSCS Guide to Student Rights and Responsibilities* for sanctions.

## Weapons/Firearms/Explosives

Possession, display or storage of weapons in College owned buildings is prohibited. All firearms must be registered with Campus Police immediately upon arrival to NDSCS. Unauthorized and/or illegal possession, display or use of firearms, explosives or other weapons is prohibited.

- 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, daggers, knives (blade greater than four inches in length), sabers, swords, and bows and arrows.
- 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. 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.

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.

## Diversity Statement and Policy

The campus community consists of students, faculty, staff and administrators. It is our belief that all community members have a responsibility, individually and collectively, to create a positive living environment that is respectful, supportive and inclusive of all people. All community members must share in the commitment to provide equal opportunity for all individuals regardless of, and including but not limited to 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.

Please see the *NDSCS Guide to Student Rights and Responsibilities* for a complete copy of the Diversity Statement and Policy.

## Sexual Misconduct and Title IX Compliance Policy

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 educational 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](http://www.NDSCS.edu/Title9).

## 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 Policy for Technologies and Services Division

Attendance is critical to success in college, just as it is to future success at work. NDSCS wants students to succeed, and past experience has dictated that chances of success are best when a student makes every effort to attend class.

Attendance is especially critical in technology 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, the Technologies and Services Division has instituted a division attendance policy that applies to all courses offered by the division. 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:

- a) Serious illness verified by a doctor's statement or the campus nurse;
- b) Participation in school-sponsored activities which are documented on official college field trip forms and/or notifications;
- c) Mandatory military duty (verified by the campus Veteran Certifying Official); or
- d) Verified family emergencies (verified by the division academic counselor).

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

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

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](http://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](mailto: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 Guide to Student Rights and Responsibilities* 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 complainant is not satisfied, or is unwilling to address the issue at the individual or departmental level, the complainant 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 complainant 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 complainant 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 complainant is not satisfied with the resolution or decision, a written appeal may be submitted to the vice president for academic 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 academic 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 academic 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 academic affairs or his/her designee shall inform the complainant and Student Academic Grievance Committee of the specific time and place of the meeting. The committee shall review the written appeal provided by the complainant 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 academic 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 *NDSCS Student Guide to 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 Guide to Student Rights and Responsibilities* 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

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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](http://www.ndus.edu/makers/procedures/ndus) for a complete copy of this information.

# 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-Fargo\* is where businesses, college and high school students get ahead. Our customized and open-enrollment training programs make employees more efficient, effective and productive. NDSCS students can earn certificates and associate's degrees in multiple disciplines, from practical nursing to welding.

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)
  - Business Pro Curriculum Options
    - Entrepreneurship (certificate)
    - Finance (certificate)
    - Management/Supervision (certificate)
    - Sales (certificate)
  - Marketing, Sales and Hospitality Services (A.A.S. degree)
- Emergency Medical Services (EMS) (certificate, A.A.S. degree)
  - Emergency Medical Technician (EMT) (certificate)\*\*
  - Advanced Emergency Medical Technician (AEMT) (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)
  - Web Design (certificate)
  - Web Developer (A.A.S. degree)
- Liberal Arts (A.A. degree)
  - Business Transfer (A.A. degree)
  - Criminal Justice - Transfer (A.A. degree)
  - Education 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 NDSU may be invited to participate in the Pathway Program. This program is structured so students can enroll in academic readiness courses and a limited number of general education classes at NDSU and NDSCS-Fargo, located adjacent to the NDSU campus. Pathway students have access to all student services and activities at NDSU. Please contact the Admissions office at NDSU for additional information.

\*NDSCS-Fargo is located at 1305 19th Avenue North in Fargo, just north of the FargoDome and one mile east of Hector International Airport and Interstate 29. This classroom facility includes a test center, computer labs, science labs and general classrooms. NDSCS-Fargo does not provide the option for housing or food contracts. The NDSCS-Fargo telephone number is 701-231-6900. More information can be found at [www.NDSCS.edu](http://www.NDSCS.edu).

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

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

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

## 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)\*\*
  - Advanced Emergency Medical Technician (AEMT) (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)
  - 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](http://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](http://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](http://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

Rates for online courses are slightly different than tuition and fees assessed on campus. NDSCS charges a rate of \$202.33 per credit hour (for the 2018-2019 academic year). This online rate applies to both in-state and out-of-state students. Books and supplies, which vary by course, are not included in the per-credit rate. Additional course and program fees may also apply.

## 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](http://www.NDSCSBookstore.com).



## Online Attendance

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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 attempted as soon as each semester begins; however, if there is no response from the student and inactivity continues, a drop will be enacted. See the complete Attendance Policy in the Policies and Procedures section of the *NDSCS Catalog*.

## State Authorization for Out-of-State Students

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

## Early Entry (Dual Credit)

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

## Institutional Registration in Other States

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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

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The Division for Workforce Affairs includes the departments of ApprenticeshipND and TrainND. 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](http://www.NDSCS.edu)

## ApprenticeshipND Program

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The primary purpose of the ApprenticeshipND program is to offer related study courses by the correspondence method to the “isolated” indentured apprentices and the “on-the-job” trainees who are not able to attend classroom training sessions because: travel distance is too great; no classes for their trade are offered at a time when they could attend; or no classes are available. Contact Workforce Affairs for more information.

## NDSCS-Fargo

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NDSCS-Fargo has multiple roles regarding credit and non-credit offerings. Their role as related to non-credit is primarily dedicated to existing employees, helping businesses prepare employees for today’s high paced technological workplace. Through state-of-the-art facilities, experienced trainers and high quality training materials, NDSCS-Fargo is committed to helping businesses achieve their training goals. Contact Workforce Affairs for more information.

NDSCS-Fargo  
1305 19th Avenue North  
Fargo, ND 58102  
701-231-6915

\* Also linked from [www.NDSCS.edu](http://www.NDSCS.edu) and [www.trainND.com](http://www.trainND.com)

## TrainND Southeast

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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 regional offices in Fargo, N.D., at NDSCS-Fargo and Oakes. Workforce Affairs can be reached through the NDSCS website, [www.NDSCS.edu/Training](http://www.NDSCS.edu/Training) 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.

# 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 NDSCS 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](http://www.NDSCS.edu/Library), by calling the Customer Service Desk at 1-800-342-4325, Ext. 3-2618 or directly at 701-671-2618, or by emailing [NDSCS.library@ndscs.edu](mailto:NDSCS.library@ndscs.edu). 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
- Administration of Career Ready Internship program

### 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](http://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](http://www.NDSCS.edu/Tutoring)
- Tutoring requests are welcome, but not guaranteed and are based on student need, ability to find qualified tutors and scheduling considerations.

#### Wahpeton

Tutoring is located in the Student Success Center in Old Main 130. Requests for tutors in areas not currently offered, should contact the student support coordinator at 701-671-2278. Students wishing to gain employment as a tutor should contact the student support coordinator.

#### Fargo

Tutoring is located in Room 147A. Requests for tutors in areas not currently offered should contact the student support coordinator at 701-671-2278. Students wishing to gain employment as a tutor should contact the tutoring coordinator.

#### Online

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

TutorND offers FREE online tutoring and academic resources. NDSCS students can get help from a tutor in major subjects like math, science, social studies, English or even assistance with their job search. This service can be accessed online at [www.tutornd.com](http://www.tutornd.com).

## Veterans Assistance

- Complete VA Benefit certification process
- Provide assistance with VA Benefit application process
- Provide tuition assistance information and assistance with application process

## Student Activities, Organizations and Volunteer Opportunities

Students are encouraged to participate in campus activities outside the classroom. Campus activities include movies, dances, seasonal activities, plays, educational speakers, concerts, organization events, department clubs and various other special events. Such participation develops personal qualities in a way that cannot be accomplished in the classroom. Activities are of such a variety that every student should be able to select an activity or two that has appeal. A list of clubs and organizations can be found at [www.NDSCS.edu/Clubs](http://www.NDSCS.edu/Clubs). To create a new club, contact Student Senate for a petition to organize.

### Athletics

- **Intercollegiate Athletics** – Intercollegiate athletic competition for women includes volleyball, softball and basketball. Intercollegiate competition for men includes football and basketball. 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

NDSCS sponsors 30+ student run clubs and organizations. If you're serious about getting ahead in life, getting involved is a great place to begin. Please see [www.NDSCS.edu/Clubs](http://www.NDSCS.edu/Clubs) for a more 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. To create a new club, contact Student Senate for a petition to organize.
- **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 [www.Facebook.com/NDSCSStudentLife](http://www.Facebook.com/NDSCSStudentLife). For more information about the Media Squad, please 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 with 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 alumni during Homecoming Week
- Assist with employers during the Career Fair
- Work the DREAMS Auction

- **Student Senate** – The Student Senate at NDSCS represents and serves the student body to enhance students' college experience through the empowerment of all students. The Senate's responsibilities include chartering 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:

- Meet weekly during the academic year to discuss college updates and weigh in on important decisions regarding students and the institution
- Participate and serve 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
- Plan Agawasia Day
- Share new initiatives and ideas with the Senate
- Participate in the North Dakota Student Association (NDSA) once a month throughout North Dakota

- **Resident Assistants** – Resident Assistants (RAs) are students 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 providing educational and recreational programming, information, guidance, friendship and support.

Resident Assistant responsibilities:

- Support fellow students by assisting students with questions
- Developing community through a variety of methods
- Serving as residential hall on-duty staff
- Planning 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:

- 11 day commitment in August
- 4 days of training
- Welcome Week events/activities (Saturday-Friday)

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

## Fine Arts

- **Concert Band** – Students interested in instrumental music may join the Concert Band and audition for the Jazz Band. From Concert Band, they may participate in pep band, marching band and various ensembles. Students may join during either the fall or spring semesters. NDSCS has many school instruments that can be borrowed. Credit is awarded.
- **Concert Choir** – Students interested in vocal music may join the Concert Choir and audition for the Wildcat Singers. Various vocal ensembles perform for school functions throughout the year. Students may join during either semester. Credit is awarded.
- **Drama** – Students wishing to participate in drama may join a drama class with a new performance each semester. Credit is awarded.

## 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, visit the "Volunteer Opportunities" page under the Current Students section on the website.

## 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 on the campus. 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 Beckgym, weight room and wellness center, classrooms, swimming pool, two racquetball courts and an indoor eight-lane track.

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

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

## On-Campus Living Policy

All first-year students, including students who have transferred in, who have completed fewer than 24 college credits are REQUIRED to live on campus, unless the student meets one of the following:

- 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.

A request for exemption from the on-campus living policy must be completed and submitted to the Residential Life department before August 1 for the upcoming fall semester and December 1 for the upcoming spring semester. The Request for Exemption form can be found at [www.NDSCS.edu/Residential-life](http://www.NDSCS.edu/Residential-life).

## Campus Living Facilities

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

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

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

## Campus Community Facilities

### Hektner Student Center

The Hektner Student Center is the community center for NDSCS, hosting the major portion of social activities and numerous recreational activities, in addition to student government and organizations. The facility includes the Student Life/Customer Service Desk, reception and lounge areas, coffee shop and café, cafeteria, convenience store, a computer lab, TV lounge, meeting rooms, a game room including pool tables, The Alley (a student sponsored venue), NDSCS Campus Police, the Bookstore, a mailbox area and vending machines.

### Bookstore and Mail Center

The NDSCS Bookstore and Mail Center are located in the Hektner Student Center on the Wahpeton campus. The Bookstore provides new and used textbooks for purchase, rental, e-books, and are subject to availability; in addition, a textbook buyback program is offered at the end of each term. Through vendor partnerships, the Bookstore sells program tools at an educational discounted price. In addition, the Bookstore provides required course and school supplies, such as tools and equipment, to support student academic success. A convenience store, apparel, gifts, and more are available for students, parents, alumni, visitors, and the NDSCS community. The Bookstore operates a temporary location at NDSCS-Fargo at the beginning of each term, for textbook buyback, and as required to meet student needs. Visit [www.NDSCSBookstore.com](http://www.NDSCSBookstore.com) for ordering of textbooks, apparel, gifts, and additional store information.

Mail Center services include issuance of mailbox keys, stamps, stamped envelopes, USPS, and FedEx shipping services. Packages may be picked up during normal mail center hours or at the Bookstore's customer service counter. All full-time students living on the Wahpeton campus are required to have a campus post office box. This box may be used to receive personal mail and packages as well as college notices. A post office box is assigned when a student enrolls.

### Customer Service Desk

The Customer Service Desk serves as the campus switchboard and information center. Students can seek services such as scanning and faxing. They can check here for lost and found items. The Customer Service Desk also serves as a resource for general information questions for students.

## Dining Services –

### Flickertail Dining Room and Wild Grounds Café

Located in the Hektner Student Center on the Wahpeton campus, Dining Services operates two locations: the Flickertail Dining Room (contract dining plans) and the Wild Grounds Café (a quick service-restaurant and coffee shop).

Dining Services provides a wide variety of food products and services at an economical cost. The facilities are completely self-funded with the income remaining within NDSCS. Additional information may be found at [www.NDSCS.edu/Dining](http://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](mailto: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.

### Student Life

The Student Life office and the Customer Service Desk are located in the Hektner Student Center and serve as the organizational hub of student clubs, organizations and activities. Contact Student Life to learn more about:

- Student Senate
- Campus Activities
- Media Squad
- Text Alerts

### 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 the Main Reception Desk 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](http://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

- Child Care Aware of North Dakota: [www.ndchildcare.org](http://www.ndchildcare.org)
- Richland County Social Services - will provide a list of licensed providers in Richland County including phone numbers and addresses
- Wilkin County Social Services - will provide a list of licensed providers in Wilkin County including phone numbers and addresses
- Wahpeton Daily News - classifieds

# ACADEMIC PROGRAM MATRIX

Academic Programs	AA	AS	AAS	ASN	Diploma	Certificate
Agriculture			X			
Ag Business			*			
Agronomy			*			
Animal Science			*			
Farm Management			*			
Precision Agriculture			*			
Ranch Management			*			
Architectural Drafting and Estimating Technology			X			
Auto Body Repair and Refinishing Technology			X		X	X
Automotive Technology			X		X	X
Automotive Alignment and Brake Technician						*
Automotive Engine Technician						*
Automotive Transmission and Driveline Technician						*
Automotive and Diesel Master Technician (third-year option)			X			
Building Construction Technology			X			
Business Management			X			X
Administration and Finance			*			
Business Technology Management (third-year option)			*			
Marketing, Sales and Hospitality Services			*			
Restaurant Management (third-year option)			*			
<i>Business Management - Business Pro Curriculum Options</i>						
- Entrepreneurship						*
- Finance						*
- Management/Supervision						*
- Sales						*
Caterpillar Dealer Service Technician			X			
Construction Management Technology			X			
Culinary Arts			X		X	
Chef Training and Management Technology			*		*	
Restaurant Management (third-year option)			*			
Dental Assisting			X			X
Dental Hygiene			X			
Diesel Technology			X		X	
General Diesel			*		*	
Case IH			*			
Komatsu			*			
Automotive and Diesel Master Technician (third-year option)			X			
Electrical Technology			X			
Electrical Construction			*			
Industrial Electrical			*			
Electrical Master Technician (third-year option)			*			
Emergency Medical Services (EMS)			X			X
Emergency Medical Technician						*
Advanced Emergency Medical Technician (AEMT)						*
Paramedic Technology			*			*
Health Information			X			X
Health Information Technician			*			
Medical Coding						*
Heating, Ventilating, Air Conditioning and Refrigeration Technology			X			X
Information and Communications Technology			X			X
Information Systems Administrator			*			
Information Technology Support						*
IT Forensics and Security						*
Web Design						*
Web Developer			*			

**Academic Programs**

	<b>AA</b>	<b>AS</b>	<b>AAS</b>	<b>ASN</b>	<b>Diploma</b>	<b>Certificate</b>
John Deere Tech			X			
Land Surveying and Civil Engineering Technology			X			
Liberal Arts Transfer Curriculum Plans	X	X				
Agriculture		*				
Biotechnology		*				
Business Transfer	*					
Chemistry		*				
Chiropractic		*				
Clinical Laboratory Science		*				
Computer Science		*				
Criminal Justice - Transfer	*					
Dental		*				
Early Childhood Education	*					
Education	*					
Emergency Management	*					
Engineering		*				
General Liberal Arts	*	*				
General Studies		*				
Health, Physical Education and Recreation	*					
Law	*					
Management Information Systems		*				
Mathematics		*				
Medical		*				
Music	*					
Natural Science		*				
Nursing		*				
Optometry		*				
Pharmacy		*				
Physical Science		*				
Psychology	*					
Social Work	*					
Wildlife Management		*				
Mechanical Systems			X			
Nursing						
Practical Nursing (LPN)			X			
Registered Nursing (A.S.N.-RN)				X		
Registered Nursing (A.A.S.-RN)			X			
Occupational Therapy Assistant			X			
Pharmacy Technician			X			X
Plumbing						X
Powersports Technology			X		X	X
Precision Machining Technology			X		X	X
Robotics, Automation and Mechatronics Technology			X			
Technical Studies			X		X	X
Journeyworker Track			*			
Welding Technology			X		X	X

X = degree or award

\* = emphasis areas

5/30/18





# Agriculture

## Ag Business

### ► Contact Information

Chris Duchsherer, instructor  
 chris.duchsherer@ndscs.edu  
 701-671-2602  
 Tech Center 45

### ► Delivery Methods

Face-to-Face: Wahpeton

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

Students will complete an internship relative to their chosen career goal during the summer between their first and second year of instruction.

Students will complete an internship relative to their chosen career goal 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 16	Sentence Skills – 20
	WritePlacer – 5

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.

Course Code	Course Title	Credits
ACCT 102	Fundamentals of Accounting	3
ACCT 118	Applied Accounting	3
AGEC 141	Introduction to Agribusiness Management	2
AGEC 242	Introduction to Ag Management	4
AGEC 244	Introduction to Agriculture Marketing	3
AGEC 246	Introduction to Agriculture Finance	3
AGEC 248	Introduction to Risk Management and Insurance	3
AGEC 250	Agribusiness Sales	3
AGRI 135	Applied Mathematics	2
AGRI 191	First Year Seminar	1
AGRI 197	Internship	3
AGRI 275	Introduction to Precision Agriculture	3
AGRI 291	Second Year Seminar	1
AGRI 297	Internship	1
BOTE 108	Business Math	3
PLSC 225	Principles of Crop Production	3
Agriculture and Business Electives (1 course must have an ANSC prefix)		8

### Related/General Education Courses

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

**Total Required Credits 69**

Revised: May 2018

# Agriculture

## Agronomy

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

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

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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 16	Sentence Skills – 20
	WritePlacer – 5

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.

Course Code	Course Title	Credits
AGEC 141	Introduction to Agribusiness Management (1 cr./term)	2
AGEC 242	Introduction to Agricultural Management	4
AGEC 250	Agribusiness Sales	3
AGRI 275	Introduction to Precision Agriculture	3
AGRI 191	First Year Seminar	1
AGRI 291	Second Year Seminar	1
AGRI 197	Internship	3
AGRI 297	Internship	1
PLSC 115	Crop Technologies	2
PLSC 138	Agronomic Technologies	3
PLSC 224	Introduction to Crop Protection	3
PLSC 225	Principles of Crop Production	3
PLSC 235	Field Scouting Techniques	3
PLSC 235L	Field Scouting Techniques Lab	1
SOIL 222	Soil Fertility and Fertilizers	3
Any Agriculture Electives (1 course must be an ANSC prefix)		10

### Related/General Education Courses

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

### Total Required Credits

69



# Agriculture

## Animal Science

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

Students who enroll in the Animal Science option in the Agriculture Department can choose between careers in diversified crop and livestock production, sales of livestock feed and supplies, and employment in a livestock operation. Students will find many challenging courses. These may include: livestock production, feeds and feeding, livestock health management, range management and advanced production and nutrition courses. Hands-on application of learner outcomes will be used whenever possible.

Students will complete an internship relative to their chosen career goal 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 16	Sentence Skills – 20
	WritePlacer – 5

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.

Course Code	Course Title	Credits
AGEC 141	Introduction to Agribusiness Management (1 Credit/Sem.)	2
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
ANSC 114	Introduction to Animal Science	3
ANSC 116	Animal Reproduction	3
ANSC 118	Livestock Health Management	3
ANSC 123	Feeds and Feeding	3
ANSC 220	Livestock Production	3
ANSC 224	Applied Livestock Feeding	3
ANSC 231	Livestock Evaluation	2
ANSC 252	Large Ruminant Production	3
ANSC 236	Introduction to Range Management	2
AGRI 191	First Year Seminar	1
AGRI 275	Introduction to Precision Agriculture	3
AGRI 291	Second Year Seminar	1
AGRI 197	Internship	3
AGRI 297	Internship	1

### Related/General Education Courses

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

**Total Required Credits** **69**

Revised: May 2018

# Agriculture

## Farm Management

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

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

This curriculum focuses on farm management, record keeping and other agricultural topics such as precision agriculture, commodity marketing, crop production, computerized records and soil fertility.

Courses will incorporate current technology enabling students to acquire the skills necessary to manage and operate today's farms. Students will keep records on their farms while completing their internship with home visits from instructors.

Spring semester classes conclude in mid-April each year. The majority of the program credits will transfer for students who decide to continue their studies for 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, 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 sciences and English. Courses that develop communication skills are important.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 16	Sentence Skills – 20
	WritePlacer – 5

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.

Course Code	Course Title	Credits
AGEC 145	Farm Records	3
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
AGEC 246	Introduction to Agricultural Finance	3
AGEC 248	Introduction to Risk Management and Insurance	3
AGRI 191	First Year Seminar	1
AGRI 291	Second Year Seminar	1
AGEC 247	Ag Land Resource & Acquisition	2
AGRI 197	Internship	4
AGRI 275	Introduction to Precision Agriculture	3
AGRI 297	Internship	2
PLSC 225	Principles of Crop Production	3
SOIL 222	Soil Fertility and Fertilizers	3
Any Agriculture Electives		9
(1 course must be an ANSC prefix)		

### Related/General Education Courses

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

### Total Required Credits

69



# Agriculture

## Precision Agriculture

### ► Contact Information

Chris Duchsherer, instructor  
chris.duchsherer@ndscs.edu  
701-671-2602  
Tech Center 45

### ► Delivery Methods

Face-to-Face: Wahpeton

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

Students will complete an internship relative to their chosen career goal 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."

Course Code	Course Title	Credits
AGEC 141	Introduction to Agribusiness Management	2
AGEC 242	Introduction to Ag Management	4
AGEC 250	Agribusiness Sales	3
AGRI 191	First Year Seminar	1
AGRI 197	Internship	3
AGRI 275	Introduction to Precision Agriculture	3
AGRI 276	Data Collection and Management	3
AGRI 285	Precision Agriculture Systems Software	3
AGRI 286	Advanced Mapping	3
AGRI 291	Second Year Seminar	1
AGRI 297	Internship	1
PLSC 110	World Food Crops	3
PLSC 225	Principles of Crop Production	3
PLSC 235	Field Scouting Techniques	3
PLSC 235L	Field Scouting Techniques Lab	1
SOIL 210	Introduction to Soil Science	3
SOIL 222	Soil Fertility and Fertilizers	3
Any Agriculture Electives		9
(1 course must be an ANSC prefix)		

### Related/General Education Courses

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

**Total Required Credits** **69**

### Admission Requirements\*

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

Required minimum placement scores:

ACT	ACCUPLACER
Reading – 14	Reading Comp – 61
English – 16	Sentence Skills – 20
	WritePlacer – 5

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.

Revised: May 2018

# Agriculture

## Ranch Management

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

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

This curriculum focuses on ranch management, record keeping and other agricultural topics such as livestock production, feeds and feeding, livestock health, management, and marketing, crop production, and computerized records.

Courses will incorporate current technology enabling students to acquire the skills necessary to manage and operate today's farms and ranches. Students will keep records on their farms while completing their internship with home visits from instructors.

Spring semester classes conclude in mid-April each year. The majority of the program credits will transfer for students who decide to continue their studies for 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, 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 sciences and English. Courses that develop communication skills are important.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 16	Sentence Skills – 20
	WritePlacer – 5

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.

Course Code	Course Title	Credits
AGEC 145	Farm Records	3
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Introduction to Agricultural Marketing	3
AGEC 246	Introduction to Agricultural Finance	3
AGEC 247	Ag Land Resource and Acquisition	2
AGEC 248	Introduction to Risk Management and Insurance	3
AGRI 191	First Year Seminar	1
AGRI 275	Introduction to Precision Agriculture	3
AGRI 291	Second Year Seminar	1
AGRI 197	Internship	4
AGRI 297	Internship	2
ANSC 114	Introduction to Animal Science	3
ANSC 123	Feeds and Feeding	3
ANSC 220	Livestock Production	3
ANSC 236	Introduction to Range Management	2
	Any Agriculture Electives	6

### Related/General Education Courses

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

### Total Required Credits

69

Revised: May 2018

## Architectural Drafting and Estimating Technology

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton  
Some Classes Available  
Online

The Architectural 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, 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 \$1,800. 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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 Architectural Drafting and Estimating Technology.

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

### 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 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 Aerial 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
Wellness Elective(s)		2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CSCI 116 – Business Use of Computers – 3 cr		
• PSYC 100 – Human Relations – 2 cr		

### Total Required Credits

70

Revised: May 2018

## Auto Body Repair and Refinishing Technology (Certificate)

### ► 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.

Students are trained hands-on with the latest equipment found in the industry. 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.

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

### Related/General Education Courses

Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
MATH 120	Basic Mathematics I	2
FYE 101	Science of Success	1

**Total Required Credits** **34**

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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 certificate in Auto Body Repair and Refinishing Technology.

Revised: May 2018



# Auto Body Repair and Refinishing Technology



## Auto Body Repair and Refinishing Technology

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

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

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

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

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

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4

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

Revised: May 2018



# Automotive Technology

## Automotive Technology

### ► Contact Information

Peter Mandt, program coordinator  
peter.mandt@nds cs.edu  
701-671-2442  
Schuett Hall 140

### ► Delivery Methods

Face-to-Face: Wahpeton

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

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

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

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

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

The program is master certified by the National Institute for Automotive Service Excellence (ASE).

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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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.

\*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
<b>Diploma and Associate in Applied Science</b>		
AUTO 103	Power Trains/Brakes	3
AUTO 143	Steering, Suspension, and Wheel Alignment	3
AUTO 165	Automotive Electrical and Electronics	5
AUTO 188	Driveability Procedures I	5
AUTO 206	Chassis Repair/Body Electrical	7
AUTO 216	Engine Repair	7
AUTO 226	Automatic Transmission/Transaxles	7
AUTO 285	Light Duty Diesel	2
AUTO 286	Driveability Procedures	7
MFGT 110	Industrial Shop Practices	2
TECH 109	Air Conditioning	2

### Related/General Education Courses

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

**Total Required Credits for Diploma** 63

**Total Required Credits for Associate in Applied Science** 71

### Specialty Options: (Fifth Semester)

AUTO 209	Advanced Chassis Repair and Body Electrical	4-8
AUTO 219	Advanced Engine Rebuilding	4-8
AUTO 229	Advanced Automatic Transmissions/ Automatic Transaxles	4-8
AUTO 289	Electronics and Computer Systems	4-8

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 Automotive Department.

### 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 2018



# Automotive Technology

## Automotive Alignment and Brake Technician

► **Contact Information**

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

► **Delivery Methods**

Face-to-Face: Wahpeton

The Automotive Alignment and Brake Technician option provides students with opportunities to enter the vast automotive repair field as an alignment and brake technician. Graduates may choose to work in an automotive dealership, independent automotive shop, car manufacturer or automotive service center.

Students are provided with experiences emphasizing diagnostic and repair skills with extensive shop time. Students test, diagnose, adjust and repair automotive systems including brakes, electrical and electronics, heating and air conditioning, suspension and steering, and manual drive train and axles.

Graduates gain employment as automotive repair technicians in automotive dealerships, independent automotive shops, or national automotive service centers.

While students are fully employable upon completion of this program, some students continue their education by returning for the complete Automotive Technology program.

The program is master certified by the National Institute for Automotive Service Excellence (ASE).

NOTE: This program requires a laptop computer. For further information please contact Peter Mandt at 701-671-2442.

Course Code	Course Title	Credits
AUTO 103	Power Trains/Brakes	3
AUTO 143	Steering, Suspension and Wheel Alignment	3
AUTO 165	Automotive Electrical and Electronics	5
AUTO 206	Chassis Repair/Body Electrical	7
MFGT 110	Industrial Shop Practices	2
TECH 109	Air Conditioning	2
AUTO 188	Driveability Procedures I	5

**Related/General Education Courses**

ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
FYE 101	Science of Success	1

**Total Required Credits** **33**

**Specialty Option:**

AUTO 209	Advanced Chassis Repair and Body Electrical	7
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NOTE: Students may enter this program at the beginning of any semester. This certificate will take at least three semesters to complete.

**Admission Requirements\***

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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.

*\*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 Automotive Technology with an emphasis in Automotive Alignment and Brake Technician.

Revised: May 2018



# Automotive Technology

## Automotive Engine Technician

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

The Automotive Engine Technician option is designed to provide students with opportunities to enter the vast automotive repair field as an automotive engine technician. Graduates work in automotive dealerships, independent automotive shops or automotive service centers.

Students are provided with experiences emphasizing diagnostic and repair skills with extensive shop time. Students test, diagnose, adjust and repair automotive systems including electrical and electronics, perform engine repair, as well as practice the fundamentals in fuel delivery, tune-up and welding.

While students are fully employable upon completion of this program, some may wish to continue their education by returning for the complete Automotive Technology program.

The program is master certified by the National Institute for Automotive Service Excellence (ASE).

NOTE: This program requires a laptop computer. For further information please contact Peter Mandt at 701-671-2442.

Course Code	Course Title	Credits
AUTO 165	Automotive Electrical and Electronics	5
AUTO 188	Driveability Procedures I	5
AUTO 216	Engine Repair	7
MFGT 110	Industrial Shop Practices	2

### Related/General Education Courses

ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
FYE 101	Science of Success	1

**Total Required Credits** **25**

### Specialty Option:

AUTO 219	Advanced Engine Rebuilding	7
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NOTE: Students may enter this program at the beginning of any semester.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4

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.

*\*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 Automotive Technology with an emphasis in Automotive Engine Technician.



# Automotive Technology

## Automotive Transmission and Driveline Technician

► **Contact Information**

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

► **Delivery Methods**

Face-to-Face: Wahpeton

Course Code	Course Title	Credits
AUTO 103	Power Trains/Brakes	3
AUTO 143	Steering, Suspension, and Wheel Alignment	3
AUTO 165	Automotive Electrical and Electronics	5
AUTO 206	Chassis Repair/Body Electrical	7
AUTO 226	Automatic Transmission/Transaxle	7
MFGT 110	Industrial Shop Practices	2
TECH 109	Air Conditioning	2

The Automotive Transmission and Driveline Technician curriculum prepares students for employment as Automotive Transmission and Driveline Technicians. Students are provided with experiences emphasizing diagnostic and repair skills with extensive shop time. Students test, diagnose, adjust and repair automotive systems including brakes, basic electronics, suspension and steering, manual drivetrain and axles, and automatic transmissions. Students' abilities in communications and other aspects of general education also will be enhanced through coursework.

Graduates work as automotive transmission and driveline technicians in automotive dealerships, independent automotive shops or automotive service centers.

While students are fully employable upon completion of this program, some may wish to continue their education by returning for the complete Automotive Technology program.

The program is master certified by the National Institute for Automotive Service Excellence (ASE).

NOTE: This program requires a laptop computer. For further information please contact Peter Mandt at 701-671-2442.

**Related/General Education Courses**

ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
FYE 101	Science of Success	1

**Total Required Credits** **35**

**Specialty Options:**

AUTO 209	Advanced Chassis Repair/Body Electrical	4-8
AUTO 229	Advanced Automatic Transmission/Automatic Transaxle	4-8

NOTE: Students may enter this program at the beginning of any semester. This certificate will take at least three semesters to complete.

**Admission Requirements\***

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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.

*\*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 Automotive Technology with an emphasis in Automotive Transmission and Driveline Technician.

Academic Programs

Revised: May 2018



# Automotive Technology

## Automotive and Diesel Master Technician

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

This is a third-year option developed for students who complete Automotive Technology or Diesel Technology and want to continue their education and increase their technical and mechanical skills. The dual major will strengthen the marketability of students for employment in automotive, diesel, and related fields of business and industry. This curriculum is for students who complete Automotive Technology and then go to Diesel Technology.

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).

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4

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 Automotive and Diesel Master Technician.

Course Code	Course Title	Credits
AUTO 103	Power Trains/Brakes	3
AUTO 143	Steering, Suspension, and Wheel Alignment	3
AUTO 165	Automotive Electrical and Electronics	5
AUTO 188	Driveability Procedures I	5
AUTO 206	Chassis Repair/Body Electrical Theory	3
AUTO 207	Chassis Repair/Body Electrical Lab	4
AUTO 216	Engine Repair	7
AUTO 226	Automotive Transmission/Transaxle	7
AUTO 286	Driveability Procedures Theory	3
AUTO 287	Driveability Procedures Lab	4
AUTO 297	Cooperative Education (324 hours)	2
MFGT 120	Basic Welding I	1
TECH 109	Air Conditioning	2
TECH 121	Engine Fundamentals	3

### Related/General Education Courses

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

### Diesel Technology (Minor) Courses

DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 135	Medium/Heavy Duty Brake Systems	2
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 185	Diesel Fuel Injection Systems	3
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 100**

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

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

Revised: May 2018



# Building Construction Technology

## Building Construction Technology

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

The Building Construction Technology curriculum prepares students with skills to work in many areas of the construction industry. The program is a unique blend of education and hands-on training that will allow graduates to work for builders, general contractors and subcontractors in residential, industrial and commercial 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 building industry.

The program provides students with realistic classroom and laboratory experiences emphasizing: wood frame, steel frame, concrete construction, steel erection, assembly of pre-engineered metal building systems, equipment operation, construction safety, interior finishing, print reading and project supervision. In addition, students take courses in communications, human relations, technical mathematics, and 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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 Commercial Construction	3
BCT 130	Wood Frame Construction	7
BCT 133	Carpentry Fundamentals	3
BCT 140	Residential Print Reading	2
BCT 210	Light Commercial Construction	7
BCT 220	Project Supervision	3
BCT 222	Construction Safety	2
BCT 224	Building Layout	2
BCT 230	Interior Finishing for Light Commercial Construction	7
BCT 233	Carpentry Framing and Finishing	3
BCT 240	Commercial Print Reading	3
BCT 297	Cooperative Education	2
CMT 253	Construction Scheduling	3

### 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	
HPER 210	First Aid and CPR ( <i>Professional/Community</i> )	2
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CSCI 116 – Business Use of Computers – 3 cr		
• PSYC 100 – Human Relations – 2 cr		

**Total Required Credits** **75**

Revised: May 2018

# 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

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
BUSN 282	*Professional Development	1

### Related/General Education Courses

ACCT 200	Elements of Accounting I	4
ACCT 201	Elements of Accounting II	4
ACCT 215	Business in the Legal Environment	3
CIS 101	Computer Literacy	2
COMM 110	Fundamentals of Public Speaking	3
ECON 105	Elements of Economics	3
	or ECON 201 Principles of Microeconomics (3)	
	or ECON 202 Principles of Macroeconomics (3)	
ENGL 110	College Composition I	3
ENGL 125	Introduction to Professional Writing	3
	or ENGL 120 College Composition II (3)	
FYE 101	Science of Success	1
	Wellness Elective(s)	2
	MATH Elective (BOTE 108 or MATH 103)	3
	Electives	3
	<i>Choose 3 credits from the courses listed below.</i>	
BADM 217	Promotion and Advertising (3)	
BADM 230	Marketing Information Analysis (3)	
BADM 244	Sales Seminar (3)	
BUSN 297	Internship/Coop (1-5)	
PHIL 210	Ethics (3)	
PSYC 111	Introduction to Psychology (3)	
SOC 110	Introduction to Sociology (3)	

**Total Required Credits** **67**

\* Includes membership in Collegiate DECA.

### Admission Requirements\*

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

Required minimum placement scores:

ACT	ACCUPLACER
Reading – 14	Reading Comp – 61
English – 12	WritePlacer – 3-4
Math – 13	Arithmetic – 51
	Elementary Algebra – 25

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 Administration and Finance.

Revised: May 2018





# Business Management

## Business Technology Management

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton  
Online: All Classes  
Combination

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

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

### Related/General Education Courses

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

**Total Required Credits** **36**

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

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 his/her 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:

<b>ACT</b>	<b>ACCUPLACER</b>
Reading – 14	Reading Comp – 61
English – 12	WritePlacer – 3-4
Math – 13	Arithmetic – 51
	Elementary Algebra – 25

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.

Revised: May 2018



# Business Management

## Marketing, Sales and Hospitality Services

### ► Contact Information

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

### ► Delivery Methods

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

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

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

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

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

These careers continue to be some of the largest and highest-paying segments of the job market and job prospects continue to be good for workers who stay up-to-date on the latest developments in their field and are constantly looking for new ways to contribute to the success of their business. Faculty advisors can help assist students in the development of an appropriate program to meet 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 217	Promotion and Advertising	3
BADM 230	Marketing Information Analysis	3
BADM 234	Customer Service	1
BADM 240	Sales	3
BADM 244	Sales Seminar	3
BADM 251	Personal Finance	3
BADM 281	Organizational Behavior	3
BADM 282	Human Resource Management	3
BADM 291	Career Seminar	3
BUSN 120	Fundamentals of Business	3
BUSN 170	Entrepreneurship	3
BUSN 282	*Professional Development	1

### Related/General Education Courses

ACCT 102	Fundamentals of Accounting	3
ACCT 118	Applied Accounting	3
ACCT 215	Business in the Legal Environment	3
CIS 101	Computer Literacy	2
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 125	Introduction to Professional Writing	3
ENGL 120	College Composition II (3)	
FYE 101	Science of Success	1
Wellness Elective(s)		2
BOTE 108	Business Mathematics	3
or MATH 103	College Algebra (3)	
Electives		3
<i>Choose 3 credits from the courses listed below.</i>		
BUSN 297	Internship/Coop (1-5)	
BUSN 254	Financial Statement Analysis (3)	
PHIL 210	Ethics (3)	
ECON 105	Elements of Economics (3)	
or ECON 201	Principles of Microeconomics (3)	
or ECON 202	Principles of Macroeconomics (3)	
PSYC 111	Introduction to Psychology (3)	
SOC 110	Introduction to Sociology (3)	

**Total Required Credits** **68**

\* Includes membership in Collegiate DECA.

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

### 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:

ACT	ACCUPLACER
Reading – 14	Reading Comp – 61
English – 12	WritePlacer – 3-4
Math – 13	Arithmetic – 51
	Elementary Algebra – 25
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 Marketing, Sales and Hospitality Services.

Revised: May 2018



# Business Management

## Restaurant Management

### ► Contact Information

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

### ► Delivery Methods

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

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

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

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

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

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

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

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

**Total Required Credits** **36**

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

\* Includes membership in Collegiate DECA.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 12	WritePlacer – 3-4
Math – 13	Arithmetic – 51
	Elementary Algebra – 25

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 Restaurant Management.

Revised: May 2018



# Business Management

## Business Management

### • Business Pro Curriculum Options

#### ► Contact Information

Ann Smith, associate professor  
ann.smith@ndsacs.edu  
701-671-2302  
Horton Hall 229

#### ► Delivery Methods

Face-to-Face: Fargo

These four certificate options are delivered as part of a Business Management curriculum option commonly called the "Business Pro Series" which is offered through NDSACS-Fargo. It 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 Management.

Designed to meet the needs of an adult population, this program is delivered in a hybrid, or blending of, face-to-face and online learning. Meeting evenings once a week and focusing on one class at a time, this cohort style of learning incorporates interaction and networking while still allowing a learner to balance educational goals with a full-time work or family schedule.

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

#### 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 12	WritePlacer – 3-4
Math – 13	Arithmetic – 51
	Elementary Algebra – 25

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 for the **Entrepreneurship** plan, students will be awarded a certificate in Business Management with an emphasis in Entrepreneurship.

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

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

#### Entrepreneurship

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

#### Related/General Education Courses

ENGL 125	Introduction to Professional Writing	3
PHIL 210	Ethics	3

**Total Required Credits for Certificate 18**

#### Finance

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

#### Related/General Education Courses

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

#### Management/Supervision

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

#### Related/General Education Courses

CSCI 116	Business Use of Computers	4
ENGL 110	College Composition I	3

**Total Required Credits for Certificate 16**

#### Sales

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

#### Related/General Education Courses

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

**Total Required Credits for Certificate 16**

#### Business Management - Marketing Management emphasis

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

#### 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 Management.

Revised: May 2018



# Caterpillar Dealer Service Technician

## Caterpillar Dealer Service Technician

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

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

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

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

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

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

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Or transfer equivalencies will apply as appropriate	

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

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

### Award

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

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

### Related/General Education Courses

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

**Total Required Credits**

**74**

Revised: May 2018



# Construction Management Technology

## Construction Management Technology

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton  
Some Classes  
Available Online

This program is designed to provide individuals with the knowledge and skills needed 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, scheduling, specifications, project management and supervision as well as hands-on classes for estimating, scheduling, surveying and material testing. Students will also take required classes in written and oral communications, math, 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 will prepare 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. Leadership in Energy and Environmental Design (LEED) certification is covered extensively. Green/sustainable construction is also discussed across the rest of the curriculum.

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 \$1800.00. 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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 121	Revit Architecture	2
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	Residential Print Reading	2
BCT 220	Project Supervision	3
BCT 222	Construction Safety	2
BCT 240	Commercial Print Reading	3
CMT 130	Green Building Fundamentals	2
CMT 225	Mechanical & Electrical Systems	2
CMT 251	Construction Documents and Specifications	3
CMT 252	Project Management	3
CMT 253	Construction Scheduling	3
CMT 297	Cooperative Education	2
CT 132	Materials Testing/Quality Control	4
Survey Elective (choose one)		2
CMT 120	Surveying Fundamentals	
BCT 224	Building Layout	
Residential Materials Elective (choose one)		2
BCT 133	Carpentry Fundamentals (3)	
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	(1)
CMT 265	Residential Project Experience	(1)
CT 111	Civil Plans and Specifications	(2)
UAS 111	Introduction to UAS	(2)
UAS 112	Unmanned Aerial Systems Certification (1)	

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

**Total Required Credits** **74**

Revised: May 2018



## Culinary Arts

### Chef Training and Management Technology

#### ► Contact Information

Mary Uhren, program coordinator  
mary.uhren@ndscs.edu  
701-671-2842  
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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 14	Reading Comp – 61
English – 16	WritePlacer – 5
Math – 13	Arithmetic – 51
	Elementary Algebra – 25

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	8
CULA 220	Dining Room Service	1
CULA 221	Principles of Restaurant Management	2
CULA 222	Restaurant Service and Production Management	2
CULA 297	*Cooperative Education	2

#### Related/General Education Courses for Diploma

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

#### Related/General Education Courses for Associate Degree

ACCT 118	Applied Accounting	3
BOTE 108	Business Math	3
ENGL 110	College Composition I	3
ENGL 105	Technical Communications	3
or ENGL 120 College Composition II (3)		
or ENGL 125 Introduction to Professional Writing (3)		
FYE 101	Science of Success	1
HPER 210	First Aid and CPR ( <i>Professional/Community</i> )	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
● CSCI 116 – Business Use of Computers – 3 cr		
● PSYC 100 – Human Relations in Organizations – 2 cr		
General Education Elective		3
<b>Total Required Credits for Associate</b>		<b>74</b>

\*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.

Revised: May 2018



# Dental Assisting

## Dental Assisting (Certificate)

### ► Contact Information

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

### ► Delivery Methods

Face to Face: Wahpeton  
Online: Some Classes

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

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

### Career Opportunities

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

The Dental Assisting program includes curriculum content in general studies, biodental sciences, dental sciences, clinical sciences and clinical practice. Students receive more than 300 hours of on-the-job training 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.

Course Code	Course Title	Credits
DAST 105	Office Practice and Management	1
DAST 106	Pre-Clinic I	1
DAST 110	Oral Anatomy	2
DAST 111	Introduction to Chairside Assisting	3
DAST 115	Dental Radiology	3
DAST 120	Dental Assisting Expanded Function	2
DAST 132	Clinical Training I	3
DAST 132L	Clinical Training I: Clinic	1
DAST 133	Clinical Training II	5
DAST 142	Dental Materials	3
DAST 144	Biodental Science	2
FYE 101	Science of Success	1
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
PSYC 111	Introduction to Psychology	3
BIOL 115	Human Structure and Function	3
BIOL 115L	Human Structure and Function Lab	1
ENGL 105	Technical Communications	3

**Total Required Credits for Certificate** **41**

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

The program adheres to the NDS-CS Equal Opportunity Policy as stated in the *NDS-CS Catalog*. Dental Assisting Program Competencies, Program Goals, and Essential Functions are available on the website at [www.ndscs.edu](http://www.ndscs.edu).

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

### Admission Requirements\*

The following criteria must be complete by **March 15<sup>th</sup>** prior to entry into the Dental Assisting program. Applicants that apply after the March 1 deadline can complete the admission 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 NDS-CS Admission process and submit an official college transcript and all official college transcripts to Enrollment Services.
2. Complete the Supplemental Program Application for Dental Assisting.
3. Satisfaction of the following: Minimum of 2.5 high school GPA; OR twelve college semester credits with a minimum GPA of 2.0.
4. Points are awarded for grades in high school biology, algebra and chemistry and college level anatomy and microbiology.
5. Bonus points are awarded for grades in college level courses; human structure, anatomy and physiology and introductory microbiology.
6. Submit the Dental Assisting Observation Hours form with a minimum of 4 hours observation.
7. Complete the admission assessment examination and meet the program benchmark score of 45. The exam can be retaken once.
8. Review Essential Functions for Allied Dental Education Students and submit the Essential Functions Verification form.

Applicants with English as a second language will be required to complete an English language proficiency exam and meet the benchmark score. Contact the program to schedule the assessment if this applies.

**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](http://www.ndscs.edu/dental) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto: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.

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross CPR/AED Professional Rescuer course ONLY), and documentation of a current eye exam are student requirements 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.

*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 Dental Assisting. Graduates will meet requirements to become registered within the state and eligible to take the Dental Assisting National Board. A criminal background check will be required and a felony conviction may affect state licensure.

Revised: April 2018





# Dental Assisting

## Dental Assisting (AAS degree)

### Contact Information

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

### Delivery Methods

Face to Face: Wahpeton  
 Online: Some Classes

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

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

### Career Opportunities

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

The Dental Assisting program includes curriculum content in general studies, biodental sciences, dental sciences, clinical sciences and clinical practice. Students receive more than 300 hours of on-the-job training 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.

Course Code	Course Title	Credits
DAST 105	Office Practice and Management	1
DAST 106	Pre-Clinic I	1
DAST 110	Oral Anatomy	2
DAST 111	Introduction to Chairside Assisting	3
DAST 115	Dental Radiology	3
DAST 120	Dental Assisting Expanded Function	2
DAST 132	Clinical Training I	3
DAST 132L	Clinical Training I: Clinic	1
DAST 133	Clinical Training II	5
DAST 142	Dental Materials	3
DAST 144	Biodental Science	2
FYE 101	Science of Success	1
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
PSYC 111	Introduction to Psychology	3
COMM 110	Fundamentals of Public Speaking	3
CIS 101	Computer Literacy	2
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
BIOL 115	Human Structure and Function	3
BIOL 115L	Human Structure and Function Lab	1
or BIOL 220	Anatomy and Physiology I (3)	
BIOL 220L	Anatomy and Physiology I Lab (1)	
and BIOL 221	Anatomy and Physiology II (3)	
BIOL 221L	Anatomy and Physiology II Lab (1)	
ENGL 110	College Composition I	3
English Elective (choose one)		3
ENGL 120	College Composition II	
ENGL 105	Technical Communications	
General Education Electives (To be chosen with advisor)		14

**Total Required Credits for Associate 66**

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](http://www.ndscs.edu).

A certificate in Dental Assisting is also available. Please see separate fact sheet for additional information.

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

### Admission Requirements\*

The following criteria must be complete by **March 15<sup>th</sup>** prior to entry into the Dental Assisting program. Applicants that apply after the March 1 deadline can complete the admission 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 college transcript and all official college transcripts to Enrollment Services.
2. Complete the Supplemental Program Application for Dental Assisting.
3. Satisfaction of the following: Minimum of 2.5 high school GPA; OR twelve college semester credits with a minimum GPA of 2.0.
4. Points are awarded for grades in high school biology, algebra and chemistry and college level anatomy and microbiology.
5. Bonus points are awarded for grades in college level courses; human structure, anatomy and physiology and introductory microbiology.
6. Submit the Dental Assisting Observation Hours form with a minimum of 4 hours observation.
7. Complete the admission assessment examination and meet the program benchmark score of 45. The exam can be retaken once.
8. Review Essential Functions for Allied Dental Education Students and submit the Essential Functions Verification form.

Applicants with English as a second language will be required to complete an English language proficiency exam and meet the benchmark score. Contact the program to schedule the assessment if this applies.

**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](http://www.ndscs.edu/dental) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto: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.

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross CPR/AED Professional Rescuer course ONLY), and documentation of a current eye exam are student requirements 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.

*\*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 an Associate in Applied Science degree in Dental Assisting. Graduates will meet requirements to become registered within the state and eligible to take the Dental Assisting National Board. A criminal background check will be required and a felony conviction may affect state licensure.

Revised: April 2018



# Dental Hygiene

## Dental Hygiene

### Contact Information

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

### Delivery Methods

Face to Face: Wahpeton

The Dental Hygiene program is designed to prepare students as professionals in the discipline of dental hygiene. The dental hygienist, a licensed member of the dental health team, provides dental health education, promotes and encourages the preventive aspects of dental care, removes stains and deposits from teeth, exposes and processes dental radiographs, administers local anesthesia, provides many other patient treatment procedures and assumes other responsibilities in the dental office.

### Career Opportunities

Dental hygienists are typically employed in general dental practices or specialty practices. Dental hygienists also can apply their skills and knowledge in other career activities including public health, corporate dental representative, dental office management and dental hygiene education depending on the level of education and experience they have achieved.

### Dental Hygiene Curriculum

The Dental Hygiene program consists of classroom, laboratory and clinical experiences emphasizing skill development, self-assessment and professionalism offered over five continuous semesters. The majority of the clinical experience is in the NDSCS dental clinic. Students are also assigned to off-campus affiliation sites to enhance their dental hygiene education. Students must provide their own transportation to off-campus affiliation sites. Criminal background checks will be required. A felony charge and/or conviction may affect participation in clinical experience(s), and therefore, program completion. If this issue applies, the student must meet with the department chair.

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

The program adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog*. Dental Hygiene Program Competencies, Program Goals, and Essential Functions are available on the website at [www.ndscs.edu](http://www.ndscs.edu).

Course Code	Course Title	Credits
DHYG 101	Pre-Clinic	1
DHYG 101L	Pre-Clinic Lab	3
DHYG 102	Clinic I	1
DHYG 102L	Clinic I Lab	4
DHYG 103	Clinic II	1
DHYG 103L	Clinic II Lab	3
DHYG 110	Oral Anatomy	2
DHYG 112	Oral Embryology and Histology	1
DHYG 114	Dental Radiology	3
DHYG 145	Periodontics I	1
DHYG 201	Clinic III Lecture	1
DHYG 201L	Clinic III Lab	4
DHYG 202	Clinic IV	1
DHYG 202L	Clinic IV Lab	4
DHYG 209	Head and Neck Anatomy	1
DHYG 210	Local Anesthesia	1
DHYG 212	Oral Pathology	1
DHYG 220	Community Dental Health	2
DHYG 242	Dental Materials	3
DHYG 243	Dental Jurisprudence	1
DHYG 245	Periodontics II	1
PHRM 201	Dental Pharmacology	2

### Related/General Education Courses

BIOL 213	General Pathology	3
CHEM 116	Intro to Organic and Biochemistry	3
CHEM 116L	Intro to Organic and Biochemistry Lab	1
CIS 101	Computer Literacy	2
COMM 110	Fundamentals of Public Speaking	3
FYE 101	Science of Success	1
ENGL 120	College Composition II	3
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 111	Introduction to Psychology	3
SOC 110	Introduction to Sociology	3

**Total Required Credits**

**71**

### Admission 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 admission 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 college transcript and all official college transcripts to Enrollment Services.
2. Complete the Supplemental Program Application for Dental Hygiene.
3. Submit to Enrollment Services an official college transcript(s) with a minimum of twelve college semester credits and a minimum GPA of 2.50.
4. Submit the Dental Hygiene Observation Hours form with a minimum of 4 hours.
5. Complete the admission assessment examination and meet the program benchmark score of 50. The exam can be retaken once.
6. Complete pre-requisite courses by **January 1**: Introductory Chemistry (CHEM 115 and 115L), Anatomy and Physiology I (BIOL 220 and 220L) and College Composition I (ENGL 110). Complete pre-requisite course by **May 15**: Anatomy and Physiology II (BIOL 221 and 221L) with a "C" or higher.
7. Bonus admission points will also be awarded for: Introduction to Organic and Biochemistry (CHEM 116 and 116L), Elementary Statistics (MATH 210). In-progress Grades Form submitted to program by **March 1**.
8. Review Essential Functions for Allied Dental Education Students and submit the Essential Functions Verification form.

Applicants with English as a second language will be required to complete an English language proficiency exam and meet the benchmark score. Contact the program to schedule the assessment if this applies.

\*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 Dental Hygiene Program Information and Selection Process Booklet available at [www.ndscs.edu/dental](http://www.ndscs.edu/dental) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto: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.

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross CPR/AED Professional Rescuer course ONLY), and documentation of a current eye exam are student requirements 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.

Licensure requirements for dental hygienists include successful completion of the Dental Hygiene National Board Examination and a regional clinical examination, i.e. CRDTS, WREB. Individual states have additional licensure requirements. A criminal background check will be required and a felony conviction may affect state licensure.

### Award

Upon program completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science degree in Dental Hygiene.

Revised: April 2018



# Diesel Technology

## General Diesel

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

The Diesel Technology program is designed to prepare students for the many employment opportunities in the diesel industry.

This unique program allows students to enter the program at the beginning of any eight-week period. This program gives students the option of earning a diploma or applied science degree. Students are given extensive training and practical experiences in servicing all types of engines, drive trains, hydraulic systems and electrical systems found on trucks, agricultural and industrial equipment.

Students enrolled in Diesel Technology learn the theory of operation along with the latest repair and diagnostic procedures available in the diesel industry. Training facilities are in excellent condition and labs are very well-equipped.

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

Students graduating from Diesel Technology are fully employable upon completion of this program. Diesel Technology graduates are employed by agricultural, industrial (truck and heavy equipment), construction equipment companies, mining industries or fleet owners. Some students may wish to continue their education by returning for an additional year and earn a minor in Automotive Technology.

Students seeking an Associate in Applied Science degree are required to complete both English 105 and 110, Math 125 and 324 hours of work experience (DTEC 297).

The Diesel Technology program is accredited by the AED Foundation.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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.

Course Code	Course Title	Credits
<b>Diploma</b>		
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 135	Medium/Heavy Duty Brake Systems	2
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 185	Diesel Fuel Injection Systems	3
DTEC 215	Heavy Duty Diesel Engines	7
DTEC 225	Heavy Duty Drive Systems	7
DTEC 255	Heavy Duty Chassis Electrical Systems	7
DTEC 265	Mobile Hydraulic Systems Diagnostics and Repair	7
MFGT 110	Industrial Shop Practices	2

### Associate in Applied Science

DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 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 185	Diesel Fuel Injection Systems	3
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	2
MFGT 110	Industrial Shop Practices	2

### Related/General Education Courses

#### Diploma

ENGL 105	Technical Communications	3
or ENGL 110	College Composition I (3)	
Wellness Elective(s)		2
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
FYE 101	Science of Success	1

#### Associate in Applied Science

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

**Total Required Credits for Diploma** 66

**Total Required Credits for Associate in Applied Science** 73

\* Diploma students take ENGL 105 or ENGL 110

### Suggested sequence of study

All 100 course classes must be completed before advancing to the 200 course classes.

NOTE: Students may enter this program at the beginning of any semester. A student may be able to start in the middle of a semester; for information please contact the Diesel Technology Department.

Revised: May 2018



# Diesel Technology

## Case IH

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

The Case IH program is designed to develop technically competent, professional service technicians for participating Case IH dealerships.

This program combines state-of-the-art, on-campus training with internships at a sponsoring Case IH dealership. Students receive technical training on Case IH equipment and related products through a combination of classroom instruction and hands-on laboratory experiences. Classroom and laboratory instruction at NDSCS covers the basics of each subject plus the latest developments in Case IH agricultural equipment. Work experience at the dealership reinforces on-campus training and exposes the student to real life shop service practices.

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

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

Course Code	Course Title	Credits
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 115	Introduction to Light and Medium Duty Engines	4
DTEC 125	Introduction to Heavy Duty Drive Systems	3
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
MFGT 110	Industrial Shop Practices	2
CIH 106	Case IH Shop Service Management	2
CIH 215	Case IH Engine Rebuild	6
CIH 216	Case IH Equipment Operation and Adjustment	4
CIH 225	Case IH Powertrains	4
CIH 255	Case IH Electrical/Electronics	5
CIH 260	Case IH AFS (Advanced Farming Systems)	3
CIH 265	Case IH Hydraulic Systems Diagnostics	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 – 2 cr		
FYE 101	Science of Success	1

**Total Required Credits for Associate 75**

### Admission Requirements\*

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

Required minimum placement scores:

ACT	ACCUPLACER
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Or transfer equivalencies will apply as appropriate	

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

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

### Award

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

Revised: May 2018



# 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.

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

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 – 2 cr		
FYE 101	Science of Success	1

**Total Required Credits for Associate 72**

### 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	ACCUPLACER
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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.

Revised: May 2018

# Diesel Technology

## Automotive and Diesel Master Technician

### Contact Information

Terry Marohl, department chair  
 terry.marhol@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.

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.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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 Automotive and Diesel Master Technician.

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 135	Medium/Heavy Duty Brake Systems	2
DTEC 155	Electricity for Diesel Technology	4
DTEC 164	Introduction to Mobile Hydraulics	4
DTEC 185	Diesel Fuel Injection Systems	3
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	2
MFGT 110	Industrial Shop Practices	2

### Related/General Education Courses

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

### Automotive Technology (Minor)

#### Specific Program Courses

AUTO 206	Chassis Repair/Body Electrical Theory	3
AUTO 207	Chassis Repair/Body Electrical Lab	4
AUTO 216	Engine Repair	7
AUTO 226	Automotive Transmission/Transaxle	7
AUTO 286	Driveability Procedures Theory	3
AUTO 287	Driveability Procedures Lab	4

### Total Required Credits

101

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



# Electrical Technology

## Electrical Construction

### ► Contact Information

Ivan Maas, department chair  
ivan.maas@ndscs.edu  
701-671-2662  
Barnard Hall 118

### ► Delivery Methods

Face-to-Face: Wahpeton

The Electrical Construction option of the Electrical Technology program is designed to give students the skills necessary for successful employment in the electrical construction industry. The core curriculum of the Electrical Technology program includes an in-depth study of electrical theory, applied math, code study and residential wiring. A substantial amount of hands-on experience is provided in our seven dedicated laboratories, which contain AutoCAD drawing, advanced electrical test equipment, electric motors, magnetic motor starters, programmable controllers, electronic devices and instrumentation. Green technology is applied in areas of lighting and design class, efficiency of motors, controlling of loads (lighting, AC, etc.) in building operation through programmable controllers (PLCs).

The Electrical Construction option adds skills in the area of commercial and industrial wiring systems, advanced code study and planning and estimating. Graduates of this option are well prepared to meet the challenges of today's modern equipment and wiring systems thanks, in part, to the faculty who collectively have over 200 years of industry and training experience.

Graduates of this option are also exempt from the mandatory classroom training required by North Dakota law (ND Century Code 43-09-11).

While students are fully employable upon completion of this associate-granting program, some elect to return for another year of training, earning the Electrical Master Technician degree (please refer to the Electrical Technology, Electrical Master Technician). Other students may wish to continue their education by returning for an additional year, combining Electrical Technology with Robotics, Automation and Mechatronics, HVAC/R, Plumbing, or business classes. Students may transfer to four-year colleges and universities for a bachelor's degree in programs such as Construction Management or Engineering Technology.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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.

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	3-Phase Electrical Systems	5
ECAL 205	Electrical Design and Lighting	3
ECAL 211	AC Measurements	4
ECAL 223	Electronic Devices/Lab	4
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3

### Electrical Construction Courses

ECAL 203	Advanced Electrical Code Study	3
ECAL 204	Electrical Planning and Estimating	4
ECAL 233	Commercial Wiring Lab	3

### Related/General Education Courses

FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 132	Technical Algebra I	2
MATH 134	Technical Algebra II	2
MATH 136	Technical Trigonometry	2
HPER	Wellness Elective(s)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 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 2018



# Electrical Technology

## Industrial Electrical

### ► Contact Information

Ivan Maas, department chair  
ivan.maas@ndscs.edu  
701-671-2662  
Barnard Hall 118

### ► Delivery Methods

Face-to-Face: Wahpeton

The Industrial Electrical option of the Electrical Technology program is designed to give students the skills necessary for successful employment in the industrial sector of the electrical industry. The core curriculum of the Electrical Technology programs includes in-depth study of electrical theory, applied math, code study and residential wiring. A substantial amount of hands-on experience is provided in our seven dedicated laboratories, which contain AutoCAD drawing, advanced electrical test equipment, electric motors, magnetic motor starters, programmable controllers, electronic devices and instrumentation. Green technology is applied in areas of lighting and design class, efficiency of motors, controlling of loads (lighting, AC, etc.) in building operation through programmable controllers (PLCs).

The Industrial Electrical option adds skills in the area of automated industrial controls (robotics, pneumatics and digital electronics) as well as large motors and the electronic drives that control those motors. Graduates of this option find employment as maintenance technicians for manufacturing firms, power companies and processing plants. They also have opportunities to work as engineering technicians in the design, manufacturing and sales of electrical equipment. This flexibility in employment is made possible by the department's eight faculty members who collectively have over 200 years of industry and training experience.

Graduates of this option are also exempt from the mandatory classroom training required by North Dakota law (ND Century Code 43-09-11).

While students are fully employable upon completion of this associate-granting program, some elect to return for another year of training, earning the Electrical Master Technician degree (please refer to the Electrical Technology, Electrical Master Technician). Other students may wish to continue their education by returning for an additional year, combining Electrical Technology with Robotics, Automation and Mechatronics, HVAC/R, Plumbing, or business classes. Students may transfer to four-year colleges and universities for a bachelor's degree in programs such as Construction Management or Engineering Technology.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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.

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	3-Phase Electrical Systems	5
ECAL 205	Electrical Design and Lighting	3
ECAL 211	AC Measurements	4
ECAL 223	Electronic Devices/Lab	4
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3

### Industrial Courses

ECAL 224	Automated Industrial Controls Lab	5
ECAL 242	Advanced Drives/Lab	2
ECAL 253	Introduction to Instrumentation Lab	3

### Related/General Education Courses

FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 132	Technical Algebra I	2
MATH 134	Technical Algebra II	2
MATH 136	Technical Trigonometry	2
HPER	Wellness Elective(s)	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101	– Computer Literacy – 2 cr	
• PSYC 100	– Human Relations – 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.

Revised: May 2018





# Electrical Technology

## Electrical Master Technician

### ► Contact Information

Ivan Maas, department chair  
ivan.maas@ndscs.edu  
701-671-2662  
Barnard Hall 118

### ► 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 3<sup>rd</sup> 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](http://www.ndseb.com)

[www.electricity.state.mn.us/BOE.asp](http://www.electricity.state.mn.us/BOE.asp)

<http://dol.sd.gov/bdcomm/electric/>

[www.bls.gov/oco/ocos206.htm#addinfo](http://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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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.

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	3-phase Electrical Systems	5
ECAL 205	Electrical Design and Lighting	3
ECAL 211	AC Measurements Lab	4
ECAL 223	Electronic Devices/Lab	4
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3

### Electrical Construction Courses

ECAL 203	Advanced Electrical Code Study	3
ECAL 204	Electrical Planning and Estimating	4
ECAL 233	Commercial Wiring Lab	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 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 261	HVAC and Building Systems	2
ECAL 263	Distributed Electrical Systems	3
ECAL 254	Instrumentation and Controls Systems	4
ECAL 255	Process Measurement and Control Valves	4
RAMT 107	Mechanical Drives and Maintenance I	2
RAMT 109	Mechanical Drives and Maintenance II	2
RAMT 244	System Integration and Troubleshooting	2

### Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
MATH 132	Technical Algebra I	2
MATH 134	Technical Algebra II	2
MATH 136	Technical Trigonometry	2
Wellness Elective(s)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 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 2018



# 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

Course Code	Course Title	Credits
*EMS 101	Introduction Into EMS	2
EMS 110	EMT Fundamentals	2
EMS 110L	EMT Lab	1
EMS 110P	EMT Practicum	1
<b>**Total required core credits</b>		<b>6</b>

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 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.

<b>Related/General Education Courses:</b>		
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
FYE 101	Science of Success	1
English/Communication Elective (choose one)		
ENGL 105	Technical Communications	3
***ENGL 110	College Composition I	
COMM 110	Fundamentals of Public Speaking	
Social and Behavioral Science Electives		
ECON, HIST, POLS, PSYC, SOC, or CIS/CSCI Electives.		2
(Note: maximum of two CIS/CSCI credits may be used for this category).		
HPER Electives		2

### **Total Required Credits for Certificate 18**

\*Completion of EMS 101 ("C" or higher) within 5 years will transfer into Paramedic Program.

\*\*Upon successful completion of the required core courses ("C" or higher) students will be eligible to take the EMT NREMT exam.

\*\*\*ENGL 110 is required for Paramedic AAS degree

### **Admission Requirements\***

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

1. Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
2. Hold a current State or National Registry of Emergency Medical Technicians (NREMT) EMT certification.
3. Submit official ACT and/or Placement testing results to **Enrollment Services**. Results must meet criteria to enroll in English 110 fall semester **OR** submit an official college transcript with ENGL 110 completed with a "C" or higher.

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

### **Award**

Upon successful completion of the required courses, ("C" or higher) students will be awarded a certificate in Emergency Medical Services (EMS) with an emphasis in Emergency Medical Technician.

Revised: May 2018



# Emergency Medical Services (EMS)

## Advanced 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

Course Code	Course Title	Credits
*EMS 101	Introduction into EMS	2
EMS 150	AEMT Fundamentals	2
EMS 150L	AEMT Fundamentals Lab	1
*EMS 170	Trauma I	2
*EMS 180	Pharmacology I	1
*EMS 241	Advanced Provider Practicum I	2
<b>**Total required core credits</b>		<b>10</b>

NDSCS offers a program certificate in Advanced Emergency Medical Technician (AEMT).

The AEMT program offers career training for mid-level positions in a pre-hospital emergency medical setting. Those students who successfully complete the AEMT coursework will be eligible to apply to take state or national certification exams.

As members of the emergency medical services system, AEMTs respond to emergency calls to provide efficient and immediate care to the critically ill and injured and transport patients to appropriate medical facilities.

AEMTs 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. AEMTs also help with childbirth, cardiac, respiratory and endocrine emergencies, behavioral problems, extrication, lifting and moving patients and entry level advanced cares under the authority of an approved medical director.

AEMTs 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.

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 program coordinator.

Students who successfully complete AEMT NREMT exam may choose to also pursue a certificate or an Associate in Applied Science degree in Paramedic Technology from NDSCS.

*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.

### Related/General Education Courses:

***BIOL 221	Anatomy and Physiology II	3
***BIOL 221L	Anatomy and Physiology II Lab	1
FYE 101	Science of Success	1
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
***ENGL 110	College Composition I	
COMM 110	Fundamentals of Public Speaking	
Social and Behavioral Science Electives		2
ECON, HIST, POLS, PSYC, SOC, or CIS/CSCI Electives. (Note: maximum of two CIS/CSCI credits may be used for this category).		
HPER Electives		2
ND: Math (103 or higher)		3

**Total Required Credits for Certificate** **25**

\*Completion of EMS 101, EMS 170, EMS 180, EMS 241 ("C" or higher) within 5 years will transfer into Paramedic Program.

\*\*Upon successful completion of the required core courses ("C" or higher) students will be eligible to take the AEMT NREMT exam.

\*\*\*Note: BIOL 220/220L is a prerequisite for BIOL 221/221L

\*\*\*\*ENGL 110 is required for Paramedic AAS degree

### Admission Requirements\*

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

1. Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
2. Hold a current State or National Registry of Emergency Medical Technicians (NREMT) EMT certification.
3. Submit official ACT and/or Placement testing results to Enrollment Services. Results must meet criteria to enroll in English 110 fall semester OR submit an official college transcript with ENGL 110 completed with a "C" or higher.

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

### Award

Upon successful completion of the required courses, ("C" or higher) students will be awarded a certificate in Emergency Medical Services (EMS) with an emphasis in Advanced Emergency Medical Technician.

Revised: May 2018



# Emergency Medical Services (EMS)

## Paramedic Technology (Certificate)

### ► Contact Information

Thomas Dobrzynski, program coordinator  
tom.dobrzynski@sandfordhealth.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

Course Code	Course Title	Credits
EMS 101	Introduction into EMS	2
EMS 170	Trauma I	2
EMS 180	Pharmacology I	1
EMS 203	Pharmacology II	2
EMS 204	Medical Emergencies I	2
EMS 205	Medical Emergencies II	2
EMS 207	Special Populations	2
EMS 215	Cardiology	4
EMS 217	Pulmonology	3
EMS 218	Cardio-Pulmonology	1
EMS 219	Trauma II	1
EMS 231	Paramedic Skills Lab I	2
EMS 232	Paramedic Simulation Lab	2
EMS 233	Advanced Life Support Lab	3
EMS 234	Paramedic Assessment Lab	1
or EMS 150L AEMT Fundamentals Lab (1)		
EMS 241	Advanced Provider Practicum I	2
EMS 242	Advanced Provider Practicum II	4
EMS 243	Capstone in Paramedicine	3

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.

The Paramedic program is accredited by the Commission on Accreditation of Allied Health Education Programs, 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763, 727-210-2354, www.caahep.org. Upon completion of the certificate or degree program, students will be eligible to take the NREMT paramedic exams. **727-210-2350**

\* Special computer and internet requirements for hybrid delivery, please check with program for specific requirements.

### Related/General Education Courses:

BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
Wellness Elective		1
FYE 101	Science of Success	1

**Total Required Credits for Associate 45**

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

*NOTE: This program requires a tablet with a 7-inch screen or larger. For further information, please contact the program coordinator.*

### Admission Requirements\*

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

1. Complete the NDSCS Application for Admission if the applicant has not attended NDSCS or complete a re-application if the applicant has previously attended or is a past graduate of NDSCS.
2. Hold a current State or National Registry of Emergency Medical Technicians (NREMT) EMT or AEMT certification.
3. 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.
4. Completion of BIOL 220 and BIOL 220L within the past 10 years with a "C" or higher.
5. 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.

### Admission Requirements (Cont.)

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.

**PLEASE NOTE:**  
EMS accreditation was recommended by the Committee on Accreditation of Educational Professions 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.

Revised: May 2018



# 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.

The Paramedic program is accredited by the Commission on Accreditation of Allied Health Education Programs, 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33763, 727-210-2354, www.caahep.org. Upon completion of the certificate or degree program, students will be eligible to take the NREMT paramedic exams. 727-210-2350

*NOTE: This program requires a tablet with a 7-inch screen or larger. For further information, please contact the program coordinator.*

\* Special computer and internet requirements for hybrid delivery, please check with program for specific requirements.

Course Code	Course Title	Credits
EMS 101	Introduction into EMS	2
EMS 170	Trauma I	2
EMS 180	Pharmacology I	1
EMS 203	Pharmacology II	2
EMS 204	Medical Emergencies I	2
EMS 205	Medical Emergencies II	2
EMS 207	Special Populations	2
EMS 215	Cardiology	4
EMS 217	Pulmonology	3
EMS 218	Cardio-Pulmonology	1
EMS 219	Trauma II	1
EMS 231	Paramedic Skills Lab I	2
EMS 232	Paramedic Simulation Lab	2
EMS 233	Advanced Life Support Lab	3
EMS 234	Paramedic Assessment Lab	1
or EMS 150L	AEMT Fundamentals Lab (1)	
EMS 241	Advanced Provider Practicum I	2
EMS 242	Advanced Provider Practicum II	4
EMS 243	Capstone in Paramedicine	3
EMS 250	Leadership in EMS	2
EMS/HPER Electives		2

### Related/General Education Courses:

BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
Wellness Elective		2
FYE 101	Science of Success	1
ENGL 110	College Composition I	3
ENGL/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Social and Behavioral Science Electives		4
ECON, HIST, POLS, PSYC, SOC, or CIS/CSCI Electives.		
(Note: maximum of two CIS/CSCI credits may be used for this category).		
ND: Math (103 or higher)		3

**Total Required Credits for Associate 67**

Certificate is also available. Please see separate fact sheet for additional information.

### Admission Requirements\*

The applicant must be a high school graduate or equivalent and be 18 years of age. Applicants must have the ability to meet technical standards of the program and may be required to complete a basic skills evaluation during the admissions process.

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 or AEMT certification.
3. 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.
4. Completion of BIOL 220 and BIOL 220L within the past 10 years with a "C" or higher.
5. 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.

### Admission Requirements (Cont.)

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.

### PLEASE NOTE:

**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.**

Revised: May 2018

## Health Information

### Health Information Technician

#### ► Contact Information

Geralyn Matejcek, department chair  
 geralyn.matejcek@ndscs.edu  
 701-671-2269  
 Mayme Green Allied Health Center 213H

#### ► 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. The median annual wage was \$38,040 in May 2016.

Work settings include hospitals, long-term care, behavioral health facilities, home health agencies, insurance companies, physician practices, software vendors, consulting and auditing firms, government agencies, and other facilities outside of healthcare. With appropriate experience, RHITs may be employed remotely (at-home).

Graduates may pursue a bachelor's degree at another institution, and/or obtain specialty certifications for further advancement and management opportunities in the profession.

Academic training includes online learning laboratories. Students will participate in two virtual professional practice courses, including an onsite experience. Whenever possible, the onsite experience is scheduled in the student's geographic area. Tuition and fees are assessed for these courses.

\*Healthcare facilities may require a criminal background check, drug testing, and other health-related documentation prior to accepting the student for a professional practice experience. Results may affect placement and the student's ability to complete the program of study.

#### Delivery Options

The program is available both online and on-campus. Online students complete all courses online, while on-campus students complete HIT prefix courses online and most related/general education courses in a traditional classroom.

Students with transfer credits may apply for a waiver of the FYE 101 course. Other transfer credit will be evaluated per college policy.

#### 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](http://www.ndscs.edu).

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

Course Code	Course Title	Credits
HIT 176	Introduction to Health Information	4
HIT 180	Pathopharmacology	3
HIT 181	Healthcare Delivery Systems	3
HIT 184	Basic Diagnosis Coding	3
HIT 185	Basic Procedure Coding	3
HIT 197	Professional Practice I	2
HIT 280	Coding Application (8 wks.)	2
HIT 281	Health Law, Privacy and Ethics	3
HIT 282	Health Information Data Analytics	3
HIT 283	Health Information Leadership (8 wks.)	2
HIT 284	Healthcare Quality Management	3
HIT 285	Reimbursement Methodologies	3
HIT 286	Intermediate Diagnosis Coding	3
HIT 287	Computer Applications in Healthcare	3
HIT 288	Intermediate Procedure Coding	3
HIT 297	Professional Practice II	2

#### Related/General Education Courses

BIOL 220**	Anatomy and Physiology I	3
BIOL 221**	Anatomy and Physiology II	3
BOTE 171	Medical Terminology	4
COMM 110	Fundamentals of Public Speaking	3
CSCI 116	Business Use of Computers	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
HPER	Elective(s)	2
PSYC 100	Human Relations in Organizations	2
<b>Total Required Credits</b>		<b>69</b>

\*\*BIOL 220L and BIOL 221L are recommended for students who are planning to complete a transfer degree at a later time.

#### Curriculum Requirements

A grade of "C" or above must be achieved in all courses in order to advance in the program and prior to taking the professional practice courses. Minimum keyboarding competency of 40 words per minute and 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.

#### 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).

#### Accreditation

The Health Information Technician Associate in Applied Science degree program at NDSCS is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), 233 N. Michigan Avenue, 21<sup>st</sup> Floor, Chicago, IL 60601-5800; telephone (312)233-1100. [www.cahiim.org](http://www.cahiim.org)

#### Program Goals and Student Learning Outcomes

Published in program handbook.

Revised: April 2018



## Health Information

### Medical Coding

#### ► Contact Information

Geralyn Matejcek, department chair  
 geralyn.matejcek@ndscs.edu  
 701-671-2269  
 Mayme Green Allied Health Center 213H

#### ► 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. The median annual wage was \$38,040 in May 2016.

Coding guidelines will be studied in detail, as well as concepts in insurance and reimbursement concepts, including payment systems.

Students can easily continue their education by completing the additional courses in the Health Information Technician AAS degree program option. Additional coding certifications are desirable after the graduate attains work experience, for further advancement in the profession.

#### Practicum

Academic training includes online learning laboratories. At the end of the program, students will complete a capstone virtual practicum, coding a variety of types of authentic health records, using encoder/grouping software.

#### Delivery Options

The program is available both online and in a traditional campus environment. Online students complete all courses online, while on-campus students complete HIT prefix courses online and most related/general education courses in a traditional classroom.

Transfer credit will be evaluated per college policy.

#### 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](http://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. Minimum keyboarding competency of 40 words per minute and computer skills including ability to use email, upload and download files, install software and navigate the internet. The program is sequenced with pre/co-requisites.

Course Code	Course Title	Credits
HIT 176	Introduction to Health Information	4
HIT 180	Pathopharmacology	3
HIT 184	Basic Diagnosis Coding	3
HIT 185	Basic Procedure Coding	3
HIT 285	Reimbursement Methodologies	3
HIT 286	Intermediate Diagnosis Coding	3
HIT 287	Computer Applications in Healthcare	3
HIT 288	Intermediate Procedure Coding	3
HIT 197C	Practicum	2

#### Related/General Education Courses

BIOL 220**	Anatomy and Physiology I	3
BIOL 221**	Anatomy and Physiology II	3
BOTE 171	Medical Terminology	4
CSCI 116	Business Use of Computers	3
FYE 101	Science of Success	1
<b>Total Required Credits</b>		<b>41</b>

\*\*BIOL 220L and BIOL 221L are recommended for students who are planning to complete a transfer degree at a later time.

#### 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](http://www.ahima.org))

#### Program Approval Statement

The North Dakota State College of Science Medical Coding program option is approved by the AHIMA Professional Certificate Approval Program. This designation acknowledges the coding program as having been evaluated by a peer review process against a national minimum set of standards for entry-level coding professionals. This process allows academic institutions to be acknowledged as offering an approved coding certificate program.

#### "Value for Students" Statement

The AHIMA Professional Certificate Approval Program designation:

- Identifies specialized programs that meet established coding educational standards.
- Stimulates improvement of educational standards through faculty development opportunities, and by involving faculty and staff in program evaluation and planning.
- Promotes a better understanding of the goals of professional coding education.
- Provides reasonable assurance that practitioners possess the necessary job skills upon entry into the profession.

#### Timeframe of Program Approval

April of 2015 to April 30, 2018 with annual interim approval during these years.

#### Program Goals and Student Learning Outcomes

Published in program handbook.

Revised: April 2018



# 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4

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.

Course Code	Course Title	Credits
<b>Certificate</b>		
REFG 101	Refrigeration Technology	3
REFG 102	Refrigeration Technology	3
REFG 104	Refrigerants: Chemistry and Ecology	1
REFG 110	Blueprint Reading and Estimating	2
REFG 111	Fabrication Lab	2
REFG 112	Domestic and Residential Systems Lab	2
REFG 113	Refrigeration Systems Lab	2
REFG 121	Electrical Theory I	3
REFG 122	Electrical Theory II	3
REFG 123	Electrical Lab I	2
REFG 124	Electrical Lab II	2
REFG 253	Heating Equipment Theory	2
REFG 255	Heating Equipment Lab	3

### Associate in Applied Science

REFG 201	Refrigeration Technology	3
REFG 202	Refrigeration Technology	3
REFG 211	Commercial Components Lab	2
REFG 212	Advanced Systems Lab	2
REFG 226	Building System Controls	3
REFG 231	Air Conditioning Design	3
REFG 232	Air Conditioning Design	3
REFG 254	Heat Pump Lab	2
REFG 256	Hydronic Heating Systems	3

### Related/General Education Courses

<b>Certificate</b>		
ENGL 105	Technical Communications	3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		2
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
FYE 101	Science of Success	1

### Associate in Applied Science

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Elective (HPER 210 recommended)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
FYE 101	Science of Success	1

<b>Total Required Credits for Certificate</b>	<b>36</b>
<b>Total Required Credits for Associate in Applied Science</b>	<b>73</b>

Revised: May 2018



## Information Technology Support / Information Systems Administrator

### ► Contact Information

John Kroshus, associate professor  
john.kroshus@ndscs.edu  
701-671-2115  
NDSCS-Fargo 138

### ► Delivery Methods

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

Because we live in an IT oriented society, Information Systems Administrator offers a world-wide job market with a variety of locations and environments. Computers and networks are used in all types of businesses, banks, accounting firms, hospitals, manufacturing companies, insurance companies, sales companies, etc. The placement record in this program has been excellent.

For students wishing to pursue a bachelor's degree at a four-year college or university, please see the Computer Science or Management Information Systems Liberal Arts transfer curriculum plans listed in the Liberal Arts section of this catalog.

### Program purposes

- To provide students with the knowledge of computer and network training enabling them to configure and install systems.
- To provide students with the knowledge and skills necessary to assist management in the selection of computer hardware and software.
- To provide students with the knowledge of computer networks enabling them to configure and install them.
- To prepare students to pursue a third-year option in Web Design or IT Forensics and Security (see additional program purposes listed under Web Design emphasis or IT Forensics and Security emphasis).

### Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

All Information and Communications Technology students are required to purchase laptop computers. These laptops give students adequate computer access to complete projects and assignments given in class.

### Instruction

The instructors for this program have formal educational training, industry training and certifications and work experience in Information Technology. Laboratory time is scheduled into each student's program allowing them to receive individual attention and hands-on computer experience.

NOTE: This program requires 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Composite – 17	Reading Comp – 85
	WritePlacer – 5
	Elementary Algebra – 41

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)

Course Code	Course Title	Credits
CIS 128	IT Essentials I	3
CIS 129	IT Essentials II	3
CIS 164	Networking Fundamentals I	4
CIS 165	Networking Fundamentals II	4
CIS 191	First Year Seminar	1
CIS 197	Internship	1
CIS 212	Microsoft Windows Operating System Client	3
CIS 220	Operating Systems (UNIX)	3
CIS 244	Web Server Management	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
PHIL 210	Ethics	3
<b>Total Required Credits for Certificate</b>		<b>32</b>

After certificate courses are completed, below are the required courses for the Information and Communications Technology A.A.S. with emphasis in Information Systems Administrator degree

Course Code	Course Title	Credits
CIS 180	HTML and CSS	3
CIS 215	Implementing a Microsoft Windows Server Environment	4
CIS 216	Implementing a Microsoft Windows Network Infrastructure	4
CIS 267	Intermediate Networking I	4
CIS 268	Intermediate Networking II	4
CIS 279	Security Awareness and Policy	1
CSCI 160	Computer Science I	4
Wellness Elective(s)		2
ND:MATH		3
ENGL/COMM Elective		3
Social and Behavioral Science, Humanities and History Electives		2
<b>Total Required Credits for Associate</b>		<b>66</b>

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 2018

## IT Forensics and Security

### ► Contact Information

John Kroshus, associate professor  
john.kroshus@ndscs.edu  
701-671-2115  
NDSCS-Fargo 138

### ► Delivery Methods

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

Course Code	Course Title	Credits
CIS 128	IT Essentials I	3
CIS 129	IT Essentials II	3
CIS 164	Networking Fundamentals I	4
CIS 241	IT Forensics I	4
CIS 242	IT Forensics II	4
CIS 280	Fundamentals of Network Security I	4
CIS 282	Computer System Security	4
CIS 284	Managing Network Security	4
ENGL/COMM	Elective	3
FYE 101	Science of Success	1
PHIL 210	Ethics	3

**Total Required Credits** **37**

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:

<u>ACT</u>	<u>ACCUPLACER</u>
Composite – 17	Reading Comp – 85
	WritePlacer – 5
	Elementary Algebra – 41

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.*

### 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.

Revised: May 2018



# Information and Communications Technology

## 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. Web sites 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 Web sites that bring benefits to their intended users.

Formal education and real world experience form a good basis for the development of a capable designer. This curriculum will enlarge student's skill sets and knowledge bases which will assist in the ability to analyze, create and revise Web sites.

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**

Students in this program are **required** to purchase a laptop computer for classes. Wireless communication is used to keep students linked to the Internet and to other NDSCS campus computing facilities. These facilities are available seven days per week, 24 hours per day. This gives students adequate time to complete computer related projects and assignments.

**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.

**Web Design (Certificate)**

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

**Total Required Credits for Certificate 32**

**After certificate courses are completed, below are the required courses for the Information and Communications Technology A.A.S. with emphasis in Web Developer degree**

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

**Total Required Credits for Associate 65-66**

**Admission Requirements\***

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are keyboarding, Internet classes and any publication type class.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Composite – 17	Reading Comp – 85
	WritePlacer – 5
	Elementary Algebra – 25
	Arithmetic – 51

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.

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

**Award**

Upon successful completion of the required courses for the certificate, students will be awarded a certificate in Information and Communications Technology with an emphasis in Web Design.

Upon successful completion of the required courses for the degree, students will be awarded an Associate in Applied Science degree in Information and Communications Technology with an emphasis in Web Developer.

Revised: May 2018



# John Deere Tech

## John Deere Tech

### ► Contact Information

Larry Ascheman, program coordinator  
larry.ascheman@ndscs.edu  
701-671-2213  
Tech Center 71

### ► Delivery Methods

Face-to-Face: Wahpeton

The John Deere Tech program is designed to develop technically competent, professional ag equipment service technicians. The John Deere Company sponsors the program and NDSCS administers and operates the program.

This unique program combines state-of-the-art, on-campus training with supervised occupational experiences at a sponsoring John Deere dealership. Students receive technical training on John Deere equipment and related products through a combination of classroom instruction and hands-on laboratory experiences. Classroom and laboratory instruction at NDSCS covers the basics of each subject plus the latest developments in John Deere's agricultural equipment. Work experience at the dealership reinforces on-campus training and exposes the student to real life failures and repairs as they occur on the equipment.

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

The John Deere Tech program takes six semesters, or approximately 24 months, to complete. The six semesters are divided into 10 terms, each approximately eight weeks in length. Students complete the second, third, fourth, sixth, seventh, ninth and tenth terms on campus and the first, fifth, and eighth terms at a sponsoring John Deere dealership.

### Admission Requirements:

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Or transfer equivalencies will apply as appropriate	

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

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

### Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in John Deere Tech.

Course Code	Course Title	Credits
DTEC 109	Air Conditioning for Diesel Technology	2
DTEC 115	Introduction to Light and Medium Duty Engines	4
JDAT 105	Supervised Occupational Experience I	2
JDAT 106	John Deere Time Service Management	2
JDAT 110	Supervised Occupational Experience II	5
JDAT 114	Supervised Occupational Experience III	5
JDAT 116	John Deere Equipment Operation and Adjustment	4
JDAT 155	Introduction to Electrical Electronics	4
JDAT 165	Introduction to John Deere Hydraulic Systems	4
JDAT 215	John Deere Engine Rebuild	6
JDAT 225	John Deere Powertrains	7
JDAT 255	John Deere Electrical/Electronics	5
JDAT 260	Introduction to Ag Management Solutions (AMS)	3
JDAT 265	John Deere Tractor Hydraulic Systems Diagnosis	5
MFGT 110	Industrial Shop Practices	2

### Related/General Education Courses

BADM 240	Sales	3
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2
Wellness Elective(s)		2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
FYE 101	Science of Success	1

**Total Required Credits** **82**

NOTE: 81 credits include two summer sessions

## Land Surveying and Civil Engineering Technology

### ► Contact Information

Jeff Jelinek, program coordinator  
 Jeff.jelinek@ndscs.edu  
 701-671-2268  
 Horton Hall 242

### ► Delivery Methods

Face-to-Face: Wahpeton  
 Online: Some classes

The Land Surveying and Civil Engineering Technology program is designed to prepare students for work as engineering and surveying technicians in construction-related industries, allowing graduates to work in a broad range of jobs such as 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 jobs 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 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 \$1,800. For further information, call Jeff Jelinek, Land Surveying and Civil Engineering Technology program coordinator, at 701-671-2268.

Course Code	Course Title	Credits
CAD 120	Introduction to AutoCAD	3
CT 111	Civil Plans and Specifications	2
CT 113	Introduction to Civil Design Applications	3
CT 121	Plane Surveying	4
CT 122	Advanced Surveying	4
CT 132	Material Testing/Quality Control	4
CT 142	Construction Safety for Civil Technicians	1
CT 211	Introduction to Geographic Information Systems	3
CT 212	GIS Applications	3
CT 214	Highway and Street Design	3
CT 215	Land Use Planning and Development	3
CT 221	Surveying Procedures	4
CT 222	Advanced Surveying Procedures	4
CT 223	Boundary Control and Legal Principles	3
CT 224	Research and Analysis	3
CT 235	Water Resource Technology	3
CT 261	Machine Control and Project Layout	2
UAS 111	Introduction to UAS	2

### Related/General Education Courses

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

**Total Required Credit** **73**

### 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	ACCUPLACER
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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.

Revised: May 2018

## Liberal Arts

### Agriculture Transfer

#### ► Contact Information

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

#### ► Delivery Methods

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

The Agriculture transfer curriculum plan is designed for students who plan to continue their studies toward a bachelor's degree in agriculture from one of the area universities. Since degree requirements of various transfer institutions differ, students should consult an advisor and the catalog of the college to which they plan to transfer so they can determine specific course requirements and transfer policies. Their NDSCS agriculture advisor will assist them with the transfer process.

Students will take a mixture of agriculture and general education courses while at NDSCS that will assist them in meeting the requirements of their anticipated degree. Smaller class size enables a successful beginning towards completion of a bachelor's degree.

Its 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
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
PLSC 110	World Food Crops	3
PLSC 225	Principles of Crop Production	3
SOIL 210	Introduction to Soil Science	3
AGEC 242	Introduction to Agricultural Management	3
	Free Electives	4
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Math, Science and Computer Information Systems Electives	9
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Required:	
ECON 201	Principles of Microeconomics (3)	
ECON 202	Principles of Macroeconomics (3)	
	*Agriculture and General Education Electives	15
	<b>Total Required Credits</b>	<b>66</b>

\*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.



## Liberal Arts

### Biotechnology Transfer

#### ► Contact Information

Dr. Bill Shay, associate professor  
william.shay@ndscs.edu  
701-671-2341  
Haverty Hall 228

#### ► Delivery Methods

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

The biotechnician has a diversified education in biology, chemistry and physics. While a few entry-level jobs are available to biotechnicians with an A.S. or B.S. degree, most often the undergraduate Biotechnology curriculum is used as a stepping-stone to a M.D., M.S. or Ph.D. degree. A biotechnician with an A.S. or B.S. degree generally performs routine tasks and analytical procedures under the supervision of the research scientist.

Students choosing this plan should consult with the Mathematics and Science Department in selecting their courses since future plans of study at a four-year college may have specific requirements. In addition, a student should contact the college or university of their choice to confirm a list of recommended courses.

Students entering Biotechnology who do not have the proper prerequisites may need additional preparatory classes.

The Biotechnology transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Biotechnology transfer curriculum plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>68</b>

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, mathematics, physics and English. Courses that develop reading and communications skills are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## 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
	Wellness Elective(s)	2
PSYC 111	Introduction to Psychology	3
SOC 110	Introduction to Sociology	3
	Humanities/History Electives	6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Required:		
PHIL 210	Ethics (3)	
	Math, Science and Computer Information Systems Electives	13
CSCI 116	Business Use of Computers (3)	
MATH 103	College Algebra (3)	
MATH 210	Elementary Statistics (3)	
	Lab Science Elective (4)	
	General Requirements	15
ACCT 215	Business in the Legal Environment (3)	
BADM 201	Principles of Marketing (3)	
BADM 202	Principles of Management (3)	
BADM 251	Personal Finance (3)	
BUSN 120	Fundamentals of Business (3)	
<b>Total Required Credits</b>		<b>66</b>

\*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 2018





## Liberal Arts

### Chemistry Transfer

#### ► Contact Information

Dr. Bill Shay, associate professor  
william.shay@ndscs.edu  
701-671-2341  
Haverty Hall 228

#### ► Delivery Methods

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

The Chemistry transfer curriculum is designed for students planning a career in chemistry or a related field that would benefit from a strong background in the physical sciences and mathematics. Successful completion of the curriculum will allow the student to transfer to a four-year chemistry program or to four-year programs in the physical sciences or engineering.

This degree plan is designed to provide students with a more accurate representation of the course sequences taken during the first two years of a four-year degree program in either chemistry or mathematics.

Students choosing this plan should consult with the Mathematics and Science Department in selecting their courses since future plans of study at a four-year college may have specific requirements. In addition, a student should contact the college or university of their choice to confirm a list of recommended courses.

Upon completion of this program, the student is awarded an Associate in Science degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
or ENGL 125	Introduction to Professional Writing (3)	
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
PHYS 251	University Physics I	4
PHYS 251L	University Physics I Lab	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Lab	1
	Computer Information System Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
<b>Total Required Credits</b>		<b>70</b>

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading NDUS: General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful course to prepare for this program are biology, chemistry, computer science, English, mathematics and physics.

Courses that develop reading and communication skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## Liberal Arts

### Chiropractic Transfer

#### ► Contact Information

Shannon King, department chair  
shannon.king@ndscs.edu  
701-671-2296  
Haverty Hall 213

#### ► Delivery Methods

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

Chiropractors are health practitioners who treat patients primarily by manual manipulation of parts of the body, especially the spinal column. This approach to health care is based upon the principle that interference with the nervous system impairs normal functions and lowers resistance to disease. Chiropractic manipulation is intended to assist the nervous system to function properly.

All chiropractic colleges require three years of undergraduate study, including courses in English, social sciences, biology, general and organic chemistry, physics, mathematics, English and humanities. The course in chiropractic college is generally an additional four years. Most offer a broad curriculum, including subjects such as physiotherapy and nutrition. In most chiropractic colleges the first two years consist of classroom and laboratory work while the last two years stress clinical work with patients. The degree awarded upon completion is Doctor of Chiropractic (D.C.).

Students entering the Chiropractic transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Chiropractic transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, chemistry, chemistry health service option and natural science.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 105	Trigonometry	2
or MATH 165	Calculus I (4)	
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
Computer Information Systems Elective		2
<i>From any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Sciences Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Required:		
PSYC 111	Introduction to Psychology (3)	
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>66 (68)</b>

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 2018



## Liberal Arts

### Clinical Laboratory Science Transfer

#### ► Contact Information

Shannon King, department chair  
shannon.king@ndscs.edu  
701-671-2296  
Haverty Hall 213

#### ► Delivery Methods

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

Clinical laboratory scientists are laboratory professionals who apply scientific skills and knowledge to a variety of complex diagnostic and therapeutic procedures.

Clinical Laboratory Science has increased in scope and importance in recent years. Although they are trained in all areas of laboratory work, they often specialize in an area such as blood banking, hematology, microbiology, urinalysis or nuclear medicine technology.

Preparation for a career in Clinical Laboratory Science involves three years of academic study in an undergraduate program and one year of clinical study in a professional program. Academic work will include chemistry, organic chemistry, biology, microbiology, zoology, English, physics, anatomy/physiology, statistics, psychology, social sciences, speech, mathematics and humanities.

Students entering the Clinical Laboratory Science transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes. The Mathematics and Science Department highly recommends the completion of sequential series of courses.

The Clinical Laboratory Science transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 103	College Algebra	3
MATH 105	Trigonometry	2
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
Computer Information Systems Elective		2
<i>From any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Sciences Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>69</b>

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics and English. Courses that develop reading and communications skills also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## Liberal Arts

### Computer Science Transfer

#### ► Contact Information

Rick Hendrickson, associate professor  
rick.hendrickson@ndscs.edu  
701-231-6989  
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.

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	4
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
Wellness Elective(s)		2
MATH 165	Calculus I	4
MATH 166	Calculus II	4
CIS/CSCI or General Electives*		6
FYE 101	Science of Success	1
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Science Electives		8
<i>Any course marked ND:LABSC</i>		
Social and Behavioral Sciences Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Required:		
ECON 201	Principles of Microeconomics (3)	

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

\*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are upper level mathematics classes.

#### Award

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

Revised: May 2018



## Liberal Arts

### Criminal Justice Transfer

#### ► Contact Information

Dr. Kelly Wolf, instructor  
kelly.wolf@ndscs.edu  
701-671-2142  
Old Main 440

#### ► Delivery Methods

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

This transfer curriculum plan is available to the student whose goal is a career in the justice system. This plan is for the student who wishes to complete the Associate in Arts degree at NDSCS, transfer directly to a four-year college or university to complete the bachelor's degree in criminal justice, and then complete the one semester Peace Officer Training (or other specific academy for their chosen area of criminal justice). The Criminal Justice transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English and humanities, math, physical sciences, social and behavioral sciences, humanities 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. Marshal Service, ATF, Secret Service and DEA.

The Criminal Justice transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

NOTE: For those students interested in becoming license eligible as peace officers in the State of N.D., a collaboration agreement has been made between NDSCS and Lake Region State College (LRSC). LRSC offers Peace Officer Training (20 credits; NDSCS graduates take 17 of those credits) in Devils Lake, Minot, Grand Forks and Fargo. Upon completion of Peace Officer Training, the student would be license eligible as a peace officer in the State of N.D. and may choose to continue their education towards a bachelor's degree at a four-year college.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
HIST 103	United States History to 1877	3
and HIST 104	United States History Since 1877	3
or HIST 101	Western Civilization I	
and HIST 102	Western Civilization II	
Wellness Elective(s)		2
PHIL 210	Ethics	3
Math, Science and Computer Information Systems Electives		13
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>		
Required:		
BIOL 115	Human Structure and Function (3)	
BIOL 115L	Human Structure and Function Lab (1)	
CIS 101	Computer Literacy (2)	
or CSCI 116	Business Use of Computers (3)	
MATH 210	Elementary Statistics (3)	
Social and Behavioral Science Electives*		31
<i>From any course with CJ, POLS, PSYC or SOC prefixes within the category marked ND:SS</i>		
Required:		
CJ 160	The Legal System (4)	
CJ 201	Introduction to Criminal Justice (3)	
CJ 232	Administration of Justice (3)	
CJ 297	Internship (1-4)	
POLS 115	American Government (3)	
POLS 116	State and Local Government (3)	
PSYC 111	Introduction to Psychology (3)	
SOC 110	Introduction to Sociology (3)	
SOC 115	Social Problems (3)	
FYE 101	Science of Success	1

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

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

\* Suggested Electives:

POLS 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.

#### 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 2018

## Liberal Arts

### Dental Transfer

#### ► Contact Information

Dr. Bill Shay, associate professor  
william.shay@ndscs.edu  
701-671-2341  
Haverty Hall 228

#### ► Delivery Methods

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

Dentistry is a demanding profession. Academic preparation for dentistry is long and rigorous. The dental schools in the United States have no uniform requirements for pre-professional study. They do, however, recommend a bachelor's degree and a broad, general education that includes basic science requirements and the development of skills in reading, writing and speaking. Course work must be completed in biology/zoology, general chemistry, organic chemistry, physics, mathematics and English.

Students are chosen for admission to dental school primarily on the basis of their undergraduate grades and scores on the Dental Admission Test. Most dental schools require an interview and all require recommendations. Students should keep in mind, however, that only a certain percentage of dental school applicants are accepted. Therefore, it is important to select a major that will prepare you to pursue alternative career goals for occupational flexibility.

Students entering the Dental transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Dental transfer curriculum plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
(CHEM 260)	(**Elements of Biochemistry) (4)	
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 105	Trigonometry	2
or MATH 165	Calculus I (4)	
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
	Computer Information Systems Elective	2
	<i>From any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
<b>Total Required Credits</b>		<b>66 (68)</b>

\*\*The University of Minnesota also requires CHEM 260 Elements of Biochemistry.

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 2018



## Liberal Arts

### Early Childhood Education Transfer

#### ► Contact Information

Jane Krump, department chair  
jane.krump@ndscs.edu  
701-671-2370  
Old Main 442

#### ► Delivery Methods

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

This transfer curriculum plan is available to the student whose goal is a career in early childhood education, child development, family science or related fields.

Employment opportunities include parent and family life educators, extension agents, child protection service professionals, financial counselors, nursing home activity directors, credit specialists, probation agents, directors of child care licensing and hospital child life specialists.

The Early Childhood Education transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English, humanities, math, physical sciences, social and behavioral sciences, and wellness. All colleges and universities require these core courses for students seeking a bachelor's degree.

Upon completion of the program, the student is awarded an Associate in Arts degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Recommended:		
**ENGL 238	Children's Literature (3)	
Wellness Elective(s)		2
MATH 103	College Algebra	3
CSCI 116	Business Use of Computers	3
BIOL 111	Concepts of Biology	3
BIOL 111L	Concepts of Biology Lab	1
Math, Science and Computer Information Systems Electives		3
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
PSYC 111	Introduction to Psychology	3
PSYC 210	Child Development	3
PSYC 250	Developmental Psychology	3
SOC 110	Introduction to Sociology	3
SOC 220	Family	3
General Education Electives*		14
Recommended:		
HPER 217	Personal and Community Health (3)	
PHIL 210	Ethics (3)	
SOC 115	Social Problems (3)	
SOC 221	Minority Relations (3)	
Free Electives		5
Recommended:		
HPER 210	First Aid and CPR ( <i>Professional/Community</i> ) (2)	
**EDUC 250	Introduction to Education (3)	

**TOTAL REQUIRED CREDITS 65**

\*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

\*\*This course is recommended and is taught collaboratively via Bismarck State College and Mayville State University.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

#### Award

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

Revised: May 2018

# Liberal Arts

## Education Transfer

### ► Contact Information

Wade King, department chair  
wade.king@ndscs.edu  
701-671-2317  
Haverty Hall 215

### ► Delivery Methods

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

Students entering the Education transfer curriculum plan at NDSCS are exposed to a wide range of courses and disciplines. Upon completion of the requirements, students are awarded the Associate in Arts degree. Students then transfer to other colleges or universities to take their education courses and to student teach.

Kindergarten, elementary and secondary school teaching requires a wide variety of skills and aptitudes, including a talent for working with children; organizational, administrative and recordkeeping abilities; research and communication skills; the power to influence, motivate and train others; patience; and creativity. Preparing students for the future workforce is the major stimulus generating the changes in education. To be prepared, students must be able to interact with others, adapt to new technology, and to think logically through problems. Teachers provide the tools and environment for their students to develop these skills.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

### Suggested courses:

#### Math education majors

	Credits
MATH 103	3
MATH 165	4
MATH 166	4
MATH 265	4
MATH 266	3

#### HPER education majors

Please refer to the Health, Physical Education and Recreation transfer curriculum plan section.

#### Music education majors

Please refer to the Music transfer curriculum plan section.

#### Science education majors

	Credits
BIOL 150 and 150L	3/1
BIOL 151 and 151L	3/1
PHYS 211 and 211L	4/1
PHYS 212 and 212L	4/1
MATH 165	4
MATH 166	4
PHYS 251	5
PHYS 252	5

#### Social Science education majors

	Credits
ECON 201	3
HIST Elective(s)	3

#### Social Science electives

	Credits
ECON 202	3
POLS/HIST Elective(s)	3
PSYC 250	3
PSYC 270	3
SOC 220	3
SOC 221	3

#### Elementary education majors

	Credits
MUSC 101	3
MATH 103	3
HPER 210	2
BIOL 111 and 111L	3/1
Lab Science Elective (s)	3/1

#### All majors

	Credits
**EDUC 250	2
**EDUC 298	1

\*\*EDUC 250 and EDUC 298 are collaborative online courses introducing the student to working in education. They are offered by Mayville State University or other NDUS institutions. They can be taken as recommended free electives.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
HIST 103	United States History to 1877	3
HIST 104	United States History Since 1877	3
	Wellness elective(s)	2
POLS 115	American Government	3
	Political Science or History Elective	3
	<i>Any course marked ND:POLS or ND:HIST</i>	
PSYC 111	Introduction to Psychology	3
PSYC 210	Child Development	3
PSYC 230	Educational Psychology	3
SOC 110	Introduction to Sociology	3
SOC 115	Social Problems	3
	General Education Electives*	10
	English Literature	3
	<i>Any ND:HUM course with the ENGL prefix</i>	
	Math, Science and Computer Information Systems Electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	

### 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 2018





## Liberal Arts

### Emergency Management 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 transfer curriculum plan is available to the student whose goal is a career in emergency management or related fields.

Emergency management addresses natural and technological disasters, and homeland security. Career opportunities are available in city, county, state and federal government, as well as voluntary organizations and private businesses.

The Emergency Management transfer plan at NDSCS includes the freshman and sophomore core courses in English, humanities, math, physical sciences, social and behavioral sciences, and wellness. All colleges and universities require these core courses for students seeking a bachelor's degree.

Upon completion of the program, the student is awarded an Associate in Arts degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Humanities/History Electives	6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
	Wellness Elective(s)	2
MATH 103	College Algebra	3
	or MATH 104 Finite Mathematics	
MATH 210	Elementary Statistics	3
CSCI 116	Business Use of Computers	3
	Lab Science Course	4
<i>From any course marked ND:LABSC</i>		
SOC 110	Introduction to Sociology	3
	Social and Behavioral Science Electives	6
<i>From two different prefixes within the category marked ND:SS</i>		
Recommended:		
PSYC 111	Introduction to Psychology (3)	
PSYC 250	Developmental Psychology (3)	
SOC 115	Social Problems (3)	
SOC 220	Family (3)	
SOC 221	Minority Relations (3)	
ECON 201	Microeconomics (3)	
ECON 202	Macroeconomics (3)	
POLS 115	American Government (3)	
POLS 116	State and Local Government (3)	
	General Education Electives*	25
<i>Recommended from Social Science Electives listed above or Science Electives</i>		
<b>Total Required Credits</b>		<b>65</b>

\*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 2018

## Liberal Arts

### Engineering Transfer

#### ► Contact Information

Larry Merbach, professor  
larry.merbach@ndscs.edu  
701-671-2231  
Haverty Hall 214

#### ► Delivery Methods

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

Engineers are innovators who take a fresh look at science and technology in order to apply old knowledge to finding solutions to new problems. Fields in engineering are expanding rapidly to meet the needs of society and advances in sciences.

An engineering schedule is difficult due to the number of classes taken within a semester and to the problem-oriented nature of the course work. It is estimated that for an incoming freshman class at a major university, only one-fourth of those students will receive a degree in engineering. Anyone who feels intimidated by a large school definitely should consider NDSCS to start their studies. Successful completion of the curriculum will allow the student to transfer to a four-year engineering program.

Students entering the Engineering transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Engineering plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to engineering, other programs that a student may transfer into are chemistry, physics, astronomy, geology and mathematics.

Course Code	Course Title	Credits
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
*ENGR 212	Fundamentals of Visual Communications	3
FYE 101	Science of Success	1
**MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
MATH 266	Introduction to Differential Equations	3
PHYS 251	University Physics I	4
PHYS 251L	University Physics I Lab	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Lab	1
	Computer Information Systems Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Recommended:	
	PHIL 210 Ethics (3)	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Recommended:	
	ECON 201 or 202 Microeconomics/Macroeconomics (3)	
	Wellness Elective	2
	<b>Total Required Credits</b>	<b>66</b>

Engineering courses are offered by collaboration with University of North Dakota (UND) – Statics, Dynamics and Introduction to Engineering.

\*MATH 227 Applied Linear Algebra (3 credits) is recommended by both UND and NDSU as a course suited for students entering their Engineering Department.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

\*Offered even years.

\*\*What mathematic route a student takes will depend on their ACT or Accuplacer math score.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018



## Liberal Arts

### General Liberal Arts Transfer

#### ► Contact Information

Wade King, department chair  
wade.king@ndscs.edu  
701-671-2317  
Haverty Hall 215

#### ► Delivery Methods

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

This option is available to the student whose goal is a bachelor's degree, but who may be unsure of his or her major. It includes first and second year core courses in a variety of areas including English and humanities, math, natural and physical sciences, social and behavioral sciences, computer information systems, and physical education. Most four-year colleges and universities require these core courses. Upon completion of the program, the student is awarded an Associate in Arts degree or an Associate in Science degree, which allows transfer to most four-year colleges and universities as a junior.

The General Liberal Arts transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

All instructors in the Liberal Arts area have graduate-level educational training in their field of expertise. The majority of the faculty in the Arts, Science and Business Division hold Master of Arts, Master of Science or doctorate degrees. The faculty also serves as student advisors to aid students in planning programs, setting up schedules, registering for classes and ultimately deciding on a major. Career counseling is also available to help students make decisions.

Employment opportunities for the liberal arts student ultimately depend on the specialty or major the individual eventually pursues. Liberal arts provides maximum flexibility and transfer opportunities for a variety of programs and occupations. While the number of possibilities is far too numerous to list, counselors and faculty members are available to meet with students to discuss future plans, even if the student is not currently enrolled.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
	Electives* (free)	7
	General Education Electives**	19
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Math, Science and Computer Information Systems Electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Social and Behavioral Sciences Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	

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

\* Consult your advisor for course selection of free electives.

\*\* Consult academic advisor in selecting electives that are most appropriate for the intended A.A. or A.S. degree for transfer to a bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## Liberal Arts

### General Studies Transfer

#### ► Contact Information

Dennis Broderick, academic counselor  
dennis.a.broderick@ndscs.edu  
701-671-2263  
Old Main 110C

#### ► Delivery Methods

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

The General Studies transfer curriculum plan is designed to allow students the flexibility to complete a course of study, which fits with his or her interests and goals in life. The General Studies plan serves students who wish to develop unique courses of study at NDSCS and is available to students who begin their studies at NDSCS as undeclared/undecided, pre-allied health, high school and dual-credit students, and part-time students not pursuing a liberal arts transfer degree.

The General Studies transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

NOTE: This plan is not intended to substitute for a Liberal Arts transfer curriculum plan.

#### Career planning and advising

For students who are undecided on their career plans, career-counseling services are available to help identify realistic career and education goals.

Faculty and staff will serve as student advisors to aid students in planning their programs, setting up schedules, registration and ultimately deciding on a major.

Course Code	Course Title	Credits
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
	Wellness Elective(s)	2
	Humanities/History Electives	6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
	Math, Science and Computer Information Systems Electives	13
<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>		
	Social and Behavioral Sciences Electives	8
<i>From two or more prefixes within the category marked ND:SS</i>		
	Electives*	26
<b>Total Required Credits</b>		<b>65</b>

\*Must be 100 level or higher. Consult academic advisor for appropriate course selection.

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 who are unable to meet the high school graduation requirement may apply for consideration as a "special student" and may be admitted on a probational basis. 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 Science degree in Liberal Arts.

Revised: May 2018



## 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 ( <i>Professional/Community</i> )	2
HPER 217	Personal and Community Health	3
	Wellness Elective(s)	2
	General Education Electives*	12
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Math, Science and Computer Information Systems Electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Required:	
BIOL 220	Anatomy and Physiology I (3)	
BIOL 220L	Anatomy and Physiology I Lab (1)	
CIS 101	Computer Literacy (2)	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Required:	
PSYC 111	Introduction to Psychology (3)	
PSYC 230	Educational Psychology (3)	
	<b>Total Required Credits</b>	<b>65</b>

\* Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## Liberal Arts

### Law Transfer

#### ► Contact Information

Jeff Hart, associate professor  
jeffrey.hart@ndscs.edu  
701-671-2342  
Old Main 435

#### ► Delivery Methods

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

This curriculum is available to the student whose goal is a juris doctor (J.D.) or bachelor of law (LL.B) degree. The Law transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English and humanities, math, physical sciences, social and behavioral sciences, humanities and physical education. All colleges and universities require these core courses for students seeking a bachelor's degree. An Associate in Arts degree is awarded upon completion of the program, and the student can transfer to most four-year colleges and universities as a junior. To be accepted into law school, the student must obtain a bachelor's degree from a four-year college or university.

The Law transfer curriculum plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
CSCI 116	Business Use of Computers	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
HIST 101	Western Civilization I	3
and HIST 102	Western Civilization II	3
or HIST 103	U.S. History to 1877 (3)	
and HIST 104	U.S. History Since 1877 (3)	
FYE 101	Science of Success	1
Lab Science Elective(s)		3/1
MATH 103	College Algebra	3
MATH 210	Elementary Statistics	3
PHIL 210	Ethics	3
Wellness Elective(s)		2
General Education Electives*		7
Social and Behavioral Science Electives**		24

*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.

Revised: May 2018



## Liberal Arts

### Management Information Systems Transfer

#### ▶ Contact Information

Rick Hendrickson, associate professor  
rick.hendrickson@ndscs.edu  
701-231-6989  
NDSCS Fargo 138

#### ▶ Delivery Methods

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

#### Program purposes

The Management Information Systems transfer curriculum plan provides articulation to baccalaureate programs in management information systems. In addition, this plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

#### Special qualifications

If you are creative, a logical thinker, pay attention to detail, are easily motivated, work well on your own, and are capable of sound decision-making, you are an excellent candidate for working in the computer area.

#### Facilities

NDSCS has hardware and networking labs. Each of these labs has current equipment and software.

Students in this program are required to purchase a laptop computer for classes. Wireless communication is used to keep students linked to the Internet and to other NDSCS campus computing facilities. These facilities are available seven days per week, 24 hours per day. This gives students adequate time to complete computer related projects and assignments.

#### 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.

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	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		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Science Electives		4
<i>Any course marked ND:LABSC</i>		
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>68</b>

\*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this curriculum are upper level mathematics classes.

#### Award

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

Revised: May 2018

## Liberal Arts

### Mathematics Transfer

#### ► Contact Information

Larry Merbach, professor  
larry.merbach@ndscs.edu  
701-671-2231  
Haverty Hall 214

#### ► Delivery Methods

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

The Mathematics transfer curriculum plan is specifically designed for those who are planning to obtain a bachelor's degree in mathematics at a four-year college or university. Students who choose this plan will not be limited to just mathematics, since it will lay the foundation for many other college majors that rely on mathematics, such as actuarial science, chemistry, computer science, engineering, or physics.

Students choosing this plan should consult with the Mathematics and Science Department in selecting their lab science sequence and electives since future plans of study at a four-year college may have specific requirements. In addition, a student should contact the college or university of their choice to confirm a list of recommended courses.

One career opportunity for a person who has a bachelor's degree in mathematics is an actuary. An actuary will assess risk using mathematical and statistical methods and is often employed by insurance and financial institutions. An actuary needs to pass a series of professional exams dealing with probability and statistics, finance and economics. Students interested in a future career as an actuary may find ACCT 200, ACCT 201, ECON 201, ECON 202 and other electives in business, economics and statistics useful.

Upon completion of this program, the student is awarded the Associate in Science degree which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
CSCI 160	Computer Science I	4
ENGL 110	College Composition I	3
ENGL 120	*College Composition II	3
ENGL 125	*Introduction to Professional Writing	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 227	Applied Linear Algebra	3
MATH 265	Calculus III	4
MATH 266	Introduction to Differential Equations	3
General Education Electives**		6
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Science Electives***		8
<i>From any course marked ND:LABSC</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2

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

\*Either ENGL 120 or ENGL 125, but not both, may be replaced with an alternative elective with the approval of the Mathematics and Science Department.

\*\* Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

\*\*\*It is 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.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful course to prepare for this program are biology, chemistry, computer science, English, mathematics and physics.

Courses that develop reading and communication skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018





## Liberal Arts

### Medical Transfer

#### ► Contact Information

Dr. Bill Shay, associate professor  
william.shay@ndscs.edu  
701-671-2341  
Haverty Hall 228

#### ► Delivery Methods

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

Medicine is a demanding profession. Academic preparation for a career in human medicine is among the longest and most rigorous of all professions. More than 120 accredited medical schools in the United States have no uniform requirements for pre-professional study. They do, however, recommend a bachelor's degree and a broad, general education that includes basic science requirement and the development of skills in reading, writing and speaking. Course work must be completed in biology/zoology, general chemistry, organic chemistry, physics, mathematics and English.

Students are chosen for admission to medical school primarily on the basis of their undergraduate grades, scores on the Medical Admission Test, recommendations and an interview. You should keep in mind only a fraction of the applicants are accepted. It is, therefore, important to select a major that will prepare you to pursue alternative career goals for occupational flexibility.

Students entering the Medical transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

This plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Medical transfer curriculum plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry, environmental science, wildlife biology, agriculture, natural science and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
or CHEM 260	Elements of Biochemistry (4)	
and CHEM 260L	Elements of Biochemistry Lab (1)	
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 105	Trigonometry	2
or MATH 165	Calculus I (4)	
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
Computer Information Systems Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>66 (68)</b>

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 2018

## Liberal Arts

### Music Transfer

#### ► Contact Information

Bryan Poyzer, program coordinator  
bryan.poyzer@ndscs.edu  
701-671-2872  
Stern Cultural Center 132

#### ► Delivery Methods

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

The NDSCS Performing Arts program has four purposes. It allows students to enjoy music and develop their skills by being in performing groups. It provides general education courses that transfer to colleges or universities. It provides a core curriculum for students planning a music major. Finally, it makes artistic contributions to the campus and community.

Performing groups open to most students include concert band and concert choir. From them, students can participate in jazz band and various vocal ensembles. Students are provided with state-of-the-art sound equipment for the touring Wildcat Singers and Wildcat Jazz Band. The Harry Stern and Ella Stern Cultural Center is one of the best auditoriums in the area. Students also may be in small performing groups or take private lessons.

Students of all abilities are welcome in the music program, whether they plan to major in music or plan to continue their enjoyment through classroom study or performance ensembles. Many school instruments are provided.

Career possibilities include instrumental and choral conductor, classroom or private teacher, disk jockey, studio technician, music critic, composer and/or performer.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
	Wellness Elective(s)	2
MUSC 115	Concert Band (1 credit/term)	4
	or MUSC 117 Concert Choir (1 credit/term) (4)	
MUSC 122	Music Theory I	3
MUSC 123	Aural Skills I	2
MUSC 124	Music Theory II	3
MUSC 125	Aural Skills II	2
MUSC 138	Jazz Band	1
MUSC 157	Pop-Swing Choir	1
MUSC 245	Applied Music-Private Piano Lessons (1 credit/term)	2
	Voice or Instrumental Lessons (1 credit/term)	2
	Students may select from the following:	
	MUSC 144 Applied Music-Private Voice Lessons (1)	
	MUSC 145 Applied Music-Private Instrumental Lessons (1)	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Required:	
	MUSC 100 Music Appreciation (3)	
	Math, Science and Computer Information Systems Electives	13
	<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>	
	<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>	
	Social and Behavioral Sciences Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	General Education Electives	6
	<b>Total Required Credits</b>	<b>65</b>

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are high school band and/or high school choir.

#### Award

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

Revised: May 2018



## Liberal Arts

### Natural Science Transfer

#### ► Contact Information

Shannon King, department chair  
shannon.king@ndscs.edu  
701-671-2296  
Haverty Hall 213

#### ► Delivery Methods

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

The Natural Science transfer curriculum plan is designed for the individual who is considering a career in any of the life sciences. All colleges and universities require core courses such as English, social sciences, humanities and physical education, as well as a strong foundation in mathematics, chemistry and biology for students seeking a bachelor's degree. The mathematics and science courses form the foundation for more advanced studies at the university.

To be successful in this field, you must be strongly motivated, possess high scholastic ability and have an interest in an aptitude for mathematics and the sciences. Important skills include attention to details, a strongly developed sense of curiosity and imagination, self-discipline, patience and ambition.

Students entering the Natural Science transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Natural Science plan provides preparation for the professional curriculum and meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Careers in the Natural Sciences are many and varied. Possible areas of specialization include biology, botany, genetics, ecology, microbiology and zoology. Many job opportunities exist in education, research and government agencies. Although some entry-level positions require only a bachelor's degree, most jobs require one or more advanced degrees such as a master's or Ph.D.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
	Computer Information System Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
	<b>Total Required Credits</b>	<b>68</b>

PHYS 212 College Physics II and PHYS 212L College Physics II Lab are also recommended but not required for graduation.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics and English. Courses that develop reading and communications skills are also recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## Liberal Arts

### Nursing Transfer

#### ► Contact Information

Barb Diederick, department chair  
alliedhealthcareers@ndscols.edu  
701-671-2981  
Mayme Green Allied Health Center 213F

#### ► Delivery Methods

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

The Nursing transfer curriculum plan at NDSOLS 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 bachelor's 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 *NDSOLS Catalog*.

Course Code	Course Title	Credits
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
BIOL 213	*General Pathology	3
CHEM 115	**Introductory Chemistry	3
CHEM 115L	**Introductory Chemistry Lab	1
CHEM 116	**Introduction to Organic and Biochemistry	3
CHEM 116L	**Introduction to Organic and Biochemistry Lab	1
COMM 110	Fundamentals of Public Speaking	3
*ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
Wellness Elective(s)		2
*MATH 103	College Algebra	3
or MATH 104	Finite Mathematics	
MATH 210	*Elementary Statistics	3
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 111	Introduction to Psychology	3
PSYC 250	Developmental Psychology	3
PSYC 270	*Abnormal Psychology	3
SOC 110	Introduction to Sociology	3
CIS/CSCI Elective		2
	<i>Any course marked ND:COMPSC</i>	
Humanities/History Electives		6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
General Education Elective		1
<b>Total Required Credits</b>		<b>65</b>

\*A placement test may be required if you have not met the English (ENGL 110) or Math (MATH 103 or higher) requirements.

\*Not required by all nursing programs

\*\*NDSU Transferees contact your advisor

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSOLS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent.

#### Award

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

Revised: April 2018



## Liberal Arts

### Optometry Transfer

#### ► Contact Information

Dr. Bill Shay, associate professor  
william.shay@ndscs.edu  
701-671-2341  
Haverty Hall 228

#### ► Delivery Methods

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

The Optometry transfer curriculum plan students generally major in an area of science. Students should keep in mind, however, not all optometric school applicants are accepted. Therefore, it is important to select a major that will prepare you to pursue alternative career goals for occupational flexibility.

The optometric schools in the United States have no uniform requirements for pre-professional study. They do, however, recommend a bachelor's degree and a broad, general education that includes basic science requirement and the development of skills in reading, writing and speaking. Course work must be completed in biology/zoology, general chemistry, organic chemistry, physics, mathematics and English. It is also noted that most, if not all, schools require anatomy and physiology, biochemistry and microbiology. A student should contact the college or university of their choice to confirm a list of recommended courses.

Students are chosen for admission to optometric school primarily on the basis of their undergraduate grades, scores on the Optometry College Admission Test and letters of recommendation.

Students entering the Optometry transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Optometry plan provides preparation for the professional curriculum. This plan also meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to the Optometry transfer curriculum plan, other programs a student may transfer into are biology, microbiology, chemistry, biochemistry and natural science.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
or PHYS 251	University Physics I (4)	
and PHYS 251L	University Physics I Lab (1)	
PHYS 212	College Physics II	3
PHYS 212L	College Physics II Lab	1
or PHYS 252	University Physics II (4)	
and PHYS 252L	University Physics II Lab (1)	
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>68</b>

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading NDUS: General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics and English. Courses that develop reading and communications skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018

## Liberal Arts

### Pharmacy Transfer

#### ► Contact Information

Melissa Krava, department chair  
alliedhealthcareers@ndscs.edu  
701-671-2114  
Mayme Green Allied Health Center 213I

#### ► Delivery Methods

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

Today's pharmacist is the most accessible health care professional, with the average American visiting a retail drug store every 13 days. The retail pharmacist is in a position to assist patients with a wide range of health issues regarding medications, disease states, treatments, preventive measures and healthy lifestyles. Surveys show that people rely on their community pharmacists for health care information and admire them for it (pharmacists have been the most widely respected professionals in national surveys for several years). Hospital/institutional pharmacists interact with physicians and other professionals regarding patients' medication regimens and treatment plans, providing advice on drug usage, interactions, side effects and patient education. These clinical pharmacists strive for rational, effective, economical drug choice and usage in their institutions.

Students entering the Pharmacy transfer curriculum plan, who do not have the proper prerequisites, may need additional preparatory classes.

The Pharmacy transfer curriculum plan provides preparation for the four-year professional curriculum and meets the Liberal Arts Program Purposes listed in the *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.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ECON 201	Principles of Microeconomics	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
	or MATH 146 Applied Calculus I (4)	
MATH 210	Elementary Statistics	3
PHYS 211	College Physics	3
	Computer Information Systems Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	5
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2

**Total Required Credits** **70**

This curriculum does not fully meet all the educational requirements for the North Dakota State University College of Pharmacy. Additional courses required at NDSU include microbiology, communications and biochemistry. Students applying for other colleges of pharmacy will need to check for current entrance requirements.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, chemistry, zoology, mathematics, physics and English. Courses that develop reading and communications skills and two years of a foreign language, if available, also are recommended. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: April 2018



## Liberal Arts

### Physical Science Transfer

#### ► Contact Information

Dr. Bill Shay, associate 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 Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
or ENGL 125	Introduction to Professional Writing (3)	
FYE 101	Science of Success	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
PHYS 251	University Physics I	4
PHYS 251L	University Physics I Lab	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Lab	1
Electives*		5
Computer Information System Elective		2
<i>Any course marked ND:COMPSC</i>		
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Social and Behavioral Science Electives		8
<i>From two or more prefixes within the category marked ND:SS</i>		
Wellness Elective(s)		2

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

\* Depending on ACT math score or Accuplacer math score, a student may be required to take pre-calculus prior to starting the calculus sequence. This is to be determined through discussion with an academic advisor.

\*\*MATH 266 Introduction to Differential Equations is recommended.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

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.

Revised: May 2018

## Liberal Arts

### Psychology Transfer

#### ► Contact Information

Jane Krump, department chair  
jane.krump@ndscs.edu  
701-671-2370  
Old Main 442

#### ► Delivery Methods

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

This transfer curriculum plan is available to the student, whose goal is a career in psychology or related fields, including medicine, neurosciences, business, industry, mental health and applied psychology.

The Psychology transfer curriculum plan at NDSCS includes the freshman and sophomore core courses in English, humanities, math, physical sciences, social and behavioral sciences, and wellness. All colleges and universities require these core courses for students seeking a bachelor's degree.

Upon completion of the program, the student is awarded an Associate in Arts degree, which allows transfer to most four-year colleges and universities as a junior.

This plan meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

Course Code	Course Title	Credits
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
Humanities/History Electives		6
<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>		
Recommended:		
PHIL 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	Concepts of Biology Lab	1
or BIOL 150 General Biology I (3) and BIOL 150L General Biology I Lab (1)		
CSCI 116	Business Use of Computers	3
PSYC 111	Introduction to Psychology	3
PSYC 210	Child Development	3
PSYC 250	Developmental Psychology	3
PSYC 270	Abnormal Psychology	3
SOC 110	Introduction to Sociology	3
General Education Electives*		19
Recommended:		
PSYC 103	Addictions and Alternatives (2)	
PSYC 230	Educational Psychology (3)	
SOC 115	Social Problems (3)	
SOC 220	Family (3)	
SOC 221	Minority Relations (3)	

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

\*Consult academic advisor in selecting electives that are most appropriate for the intended bachelor's program.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admission process.

#### Award

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

Revised: May 2018





## Liberal Arts

### Social Work Transfer

#### ► Contact Information

Char Schuler, associate professor  
charlotte.schuler@ndscs.edu  
701-671-2364  
Old Main 436

#### ► Delivery Methods

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

The Social Work transfer curriculum plan is designed to prepare students with the general education and introductory courses necessary to pursue a bachelor's degree in Social Work. This curriculum will also provide students with the skills, knowledge and abilities necessary to advance in their profession. Students will participate in both classroom and field experiences that are intended to provide a generalist-model foundation in helping people. This program of study also has the flexibility to allow students to tailor their educational experience with the client population of their choice.

#### Transfer Options

Students interested in transferring to a four-year undergraduate program will find that completion of the Social Work transfer curriculum plan will provide them with a number of options. Many students have transferred successfully into accredited Social Work programs at a number of colleges and universities.

Course Code	Course Title	Credits
PSYC 265	Motivational Interviewing	3
SWK 255	Social Work in a Modern Society	3
SWK 256	Development of Social Welfare	3
SWK 297	Student Internship	4

#### Related/General Education Courses

COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
PSYC 103	Addictions and Alternatives	2
PSYC 111	Introduction to Psychology	3
PSYC 250	Developmental Psychology	3
PSYC 270	Abnormal Psychology	3
PHIL 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)	
Humanities/History Elective		3
<i>Any course marked ND:HUM or ND:HIST</i>		
Math, Science and Computer Information Systems Electives		13
<i>From any course marked ND:LABSC, ND:MATH, ND:COMPSC, ND:SCI</i>		
<i>All students must complete one lab science course, one mathematics course and one computer science course.</i>		
Required:		
BIOL 115	Human Structure and Function (3)	
BIOL 115L	Human Structure and Function Lab (1)	
Wellness Elective(s)		2
<b>Total Required Credits</b>		<b>67</b>

#### Admission Requirements

The applicants must be high school graduates or equivalent. Applicants may be required to complete a basic skills evaluation during the admissions process. Applicants are invited to visit the program.

#### Award

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

Revised: May 2018

## Liberal Arts

### Wildlife Management Transfer

#### ► Contact Information

Margaret Brady, associate instructor  
margaret.brady@ndscs.edu  
701-671-2119  
Haverty Hall 234

#### ► Delivery Methods

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

Wildlife management is a career for persons that have an aptitude for science, an ability to work with the public and a love of the outdoors. Wildlife managers may do many kinds of work. They give lectures to groups; act as law enforcement officers and as conservation officers. Wildlife managers survey wildlife populations (whether resident or migratory) to estimate the abundance, variety and distribution of animals in a region and to learn whether the available food and cover will support them. Managers may establish hunting and trapping seasons.

All wildlife managers must have at least a bachelor's degree. A master's degree is common, and a doctoral degree is usually required for those who plan to go into wildlife research or teaching. Besides studies in the life sciences, students must take courses that will prepare them to work with the public, with researchers and with government agencies. Tact and communication skills are essential for managers because they often deal with people in their work.

Students entering the Wildlife Management transfer curriculum plan who do not have the proper prerequisites may need additional preparatory classes.

The Wildlife Management transfer curriculum plan provides articulation into a professional curriculum. This plan also meets the Liberal Arts Program Purposes listed in the *NDSCS Catalog*.

In addition to this plan, other programs a student may transfer into are biology, natural science, environment science and conservation.

Course Code	Course Title	Credits
BIOL 150	General Biology I	3
BIOL 150L	General Biology I Lab	1
BIOL 151	General Biology II	3
BIOL 151L	General Biology II Lab	1
CHEM 121	General Chemistry I	4
CHEM 121L	General Chemistry I Lab	1
CHEM 122	General Chemistry II	4
CHEM 122L	General Chemistry II Lab	1
CHEM 241	Organic Chemistry I	4
CHEM 241L	Organic Chemistry I Lab	1
CHEM 242	Organic Chemistry II	4
CHEM 242L	Organic Chemistry II Lab	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MATH 165	Calculus I	4
PHYS 211	College Physics I	3
PHYS 211L	College Physics I Lab	1
	Biology Electives	4
	<i>To be determined through discussion with academic advisor</i>	
	Computer Information System Elective	2
	<i>Any course marked ND:COMPSC</i>	
	Humanities/History Electives	6
	<i>From two different prefixes within the categories marked ND:HUM or ND:HIST</i>	
	Social and Behavioral Science Electives	8
	<i>From two or more prefixes within the category marked ND:SS</i>	
	Wellness Elective(s)	2
	<b>Total Required Credits</b>	<b>68</b>

MATH 166 Calculus II and/or PHYS 212 College Physics II may be required for wildlife management majors by some universities. Consult with your advisor.

This curriculum meets the North Dakota University System general education requirements as indicated in the *NDSCS Catalog* under the heading: NDUS General Education Transfer Agreement.

#### Admission Requirements

The applicants must be high school graduates or equivalent. Helpful courses to prepare for this program are biology, computer science, keyboarding, chemistry, zoology, mathematics, physics and English. Applicants may be required to complete a basic skills evaluation during the admissions process.

#### Award

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

Revised: May 2018



# Mechanical Systems

## Mechanical Systems

### ► Contact Information

Jeff Kukert, program coordinator  
jeffrey.kukert@ndscs.edu  
701-671-2515  
Barnard Hall 122

### ► Delivery Methods

Face-to-Face: Wahpeton

The Mechanical Systems program is designed to provide the student with the basic knowledge of the plumbing code, trade skills and good work habits, and to credit the student with hours toward apprenticeship training time. The program also will offer the fundamentals of service and installation of residential and light commercial heating and air conditioning equipment. Qualified graduates will have a variety of occupational opportunities available in the HVAC/R and plumbing industries. General education and related instruction 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 systems, compressor change-out, refrigerant recovery and recycling, and system clean up. The equipment studied includes gas, oil and electric heating equipment along with conventional cooling equipment and heat pumps.

Students are encouraged to take the bulk of their plumbing coursework first and then return the second year for their HVAC/R Technology coursework. Students who fail to complete all the required general education courses will be granted certificates in each respective program (Plumbing and HVAC/R Technology). Both the Plumbing and HVAC/R certificate course work offer students study in "Green" technologies, which are in increasing demand as skills in this career choice.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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 Mechanical Systems department chair 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.

Course Code	Course Title	Credits
MSYS 101	Safety for Mechanical System Technicians	1
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
REFG 101	Refrigeration Technology	3
REFG 102	Refrigeration Technology	3
REFG 104	Refrigerants: Chemistry and Ecology	1
REFG 112	Domestic and Residential Systems	2
REFG 113	Refrigeration Systems Lab	2
REFG 121	Electrical Theory I	3
REFG 122	Electrical Theory II	3
REFG 123	Electrical Lab I	2
REFG 124	Electrical Lab II	2
REFG 253	Heating Equipment Theory	3
REFG 255	Heating Equipment Lab	2

### Related/General Education

ENGL 110	English Communication	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
Math Elective(s)		6
Wellness Elective(s)		2

### Total Required Credits

73

### Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Mechanical Systems.

Revised: May 2018



# Nursing

## Practical Nursing – AAS

### Contact Information

Barb Diederick, department chair  
alliedhealthcareers@ndscs.edu  
701-671-2967  
Mayme Green Allied Health Center 213F

### Delivery Methods

Face-to-Face: Wahpeton  
Face-to-Face: Fargo  
Combination

This program is available to high school graduates or transfer students who are interested in pursuing a career in nursing. The curriculum is five semesters and awards an Associate in Applied Science degree in Practical Nursing. The graduate has an excellent opportunity for immediate entry into the health profession and/or transfer to an associate or bachelor's program for nursing. All general education courses are transferable within the NDUS system. Application deadlines are April 1 (starting fall semester) and October 15 (starting spring semester). Practical nurses have excellent job opportunities, which include: employment in hospitals, long-term care facilities, clinics, home health, hospice, schools and industry.

The first two semesters of the program consist of classroom, laboratory and clinical instruction at the college and local long-term care facilities. The final three semesters of the program include clinical affiliations in adult, maternal-child, psychiatric, long-term care, home health and clinic nursing. Interactive Video Network (IVN) classroom course work is utilized in Wahpeton or Fargo. Tutoring is available at the Academic Services Center (ASC) for many general education and some nursing courses.

Criminal background checks and finger printing will be required. A previous conviction may affect clinical rotations and a state board of nursing could deny an application for licensure as a Practical Nurse. If arrested, charged and/or convicted of any felony, the applicant is required to meet with the department chair. A federal criminal history background check will also be required to test for the NCLEX-PN.

The NDSCS Practical Nursing program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326, 404-975-5000, and has full approval from the North Dakota Board of Nursing, 919 South 7th Street, Suite 504, Bismarck, ND 58504, 701-328-9777.

This program requires access to a personal computer capable of completing the assignments required by the nursing program (Windows 7 Operating System or newer).

Course Code	Course Title	Credits
NURS 101	Introduction to Nursing	5
NURS 102	Introduction to Adult Nursing	6
NURS 231	Psychiatric Mental Health Nursing	2
NURS 232	Adult Nursing	5
NURS 233	Adult Nursing Clinical	5
NURS 245	Maternal-Child Nursing	4
NURS 246	Maternal-Child Nursing Clinical	2
NURS 250	Leadership in the Long-Term Care Setting	2
NURS 251	NCLEX-PN Review	1
PHRM 205	Pharmacology for Nursing	3

### Related/General Education Courses

*BIOL 220	Anatomy and Physiology I	3
*BIOL 220L	Anatomy and Physiology I Lab	1
*BIOL 221	Anatomy and Physiology II	3
*BIOL 221L	Anatomy and Physiology II Lab	1
**ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
*MICR 202	Introductory Microbiology	3
*MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition (and Diet Therapy)	3
PSYC 250	Developmental Psychology	3
SOC 110	Introduction to Sociology	3
Humanities Elective—	PHIL 210 Ethics	3

### Total Required Credits 66

\*This course has an expiration date of completion when transferring into the program. Check with the program.

\*\*A placement test may be required if you have not met the ENGL (110 or higher) requirement.

Practical Nursing (NURS) courses must be taken in sequence. Sequencing is available on the program website at [www.ndscs.edu/nursing](http://www.ndscs.edu/nursing).

### Equal opportunity policy

The NDSCS Department of Nursing adheres to the NDSCS college equal opportunity policy as stated in the *NDSCS Catalog*.

### Admission 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 admission requirements, and be placed on the 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](http://www.ndscs.edu/admissions) for details.
2. Complete the Supplemental Program Application for the Practical Nursing Program.
3. Submit a high school transcript /GED with a 2.0 GPA or higher. If an applicant fails to meet the high school /college GPA of a 2.0, the following requirement applies: they must complete, or be in the process of completing, at least 12 general education courses from the nursing curriculum and achieve a "C" or higher to apply to the program.
4. Complete a program admission assessment examination and meet the program benchmark composite score of 40. Exam can be retaken once.
5. Applicants with English as a second language will be required to complete an English language proficiency exam and meet the benchmark score. Contact the program to schedule the assessment if this applies.
6. Review Essential Functions for Practical Nursing Students and submit the Essential Functions Verification Form located in the Program Information and Selection Process Booklet.

### 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, MICR 202/ 202L and completed health requirements. 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.

Specific immunizations, background checks, CPR certification (American Heart Associate BLS Provider OR American Red Cross Professional Rescuer for Healthcare Provider ONLY) are student requirements 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.

**Selection process details, contact information and forms are located in the Practical Nursing-AAS Program Information and Selection Process Booklet available at [www.ndscs.edu/nursing](http://www.ndscs.edu/nursing) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto:alliedhealthcareers@ndscs.edu)**

*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 an Associate in Applied Science degree in Practical Nursing, and be eligible for the National Council Licensure Exam for Practical Nurses (NCLEX-PN).

Revised: April 2018



# Nursing

## Associate in Science in Nursing - ASN

### • Registered Nursing

#### ▶ Contact Information

Ruth Gladen, RN program coordinator  
alliedhealthcareers@ndscs.edu  
701-671-2984 or 2981  
Mayme Green Allied Health Center 213Q

#### ▶ Delivery Methods

Face to Face: Wahpeton  
Online: Some Classes

This program is available to AAS or AS Licensed Practical Nurses who wish to continue their nursing education and become a Registered Nurse (RN). The graduate will have an excellent opportunity for immediate employment and/or transfer to a baccalaureate program in nursing utilizing the transfer (articulation) agreements the program has with select colleges.

The course sequence for the program begins Summer Session with NURS 255; Fall Semester NURS 256, and NURS 257 and continues Spring Semester with NURS 261, NURS 262 and NURS 263. \*\*RN 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 and finger printing 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 RN program has been granted full approval from the North Dakota Board of Nursing (NDBON), 919 South 7<sup>th</sup> 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 computer capable of completing the assignments required by the nursing program (Windows 7 Operating System or newer).

#### 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 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 admission requirements and be placed on the waiting list. If openings become available they may be selected, based on points, until the first day of class summer session.

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. Complete the Supplemental Program Application for the ASN Nursing Program.
3. Be a graduate of a Board of Nursing approved Associate in Applied Science or an Associate in Science Practical Nursing Program.
4. Hold an active and unencumbered license as a Practical Nurse (LPN).
5. 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**.
6. Achieve the benchmark minimum of a "C" in all \*prerequisite courses required for the RN program. A minimum cumulative GPA of 2.25 is required.
7. Complete admission assessment examinations and meet the program benchmarks. The program reserves the right to change the assessments required for the selection process.
8. Submit a resume, including work history, to the RN Program.
9. Review Essential Functions for Registered Nursing Students and submit the Essential Functions Verification Form located in the Program Information and Selection Process Booklet.

It is highly recommended that the applicant checks with the RN program to assure all admission requirements have been received before the application deadline.

Course Code	Course Title	Credits
<b>*Prerequisite Courses</b>		
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition	3
PHIL 210	Ethics	3
PSYC 250	Developmental Psychology	3
SOC 110	Introduction to Sociology	3
LPN Transfer Credits		14
<b>Total Prerequisite Credits</b>		<b>44</b>

#### Registered Nursing Program Courses

NURS 255	Role Transition	1
NURS 256	Life Span Nursing	4
NURS 257	Life Span Nursing Clinical	3
NURS 261	Maternal/Newborn Nursing	2
NURS 262	Community/Mental Health Nursing	3
NURS 263	Leadership	2

#### \*\*Registered Nursing Program General Education Courses

COMM 110	Fundamentals of Public Speaking	3
ND:MATH***		3
ND:SS		2
HUM or HIST Elective (No PHIL Prefix)		3
ND:COMPSC		2

#### Total Required Program Credits **28**

A placement test may be required if you have not met the Math (\*\*103 or higher) requirement.

At least 16 credits of the final 24 credits of the curriculum must be taken through NDSCS and be from the RN required courses.

#### Criteria for Selection

The class selection process will be determined by meeting required admission benchmark scores on admission assessment examinations, cumulative GPA of last completed semester, PN work experience, and number of RN general education courses completed. Selection order will be based on the highest total points achieved.

**Selection process details, contact information and forms are located in the Registered Nursing-ASN Program Information and Selection Process Booklet available at [www.ndscs.edu/nursing](http://www.ndscs.edu/nursing) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto:alliedhealthcareers@ndscs.edu)**

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross Professional Rescuer for Healthcare Provider ONLY), are student requirements that 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.

*\*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 an Associate in Science in Nursing (RN) degree; and be eligible for the National Council Licensure Exam for Registered Nurses (NCLEX-RN).

Revised: April 2018



# Nursing

## Registered Nursing - AAS

### ▶ Contact Information

Ruth Gladen, RN program coordinator  
alliedhealthcareers@ndscs.edu  
701-671-2984 or 2981  
Mayme Green Allied Health Center 213Q

### ▶ Delivery Methods

Face to Face: Wahpeton  
Online: Some Classes

This 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 and finger printing 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 RN program has been granted full approval from the North Dakota Board of Nursing (NDBON), 919 South 7<sup>th</sup> 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 computer capable of completing the assignments required by the nursing program (Windows 7 Operating System or newer).

### Equal opportunity policy

The NDSCS Department of Nursing adheres to the NDSCS Equal Opportunity Policy as stated in the *NDSCS Catalog* (www.ndscs.edu)

Course Code	Course Title	Credits
NURS 114	Role Development	1
NURS 115	Essentials for Registered Nursing I	4
NURS 116	Essentials for Registered Nursing I Clinical	1
NURS 117	Mental Health Nursing/Clinical	3
NURS 118	Essential for Registered Nursing II	4
NURS 119	Essentials for Registered Nursing II Clinical	2
NURS 201	Complex Nursing Care Concepts I	4
NURS 202	Complex Nursing Care Concepts I Clinical	3
NURS 203	Preventative Community Health	2
NURS 204	Maternal Child	4
NURS 205	Complex Nursing Care Concepts II	3
NURS 206	Complex Nursing Care Concepts II Clinical	3
NURS 207	Leadership/Preceptorship	3
NURS 208	Transition to Practice	1
PHRM 210	Pharmacology for Registered Nursing	3

### Related/General Education Courses

BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology I Lab	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology II Lab	1
CSCI 116/ HUM/HIST Elective		3
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
FYE 101	Science of Success	1
MICR 202	Introductory Microbiology	3
MICR 202L	Introductory Microbiology Lab	1
NUTR 240	Principles of Nutrition	3
PSYC 250	Developmental Psychology	3

### Total Required Program Credits

69

### Admission Requirements\*

Applicants will be admitted to the program following a point-based selection process. The following requirements must be met by **April 1<sup>st</sup>**. Applicants that apply after the deadline can complete the admission requirements and be placed on the waiting list. If openings become available the applicant 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.
2. Complete the Supplemental Program Application for the Registered Nursing-AAS Program.
3. Submit high school and all college transcripts. A minimum cumulative GPA of 2.25 is required for both.
4. 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.
5. Complete a program admission assessment examination and meet the program benchmark composite score of 55. Exam can be retaken once.
6. Be a Certified Nursing Assistant (CNA) and submit a copy of the certificate.
7. Review Essential Functions for Registered Nursing Students and submit the Essential Functions Verification Form located in the Program Information and Selection Process Booklet.

Applicants with English as a second language will be required to complete an English language exam and meet the benchmark score. Contact the program to schedule the exam if this applies.

Faculty advisement is recommended to review admission requirements. It is also recommended that the applicant check with the RN program to assure all admission requirements have been received before the application deadline.

### Criteria for Selection

The point based selection process will be determined by meeting all admission requirements, assessment score, select completed college level general education courses within the program plan, overall GPA (high school/college) and CNA certificate. Selection order will be based on the highest total points achieved.

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross Professional Rescuer for Healthcare Provider ONLY) are student requirements that 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 located in the Registered Nursing-AAS Program Information and Selection Process Booklet available at [www.ndscs.edu/nursing](http://www.ndscs.edu/nursing) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto:alliedhealthcareers@ndscs.edu)**

*\*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 an Associate in Applied Science (RN) degree; and be eligible for the National Council Licensure Exam for Registered Nurses (NCLEX-RN).

Revised: April 2018



# Occupational Therapy Assistant

## Occupational Therapy Assistant

### ► Contact Information

Beth Schlepp, department chair  
alliedhealthcareers@ndscs.edu  
701-671-2981  
Mayme Green Allied Health Center 213G

### ► Delivery Methods

Face to Face: Wahpeton  
Online: \*Some Classes

Occupational therapy assistants are a valued team member of the healthcare setting. COTA's assess, utilize and adapt everyday occupations to improve daily living skills, promote health and wellness, and enhance independence in the daily occupations of their clients. OT practitioners can work with clients ranging from newborn to geriatric in a variety of settings including school systems, hospitals, mental health clinics, nursing homes and rehabilitation facilities. The COTA provides intervention strategies under the supervision of a registered occupational therapist.

The program at NDSCS offers an exceptional education in a supportive learning environment. The curriculum consists of three semesters of academic preparation and one semester of full-time fieldwork education. Semester progression is based on meeting established benchmarks. Criminal background checks will be required. A felony charge and/or conviction may affect fieldwork placements, and therefore, program completion. If this issue applies, the student must meet with the department chair and fieldwork coordinator. All expenses incurred in preparation for, and during fieldwork are the responsibility of the student.

The OTA program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE's telephone number, C/O AOTA, is (301) 652-AOTA and the web address is [www.acoteonline.org](http://www.acoteonline.org). Graduates will be eligible to sit for the National Certification Examination for the Occupational Therapy Assistant, administered by NBCOT, 12 S. Summit Avenue, Suite 100, Gaithersburg, MD 20877-4160, phone number, C/O AOTA, is 301-990-7979, [www.nbcot.org](http://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*.

### Admission 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. 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.
3. Applicants (with a college transcript) must have a GPA of 2.0 or higher.
4. Applicants must have the ability to perform the *Essential Functions for the OTA Student* as listed on the college website [www.ndscs.edu/ota](http://www.ndscs.edu/ota) and in the OTA Information and Selection Process Booklet.
5. Applicants with English as a second language may be required to complete an English language proficiency exam and meet a benchmark score. Contact the program for information about the assessment if this applies.

**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. Testing date/time to be announced.
2. Documentation of 20 hours of non-paid volunteer/community service or job shadow in Occupational Therapy.
3. Professional Development Assessment scores.
4. Departmental interview scores.
5. Current fall semester grades for in-progress OTA and select general education courses (must be in-progress or completed with a "C" or higher).

Course Code	Course Title	Credits
OTA 101	Introduction to Occupational Therapy	3
OTA 102	Disability Awareness	1
*OTA 105	Medical Terminology	2
OTA 110	Introduction to Muscle Function	2
OTA 111	Therapeutic Media	1
OTA 112	Documentation	1
OTA 113	Physical Disabilities I: Theory/Practice	3
OTA 114	Pediatrics I: Theory/Practice	2
*OTA 115	Behavioral Health: Theory/Practice Children/Adolescents	2
OTA 151	Fieldwork Level I — Experience I	1
OTA 213	Physical Disabilities II: Theory/Practice	2
OTA 214	Pediatrics II: Theory/Practice	3
*OTA 215	Behavioral Health: Theory/Practice Adults	3
OTA 216	Professional Issues	2
OTA 218	Aging	2
OTA 219	Community Models of OT Practice	2
OTA 252	Fieldwork Level I — Experience II	1
OTA 253	Orientation to Fieldwork Level II	1
OTA 254	Fieldwork Level II — Experience I	6
OTA 255	Fieldwork Level II — Experience II	6
OTA 256	Seminar	1
<b>Related/General Education Courses</b>		
BIOL 220	Anatomy and Physiology I	3
BIOL 220L	Anatomy and Physiology Lab I	1
BIOL 221	Anatomy and Physiology II	3
BIOL 221L	Anatomy and Physiology Lab II	1
COMM 110	Fundamentals of Public Speaking	3
ENGL 110	College Composition I	3
FYE 101	Science of Success	1
PSYC 250	Developmental Psychology	3
PSYC 270	Abnormal Psychology	3
**Wellness Elective		2
<b>Total Required Credits</b>		<b>70</b>

\* Courses are offered in an online platform. Exams for online courses follow the NDSCS Distance Education Proctoring Guidelines.

\*\* Recommended: HPER 217 Personal and Community Health or NUTR 240 Principles of Nutrition (and Diet Therapy).

OTA courses must be taken in sequence. Sequencing of courses is available on the programs website at [www.ndscs.edu/ota](http://www.ndscs.edu/ota).

6. Additional admission points will be awarded for completion (completed 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.

**Selection process details, contact information and forms are located in the Occupational Therapy Assistant Program Information and Selection Process Booklet available at [www.ndscs.edu/ota](http://www.ndscs.edu/ota) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto:alliedhealthcareers@ndscs.edu)**

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross CPR/AED Professional Rescuer Course ONLY), and First Aid Certification are student requirements that 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.

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

### Award

Upon successful completion of the required courses ("C" or higher), students will be awarded an Associate in Applied Science degree in Occupational Therapy Assistant.

Revised: April 2018



# Pharmacy Technician

## Pharmacy Technician (Certificate)

### Contact Information

Melissa Krava, department chair  
alliedhealthcareers@ndscs.edu  
701-671-2114  
Mayme Green Allied Health Center 213I

### Delivery Methods

Face-to-Face: Wahpeton  
Hybrid: Live-video and  
Face-to-Face (Bismarck)

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 (40 academic credits) Certificate and a two-year (64 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.

The 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 and record-keeping, medical terminology and drug products. Students also take other 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 a federal criminal background checks will be required prior to the first day of classes. A previous felony conviction, alcohol or drug related misdemeanors may affect internship placements. The applicant must visit with the department chair regarding this issue if it applies.

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	3
PRMT 241	Pharmacy Internship-Hospital Based	3

### Related/General Education Courses:

BADM 234	Customer Service	1
BIOL 115	Human Structure and Function	3
BOTE 171	Medical Terminology	4
ENGL 105	Technical Communications	3
FYE 101	Science of Success	1
PSYC 100	Human Relations in Organizations	2

**Total Required Credits** **40**

(Six of the credits for both programs are experiential hours normally done 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.

### 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.

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross CPR/AED Professional Rescuer course ONLY), are student requirements 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.

Students will be allowed to take PRMT 101 and PRMT 111 prior to admittance.

\*Students can also complete CPR by taking HPER 210 during the program.

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

Applicants with English as a second language may be required to complete an English language proficiency exam and meet the benchmark score. Contact the program to schedule the assessment if this applies.

**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](http://www.ndscs.edu/pharmacy-tech) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto:alliedhealthcareers@ndscs.edu)**

### Award

Upon successful completion of the required courses, students will be awarded a certificate in Pharmacy Technician.

Revised: April 2018





# Pharmacy Technician

## Pharmacy Technician (AAS Degree)

### Contact Information

Melissa Krava, department chair  
alliedhealthcareers@ndscs.edu  
701-671-2114  
Mayme Green Allied Health Center 213I

### Delivery Methods

Face-to-Face: Wahpeton  
Hybrid: Live-video and  
Face-to-Face (Bismarck)

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 (40 academic credits) Certificate and a two-year (64 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.

The 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 and record-keeping, medical terminology and drug products. Students also take other 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 the first day of classes. A previous felony conviction, alcohol or drug related misdemeanors may affect internship placements. The applicant must visit with the department chair regarding this issue if it applies.

### 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.

Specific immunizations, background checks, CPR certification (American Heart Association BLS Provider OR American Red Cross CPR/AED Professional Rescuer course ONLY), are student requirements 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.

Students will be allowed to take PRMT 101 and PRMT 111 prior to admittance.

\*Students can also complete CPR by taking HPER 210 during the program.

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	3
PRMT 241	Pharmacy Internship-Hospital Based	3

### Related/General Education Courses:

BADM 234	Customer Service	1
BIOL 115	Human Structure and Function	3
BIOL 213	General Pathology	3
BOTE 171	Medical Terminology	4
ENGL 110	College Composition I	3
ENGL/COMM	Elective (choose one):	3
COMM 110	Fundamentals of Public Speaking	
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
FYE 101	Science of Success	1
PHIL 210	Ethics	3
PSYC 111	Introduction to Psychology	3
Wellness Elective(s)		2
General Education Electives (to be chosen with advisor)		14

### Total Required Credits

66

(Six of the credits for both programs are experiential hours normally done 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.

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

Applicants with English as a second language may be required to complete an English language proficiency exam and meet the benchmark score. Contact the program to schedule the assessment if this applies.

**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](http://www.ndscs.edu/pharmacy-tech) (click on Program Selection Process) or contact the program at [alliedhealthcareers@ndscs.edu](mailto: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: April 2018

# Plumbing

## Plumbing

### ► Contact Information

Lon Lessard, program lead  
lon.lessard@ndscs.edu  
701-671-2585  
Mechanical Systems 111

### ► 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.

Course Code	Course Title	Credits
<b>Certificate</b>		
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.

<b>Related/General Education Courses</b>		
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
<b>Total Required Credits</b>		<b>37</b>

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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 Mechanical Systems department chair 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 in Plumbing.

Revised: May 2018



# Powersports Technology

## Powersports Technology

### ► Contact Information

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

### ► Delivery Methods

Face-to-Face: Wahpeton

The Powersports Technology program prepares students for employment in the vast and broad recreational powersports equipment industry. This program provides learning experiences that enable the student to learn and advance on the job and grow with the occupational field. Students' abilities in communications, human relations and other aspects of general education will be enhanced.

Students are provided with classroom and hands-on laboratory experiences emphasizing diagnostic and repair skills development. Students develop skills and abilities necessary to test, diagnose, adjust and repair various systems on all types of recreational powersports equipment.

This practical education and technical training will allow graduates to work on outdoor power equipment, snowmobiles, motorcycles, ATVs, personal watercraft, outboard, and inboard marine equipment. Graduates may choose to be employed with motorcycle, ATV, snowmobile or marine dealerships, independent repair shops, recreational equipment manufacturers, hardware or rental stores, implement dealers or marinas. Positions such as a service technician, partsman or salesman will be readily available. Many graduates go into business for themselves or advance as service, parts or sales managers, shop foremen, factory representatives and vocational technical teachers.

Career opportunities for this skilled occupation will be plentiful in any geographical region for a competent and dependable graduate. Salaries will advance rapidly as experience and knowledge of the profession grow. Students interested in pursuing an advanced degree will find the Associate in Applied Science degree in Powersports Technology provides transfer options to four-year colleges and universities in related fields.

Employers are looking for trained powersports technicians who have a working knowledge of the latest technological advances in 2- and 4- stroke engines regarding emissions reduction. As the government increases regulation of the emissions produced by powersports engines, it becomes even more important that these workers have the most up-to-date pollution control training in this field.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Or transfer equivalencies will apply as appropriate	

Applicants not meeting the above requirements are encouraged to visit with the academic counselor at 701-671-2257 or the Powersports Technology program coordinator at 701-671-2544 for strategies to meet the admission requirements.

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

Course Code	Course Title	Credits
<b>Certificate</b>		
PST 101	Outdoor Power Equipment Technology	5
PST 102	Snowmobile Technology I	5
PST 103	Snowmobile Technology II	5
PST 104	Motorcycle and ATV Technology I	5
PST 105	OPE and Snowmobile Fuel Systems	2
PST 122	Fundamentals of Electricity	3
MFGT 110	Industrial Shop Practices	2

### In addition to the courses listed under the Certificate option, the following courses are required for the Diploma and the Associate in Applied Science:

PST 201	Motorcycle and ATV Technology II	5
PST 202	Outboard Technology	5
PST 203	Stern Drive Technology	5
PST 205	Outboard Fuel Systems	2
PST 222	Motorcycle and ATV Electrical Systems	5

### Related/General Education Courses

<b>Certificate</b>		
FYE 101	Science of Success	1
ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2

<b>Diploma</b>		
FYE 101	Science of Success	1
ENGL 105	Technical Communications	3
MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2

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

Recommended:

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

Wellness Elective (HPER 210 recommended) 1

<b>Associate in Applied Science</b>		
FYE 101	Science of Success	1
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3

ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	

MATH 120	Basic Mathematics I	2
MATH 123	Basic Mathematics II	2
MATH 125	Basic Mathematics III	2

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

Recommended:

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

Wellness Electives (HPER 210 recommended) 2

PST 297 Cooperative Education - 324 hrs. 2

**Total Required Credits for Certificate 34**

**Total Required Credits for Diploma 62**

**Total Required Credits for Associate in Applied Science 70**

### Award

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

Revised: May 2018

# Precision Machining Technology

## Precision Machining Technology

### ► Contact Information

Steve Johnson, department chair  
steve.johnson@ndscs.edu  
701-671-2478  
Tech Center 29

### ► Delivery Methods

Face-to-Face: Wahpeton

The Precision Machining Technology curriculum is designed to provide students experience in machining as it pertains to machining, toolmaking and mold making.

This program provides education and training in CNC programming, CNC set-up and operation, production machining, mold making, die making, toolmaking, automated manufacturing, human relations, communications and other aspects of general education.

Career opportunities offer a wide range of employment possibilities in the manufacturing, machining, toolmaking, mold making and production areas. Recent placement has been 98 percent.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 15	Arithmetic – 51
	Elementary Algebra – 25

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
<b>Certificate</b>		
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
<b>Diploma and Associate in Applied Science</b>		
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 Operation	4
MATL 206	CNC 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
<b>Related/General Education Courses</b>		
<b>Certificate</b>		
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
<b>Diploma</b>		
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 – 2 cr		
Wellness Elective		1
FYE 101	Science of Success	1
<b>Associate in Applied Science</b>		
ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
MATH 136	Technical Trigonometry	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
Wellness Electives		2
FYE 101	Science of Success	1
<b>Total Required Credits for Certificate</b>		<b>33</b>
<b>Total Required Credits for Diploma</b>		<b>65</b>
<b>Total Required Credits for Associate in Applied Science</b>		<b>71</b>

Revised: May 2018

# Robotics, Automation and Mechatronics Technology



## Robotics, Automation and Mechatronics Technology

### ► Contact Information

Lonnie Wurst, program coordinator  
lonnie.wurst@ndsacs.edu  
701-671-2832  
Barnard Hall 206

### ► Delivery Methods

Face-to-Face: Wahpeton

The Robotics, Automation and Mechatronics Technology (RAMT) program is designed to provide students with the knowledge, skills, and abilities necessary to succeed in industries utilizing robotics and automated systems.

This program combines disciplines such as electronics, networking, computers, mechanics, and fluid power utilized in manufacturing and production facilities.

Industries that hire RAMT graduates with the skill sets learned in this program include; manufacturing, pharmaceutical, food production, energy, defense, and agriculture.

A RAMT technician graduating from this program may work performing installations, troubleshooting, repairing, and programming for automated systems.

A Robotics, Automation and Mechatronics Technology student will experience a combination of lecture and lab classes with knowledgeable instructors, using hands-on real world applications and scenarios which will prepare the student for a lifelong career.

**NOTE:** This program requires an HP ProBook 650 laptop or equivalent. Please refer to the NDSACS website for specifications. The cost will be approximately \$950 if purchased from NDSACS. For further information, contact Lonnie Wurst, Robotics, Automation and Mechatronics 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:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 17	Arithmetic – 51
	Elementary Algebra – 25

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.

Course Code	Course Title	Credits
ECAL 223	Electronic Devices/Lab	4
ECAL 224	Automated Industrial Controls Lab	5
ECAL 241	Basic Motor Controls Lab	3
ECAL 243	Programmable Logic Controllers Lab	3
MFGT 110	Industrial Shop Practices	2
RAMT 101	Applied DC Theory	4
RAMT 103	Applied AC Theory	4
RAMT 107	Mechanical Drives and Maintenance I	2
RAMT 109	Mechanical Drives and Maintenance II	2
RAMT 137	Print Reading, Drafting and Safety	2
RAMT 202	PLC's II	3
RAMT 203	Networks, Systems and Sensors	3
RAMT 221	Robotics II	3
RAMT 240	Principles of Project Management	2
RAMT 244	System Integration and Troubleshooting	2
RAMT 246	Quality Assurance Standards and Methods	3
RAMT 250	Drives and Servo Systems	2
RAMT 297	Cooperative Education	2

### Related/General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
FYE 101	Science of Success	1
Wellness Electives		
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 – 2 cr		

**Total Required Credits** 70

**Note: Students intending to transfer to University Programs are strongly encouraged to take the following related/general education courses:**

CIS 101	Computer Literacy	2
FYE 101	Science of Success	1
Wellness Electives		2
ENGL 110	College Composition I	3
English/Communication Elective (choose 1)		3
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
MATH 103	College Algebra	3
MATH 105	Trigonometry	2
PSYC 111	Introduction to Psychology	3

**Total Required Credits** 70

Revised: May 2018



# Technical Studies

## Technical Studies

### ► Contact Information

Academic Counselor  
NDSCS-Wahpeton  
701-671-2257

Academic Counselor  
NDSCS-Fargo  
701-231-6940

### ► Delivery Methods

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

This custom-designed program allows individuals to combine elements of various disciplines in a meaningful and logical sequence that meets their career goals. The Technical Studies program addresses a recognized need for business and industry to attract highly trained workers with a variety of skills and to retain current workers. Individuals may pursue this program of study for career advancement or increase in job responsibility or salary. Students work with an advisor to identify career goals and plan a program of study.

For example, a Technical Studies program may be appropriate if a student wanted to combine certain elements of a Business Management curriculum with parts of an Information and Communications Technology program. Another illustration of a Technical Studies program might include a program of study that consists of parts of Electrical Technology, HVAC/R Technology and Plumbing.

Green technology could be a large part of a student's customized program. In today's market that includes "smart" buildings, sustainable building materials, alternative fuels and changing technology, students may choose to customize plans that help them gain entry into a variety of new and emerging fields.

Students enrolled in this program may earn Credit for Prior Learning for previous occupational experience.

Students may choose to build a program that will allow them to earn a certificate, a diploma, or an associate degree. The objective of the individual, the occupational experience, and the needs of the work place will be considered in selecting courses.

For more information, contact the academic counselor at 1-800-342-4325, ext. 3-2257 or NDSCS-Fargo at 701-231-6901, ext. 1-6940.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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 a certificate, diploma or an Associate in Applied Science degree in Technical Studies.

Course Code	Course Title	Credits
<b>Certificate</b>		
Technical credits*		19
ENGL 105	Technical Communications or ENGL 110 College Composition I (3) Mathematics, Science, Social or Behavioral Sciences Electives	3
FYE 101	Science of Success	2
		1
<b>Diploma</b>		
Technical credits*		38
ENGL 105	Technical Communications or ENGL 110 College Composition I (3) Mathematics and/or Science Electives	3
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
Recommended:		
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations – 2 cr	
	General Education Elective	1
	Wellness Elective	1
FYE 101	Science of Success	1
<b>Associate in Applied Science</b>		
Technical credits*		46
ENGL 110	College Composition I	3
	English/Communication Elective (choose one)	3
	ENGL 105 Technical Communications	
	ENGL 120 College Composition II	
	ENGL 125 Introduction to Professional Writing	
	COMM 110 Fundamentals of Public Speaking	
	Mathematics and/or Science Electives	3
	Social and Behavioral Sciences, Humanities, History and/or Computer Electives	4
Recommended:		
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations – 2 cr	
	General Education Electives	3
	Wellness Electives	2
FYE 101	Science of Success	1
<b>Total Required Credits for Certificate</b>		<b>25</b>
<b>Total Required Credits for Diploma</b>		<b>51</b>
<b>Total Required Credits for Associate in Applied Science</b>		<b>65</b>

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

Work-Based Learning Experience (internship, affiliation, directed practice, cooperative education, practicum or supervised occupational experience) is a structured experience, which allows the student to learn on the job while under the direction and supervision of the designated college department. Usually earned after matriculation in a custom-designed program.

Credit for Prior Learning refers to learning that occurs before a student enrolls at NDSCS and may be applied to technical courses or work-based learning credits in the Technical Studies curriculum. It may be academic credit awarded for learning that does not occur in the classroom. The award of this type of credit must be based on college-level learning, not simply experiences or time elapsed. A key consideration in awarding Credit for Prior Learning in this form of learning must be described, demonstrated and documented before it can be awarded.

Revised: May 2018



# Technical Studies

## Journeyworker Track

### ► Contact Information

Academic Counselor  
NDSCS-Wahpeton  
701-671-2257

Academic Counselor  
NDSCS-Fargo  
701-231-6940

### ► Delivery Methods

Face-to-Face: Wahpeton  
Face-to-Face: Fargo  
Online: All classes  
Combination

The Technical Studies – Journeyworker Track program is designed to allow advanced standing to individuals who have completed a USDOL or federally approved apprenticeship training program of at least 6,000 hours (including a minimum of 400 related study hours). It is a flexible program providing students the opportunity to earn an Associate in Applied Science degree by combining their previous apprenticeship training with college credit course work. Students will work with an advisor to design their own plan of study based on their personal career goals. The completion of this program will help students develop the skills and abilities needed for advancement in their current profession.

Green technology could be a large part of a student's customized program. In today's market that includes "smart" buildings, sustainable building materials, alternative fuels and changing technology, students may choose to customize plans that help them gain entry into a variety of new and emerging fields.

Individuals who are currently employed and are not able to relocate will find many of their courses are available in an online format or offered by NDSCS at a distant site. Availability of classes is limited by the student's own plan of study.

For further information contact the NDSCS ApprenticeshipND program at 1-800-342-4325 ext. 3-2787.

For more information, contact the academic counselor at 1-800-342-4325, ext. 3-2257 or NDSCS–Fargo at 701-231-6901, ext. 1-6940.

Students who wish to continue their education will find there are transfer options to four-year colleges and universities. For more information, see the academic counselor.

### Admission Requirements\*

The applicants must be high school graduates or equivalent. To receive advanced standing, they must provide official documentation of a completed USDOL or federally approved apprenticeship training program of at least 6000 hours (including a minimum of 400 related study hours). Students considered for acceptance must complete all admission requirements.

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
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.*

Course Code	Course Title	Credits
<b>Journey-Level Certificate</b>		
PLA 202	Prior Learning Assessment	12
PLA 202	Prior Learning Assessment	10
PLA 202	Prior Learning Assessment	10

### General Education Courses

ENGL 110	College Composition I	3
English/Communication Elective (choose one)		3
ENGL 105	Technical Communications	
ENGL 120	College Composition II	
ENGL 125	Introduction to Professional Writing	
COMM 110	Fundamentals of Public Speaking	
Mathematics and/or Science Electives		3
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		
General Education Electives		3
Wellness Electives		2
Technical, Business and/or General Education courses Electives*		14

**Total Required Credits** **64**

\* - Individuals who have completed an approved apprenticeship program exceeding 400-hours of related studies may be granted up to 5 additional credits. (Calculated at one credit per 36-hours of instruction.) These credits will count toward the required technical, business and/or general education course credits.

- Consult academic advisor in selecting electives that are most appropriate. An academic plan must be developed and approved by the Technical Studies Committee and be placed on file in the Records office.

- Internships and cooperative education credits will not be accepted in lieu of the technical, business and/or general education course credits.

PLA 202 credits will be transcribed after the successful completion of one NDSCS course.

Individuals seeking this degree will need to meet the NDSCS graduation requirement stating: At least 16 of the final 24 credits of the curriculum must be taken through NDSCS.

### Award

Upon successful completion of the required courses, students will be awarded an Associate in Applied Science degree in Technical Studies.

Revised: May 2018

# Welding Technology

## Welding Technology Certificate

### ► Contact Information

Vance Harthun  
program coordinator – NDSCS Wahpeton  
vance.harthun@ndscs.edu  
701-671-2434  
Trade Tech II – 147

Lee Larson  
program lead – NDSCS-Fargo  
lee.a.larson@ndscs.edu  
701-231-6932  
NDSCS-Fargo 163

### ► Delivery Methods

Face-to-Face: Wahpeton  
Face-to-Face: Fargo  
Combination

Course Code	Course Title	Credits
<b>Certificate</b>		
MFGT 101	Robotics I	2
MFGT 110	Industrial Shop Practices <u>OR</u>	
MFGT 135	Basic Metallurgy	2
MFGT 123	Fabrication Methods I	2
MFGT 137	Print Reading I	2
WELD 151	Welding Theory I	3
WELD 152	Welding Theory II	3
WELD 153	Welding Lab I	5
WELD 154	Welding Lab II	5

### Related/General Education Courses Certificate

MATH 130	Technical Mathematics	2
FYE 101	Science of Success	1
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
• CIS 101 – Computer Literacy – 2 cr		
• PSYC 100 – Human Relations – 2 cr		

**Total Required Credits for Certificate** **31**

The Welding Technology curriculum is designed to provide students experience in welding as it pertains to assembly, manufacturing, energy and construction.

This program provides education and training in welding and cutting processes, robotics, print reading, metallurgy, and other aspects of general education.

Career opportunities offer a wide range of entry level employment possibilities in the manufacturing, steel construction, mining, energy and other areas of the welding industry.

The NDSCS Welding program is an American Welding Society SENSE certified facility. AWS Level I certification is available in the certificate program.

The NDSCS Welding program is an educational partner with Weld-Ed, the National Center for Welding Education and Training.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 15	Arithmetic – 51
	Elementary Algebra – 25

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.

Revised: May 2018





# Welding Technology

## Welding Technology Diploma or Associate Degree

### ► Contact Information

Vance Harthun  
program coordinator – NDSCS Wahpeton  
vance.harthun@ndscs.edu  
701-671-2434  
Trade Tech II – 147

Lee Larson  
program lead – NDSCS-Fargo  
lee.a.larson@ndscs.edu  
701-231-6932  
NDSCS-Fargo 163

### ► Delivery Methods

Face-to-Face: Wahpeton  
Face-to-Face: Fargo  
Combination

Course Code	Course Title	Credits
<b>Diploma and Associate in Applied Science</b>		
MFGT 101	Robotics I	2
MFGT 110	Industrial Shop Practices <b>OR</b>	
MFGT 135	Basic Metallurgy	2
MFGT 123	Fabrication Methods I	2
MFGT 137	Print Reading I	2
MFGT 140	Fabrication Methods II	2
MFGT 141	Print Reading II	2
WELD 151	Welding Theory I	3
WELD 152	Welding Theory II	3
WELD 153	Welding Lab I	5
WELD 154	Welding Lab II	5
WELD 201	Welding Theory III	4
WELD 202	Welding Theory IV	4
WELD 211	Welding Lab III	7
WELD 212	Welding Lab IV	7

The Welding Technology curriculum is designed to provide students advanced experience in welding as it pertains to assembly, manufacturing, energy and construction.

This program provides education and training in advanced welding and cutting processes, robotics, computer numerical control operations, inspection, print reading, fabrication, pipe and plate welding, math, communications and other aspects of general education.

Career opportunities as a Welding technician offer a wide range of employment possibilities in the manufacturing, steel construction, mining, energy and welding inspection. A diploma or Associate in Applied Science degree will provide higher level employment opportunities in the welding industry.

The NDSCS Welding program is an American Welding Society SENSE certified facility. AWS Level I and Level II certification is available.

The NDSCS Welding program is an educational partner with Weld-Ed, the National Center for Welding Education and Training.

### Admission Requirements\*

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

Required minimum placement scores:

<u>ACT</u>	<u>ACCUPLACER</u>
Reading – 15	Reading Comp – 61
English – 15	WritePlacer – 3-4
Math – 15	Arithmetic – 51
	Elementary Algebra – 25

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 2<sup>nd</sup> 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.*

### Related/General Education Courses

#### Diploma

ENGL 105	Technical Communications	3
	or ENGL 110 College Composition I (3)	
MATH 130	Technical Mathematics	2
MATH 132	Technical Algebra I	2
Social and Behavioral Sciences, Humanities, History and/or Computer Electives		4
Recommended:		
	• CIS 101 – Computer Literacy – 2 cr	
	• PSYC 100 – Human Relations – 2 cr	
Wellness Elective		1
FYE 101	Science of Success	1

#### Associate in Applied Science

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

**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.

Revised: May 2018

# COURSE DESCRIPTIONS

## (ABOD) AUTO BODY REPAIR AND REFINISHING TECHNOLOGY

### ABOD 101 Basic Auto Body Repair Techniques Lab (4 credits)

This is a laboratory course covering the basic fundamentals of auto body repair. Emphasis is placed on learning the basic repair methods stressing quality of repair. Laboratory tasks are performed on donated salvage vehicles. Tasks are assigned according to the NATEF task list. (F)

### ABOD 102 Basic Auto Body Production Lab I (4)

ABOD 102 applies basic procedures learned in ABOD 101 to production-type vehicles. Using NATEF task lists, the student will take vehicle from damaged state through the initial priming stage. Prerequisite: ABOD 101 and ABOD 113. (F)

### ABOD 103 Basic Auto Body Production Lab II (4)

This is a continuation of ABOD 102. The procedures learned in ABOD 101, 102, 103, 113, 115, 116 and 120 will be applied to production vehicles. The student will take a vehicle from primer to refinish and perform final detailing to produce a satisfied customer. Prerequisites: ABOD 102 and ABOD 115. (S)

### ABOD 104 Basic Auto Body Production Lab III (4)

This is a continuation of ABOD 103. The procedures learned in ABOD 101, 102, 103, 113, 115, 116 and 120 will be applied to production vehicles. The students will take a vehicle from primer to refinish and perform final detailing to produce a satisfied customer. Prerequisites: ABOD 103 and ABOD 116. (S)

### ABOD 113 Basic Auto Body Repair Techniques I (2)

This is a lecture and demonstration course covering the basic fundamentals of auto body repair. Emphasis is placed on learning the basic repair methods, stressing the quality of the repair. (F)

### ABOD 115 Basic Auto Body Repair Techniques II (2)

This is a lecture and demonstration course covering the basic fundamentals of auto body repair. Emphasis is placed on learning the basic repair methods, stressing the quality of the repair. Prerequisites: ABOD 101 and ABOD 113. (F)

### ABOD 116 Refinishing Equipment/Plastic Repair (2)

This is a lecture course covering the basic equipment of auto body repair and plastic repair. Emphasis is placed on learning the basic uses and maintenance of the repair equipment. Tasks are assigned according to the NATEF task list. Prerequisites: ABOD 102 and ABOD 115. (S)

### ABOD 117 Refinishing Materials (2)

This is a lecture course covering the materials used in auto body repair. Emphasis is placed on learning the refinish materials used in auto body repair and the application methods safely. Tasks are assigned according to the NATEF task list. Prerequisites: ABOD 103 and ABOD 116. (S)

### ABOD 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 on modern unibody automobiles. Introduction to oxy-acetylene welding and cutting procedures also is covered. (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. HP-1 items are tracked on progress charts and the ASE-NATEF task list. (S)

### ABOD 201 Wheel Alignment and Measuring Systems (2)

This theory/lab course covers tasks necessary to diagnose, repair and replace suspension and frame parts on today's high-tech 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, refinishing, 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 lay out 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, refinishing, 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 upholstering processes including sewing machine operation, maintenance and repair; measuring, marking and cutting covering materials; seat re-upholstering; trim panel making and covering, headliner recovering; carpet 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, shrinkers, stretchers, mallets with shot bags, 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 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. (F, 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: AGECE 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 X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

See also Agriculture (AGRI), Animal Science (ANSC), Plant Science (PLSC) and Soil Science (SOIL)

**(AGRI) 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)

**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 also will include downloading data from the Internet and evaluation and purchase of data from commercial sources. Students will learn data collection processes based on a real world project. They will be responsible for identifying a study area, a question or management issue, and the data needed to answer the questions. Prerequisites: AGRI 275. (F)

**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. Student will use various data sets and apply GIS functions to answer management questions. A major component of this course will be determining relationships and establishing patterns in yield and other cropping factors and interpretation of these patterns and relationships. Prerequisite: AGRI 285. (S)

**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)

**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. (Alternating – S)

**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)

**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)

**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)

**ANSC 231 Livestock Evaluation (2)**

The study of evaluating breeding and market livestock based on records, appearance, and soundness. (F)

**ANSC 236 Introduction to Range Management (2)**

Principles of range management which include plant identification, range evaluation and range improvement. (S)

**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)

**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 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. (F, O)

**ARCT 102 Architectural Drafting II (5)**

This course is a continuation of residential construction. Students will draw a complete set of working drawings for a two-story house. Stair sections, framing plans, truss construction and a study of kitchen layouts and elevations are included. Prerequisite: ARCT 101. (S, O)

**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. After completion of this course, the student will have the necessary requirements to enter into studies in Architectural Drafting and Estimating or the Construction Management Technology program. (F, O)

**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. 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 Architecture software. We will use the BIM software in conjunction with Residential Design and create a virtual model. (S)

**ARCT 133 Residential Methods and Materials (2)**

This course is an introduction to the methods of construction and the terminology and use of building materials. This course will develop the student's vocabulary and knowledge of the construction industry relating to construction practices and construction material requirements. (F, O)

**ARCT 134 Structural Wood Design (2)**

A course to introduce the sizing of structural members used in light wood frame building construction. A working knowledge of building codes and sizing terminology is emphasized. Prerequisite: ARCT 133. (S, O)

**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 apartment building. Students will use REVIT Architecture software to develop all of their project drawings. Prerequisite: ARCT 102 and ARCT 121. (F, O)

**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 Presentation (3)**

Course material covers the techniques of graphic communication, projection and introduction to color media as tools for architectural presentations. Special presentation software is introduced and utilized to provide rendered presentations using a computer. A course requirement is the coordination and completion of the student's portfolio for assessment purposes. An electronic portfolio is created as a final project to present the student's program work. Prerequisite: ARCT 201. (S)

**ARCT 223 Renovation and Design (3)**

This course is a practical introduction to the techniques of upgrading, rehabilitation and design of older residential and/or commercial structures to meet the needs of today's customer. Prerequisites: ARCT 102, ARCT 133 and ARCT 144. (F, O)

**ARCT 224 Plane Surveying (1)**

This course is a study of elementary plane surveying and the equipment used. Practical field problems are involved using the engineer's level and transit. (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 write a research report on specific construction materials as assigned. This course will also introduce basic mechanical and electrical equipment, their functions and space requirements as they relate to commercial construction. Students may visit job sites to examine the latest methods of commercial construction. Prerequisite: ARCT 133. (F, S, O)

**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. To that end, the student is 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. Job responsibilities of the major players in the structural steel design and drafting field are fully discussed. The design of beams, columns and connections are also discussed so the student is conversant in the terminology and aware of the design process. (S, O)

**ARCT 241 Construction Estimating II (3)**

This course covers manual and computer-assisted estimating procedures. Several light commercial and multi-family buildings will be estimated. Labor costs will be included with several of the projects. The study of metal building terminology and the Butler Advantage software is also covered. Prerequisite: ARCT 144. (F, O)

**ARCT 242 Construction Estimating III (3)**

This course covers manual and computer-assisted takeoff procedures for material and labor on commercial buildings. Students will become familiar with contracting and bidding procedures. Students will also be introduced to using an estimating digitizer to do take-offs. Prerequisites: ARCT 144 and ARCT 241. (S, O)

**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. (F, S)

**ASC 062 Medical Vocabulary (1-2)**

Presents medical vocabulary as an introduction or supplement to curricular studies. Emphasis on meaning, structural analysis, pronunciation and spelling. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)

**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 070 Computer Prep (1)**

Introduces students to personal computer use. Includes fundamentals of computer systems and basic application of software programs. Prepares students for college computer courses. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)

**ASC 071 Introduction to Keyboarding (1)**

Offers students with no computer experience the opportunity to practice keyboarding and word processing skills. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)

**ASC 075 College Study Skills (1)**

Provides an overview of basic study skills. Includes outlining, note taking, underlining, effective textbook reading and test taking. Also discussed are self-motivational techniques and general study tips. Learning and listening strategies, memory techniques, time management, and cooperative learning are also discussed and practiced. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S, Su)

**ASC 082 Effective Reading (3)**

Provides strategies to improve reading efficiency by building vocabulary and improving basic reading, writing, and study skills. (F, S, Su, O)

**ASC 083 Speed Reading (1-2)**

Designed to improve reading efficiency by the use of computerized programs and lessons to increase reading rate, while still maintaining good comprehension, and developing greater flexibility of reading speed. (F, S, Su)

**ASC 084 Critical Reading (2)**

Develops critical reading comprehension and thinking skills through interpretation of selected reading materials. 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 is a writing course designed to help students gain the skills of sentencings 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 a writing course 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 percents and application of percents. This course may be required due to ACCUPLACER test results and the course placement policy. (F, S, Su, O)

**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, polynomials, and radicals. 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)

**ASC 095 Pre-Trigonometry (1)**

Teaches students how to solve for unknowns of a triangle using trigonometry functions and Law of Sines and Cosines. Discusses polar/rectangular coordinates and graphing. Upon recommendations of the instructor, this course may be repeated for additional credit. (F, S)

**ASC 096 Pre-Chemistry (1-2)**

Teaches elements, AMU, scientific notation, metrics, unit conversions, moles, chemical equations and reactions. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)

**ASC 097 Pre-Anatomy (1-2)**

Introduces fundamental concepts involved in the various systems of the human body using a variety of instructional materials. The class can be taken as an introduction or a supplement to Human Structure and Function (BIOL 115). (F, S)

**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)

**ASC 293 Peer Tutor (1-3)**

Offers successful students the opportunity to tutor individuals or groups in content areas of instruction in a supervised setting. ASC materials available for support. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)

**ASC 293A Peer Assistant (1-3)**

Trains students who want to share their college success with others needing academic/goal-setting support or note taking assistance. Required attendance at training sessions and at weekly individualized meetings with assigned students. Upon recommendation of the instructor, this course may be repeated for additional credit. (F, S)

**(AUTO) AUTOMOTIVE TECHNOLOGY****AUTO 103 Power Trains/Brakes (3 credits)**

A lecture, demonstration, and performance type course covering brakes, differentials, clutches, standard transmissions and transaxles. Included in the course is the study of operation, construction differences, and repair procedures and use of special tools. This is a half semester course.

**AUTO 133 Power Trains I (1)**

An applied automotive course intended for the student who is interested in pursuing a career in automotive technology or related fields. This course is a lecture, demonstration, and performance course that covers the basic mechanical principles and fundamentals of operation, disassembly, and adjustment procedures of the following components: manual transmissions, transaxles, clutches, driveshafts, u-joints, half shafts and CV joints.

**AUTO 134 Power Trains II (1)**

An applied automotive course intended for the student who is interested in pursuing a career in automotive technology or related fields. This course is a lecture, demonstration, and performance course that covers the basic mechanical principles and fundamentals of operation, disassembly, and adjustment procedures of the following components: differentials, transfer cases, and automatic transmissions.

**AUTO 143 Steering, Suspension and Wheel Alignment (3)**

A lecture, demonstration, and performance type course covering steering gears, power steering pumps, steering linkage, suspension systems, two and four wheel alignment, and wheel balance. Included in the course is the study of the operation, construction differences, diagnosing, and repair procedures of the steering, suspension and wheel alignment systems, and driveshafts and driveshaft servicing. This is a half semester course. (F, S)

**AUTO 155 Brakes I (1)**

An applied automotive course intended for the student who is interested in pursuing a career in automotive technology or related fields. This course is a lecture, demonstration, and performance course that covers the principles of operation, disassembly, and adjustment procedures of the following components: brake system hydraulics, boost systems, drum and disc brake systems.

**AUTO 161 Automotive Electronic Systems (2)**

This is a lecture, demonstration, and performance type of course which covers the principles of electricity as it applies to electrical circuits along with wire schematic reading, and component and connector locations to locate and find electrical faults. This includes the study of Ohms Law, Snap-On Multi-meter and Ethos certification.

**AUTO 163 Automotive Charging and Starting (3)**

This is a lecture, demonstration, and performance type of course which covers the principles of electricity and applies it to electrical circuits, batteries, starters, and alternators. It will include Ohm's Law, schematic reading, test instruments, starter testing and repair, alternator testing and repair and learning electrical fundamentals as well as troubleshooting starter and alternator electrical problems.

**AUTO 165 Automotive Electrical and Electronics (5)**

This is a lecture, demonstration, and performance type of course which covers the principles of electricity as it applies to electrical circuits, schematics, batteries, starters, and alternators. This includes the study of Ohm's Law, Multi-meter functions and faults found in electrical circuits along with many hands on practices, and Multi-meter certification. This is a half semester course.

**AUTO 188 Driveability Procedures I (5)**

A lecture, demonstration and performance type course covering the basics of engine diagnosis in the areas of engine condition, fuel delivery, ignition systems, emission control and scan tool diagnostic procedures to include hands-on training in all of these areas. This will also include industry-based training and operations of Snap On scan tools. This is a half semester course. Prerequisites: AUTO 165.

**AUTO 206 Chassis Repair/Body Electrical (7)**

This course covers the operation, testing/diagnosing, servicing of the chassis mechanical and electrical system. The systems covered will be anti-lock braking, four-wheel alignment, supplemental restraints, 4WD and AWD, automatic climate control, anti-theft systems, cruise control and other chassis related systems. The course will begin with a review of fundamentals of the systems mentioned and lead to how the system operates on the vehicle along with diagnosis/servicing system components. This is a half semester course. Prerequisites: AUTO 103, AUTO 143, AUTO 165 and TECH 109.

**AUTO 209 Advanced Chassis Repair and Body Electrical (4-8)**

A production lab class where the student works on customer owned vehicles. The students are in charge of writing repair orders, diagnosing vehicle problems, repair of the vehicle and figuring labor time of the individual labor charges for the services they performed. Lab work will be performed on the following units: brakes, alignment, suspension and steering, electrical accessories, instrumentation, air conditioning, standard transmissions/transaxles, clutches, differentials, and many other areas which pertain to the chassis. Prerequisites: AUTO 103, AUTO 165, AUTO 143, TECH 109, AUTO 206 and AUTO 207. Must be arranged with Automotive Department program coordinator.

**AUTO 216 Engine Repair (7)**

Theory and lab course covering the rebuilding of gas and diesel engines. Topics covered are: proper removal, installation, cleaning, valve grinding, cylinder head servicing, engine bearings, hydraulic lifters, camshaft servicing, cooling, oiling systems and engine noises. This course is offered both fall and spring semesters. Prerequisites: MFGT 110, AUTO 165, and AUTO 188.

**AUTO 219 Advanced Engine Rebuilding (4-8)**

An advanced course in engine rebuilding including complete cylinder head service, camshaft degreasing and other related areas. This is a half-semester course. Must be arranged with Automotive Department chairman.

**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 120.

**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.

**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. Prerequisites: AUTO 165, AUTO 188, AUTO 286 and AUTO 287.

**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. (S, O)

### **BADM 282 Human Resource Management (3)**

A course that is a survey of human resource management, including job analysis, recruitment, selection, performance appraisal, compensation, training and labor relations. The impact of environmental influences, such as legislation, court decisions and unions on human resource activities are addressed. (F, O)

### **BADM 291 Career Seminar (3)**

The student has the opportunity to participate in various projects and activities to demonstrate and perhaps improve his/her competency level in regard to desired student outcomes of the Business Management program. Activities will consist of a number of topics utilizing team interactions, role-playing, problem identification, problem-solving, creative thinking, decision-making, verbal and written communications and other personal and professional development exercises necessary for successful employment in business. (S, O)

### **BADM X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

### **BADM 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

### **BADM 299 Special Topics (1-9)**

A course designed to meet special departmental needs.



## **(BCT) BUILDING CONSTRUCTION TECHNOLOGY**

### **BCT 110 Concrete and Sitework (4 credits)**

This course is an introduction to the techniques of forming, placing, and finishing concrete. Students will gain experience and knowledge of footings, walls, and flat work as well as the tools used in the concrete construction industry. The course is conducted during the first eight weeks of the fall semester and is primarily lab. The students actually prep the sub-grade, construct the form-work, install the reinforcement, place and finish the concrete, strip and clean the forms, and backfill the work site as required. Skid steer operation as well as the use of other construction equipment is incorporated into this hands-on training experience. (F)

### **BCT 111 Concrete Theory (2)**

This course gives the students an understanding of proper procedures and techniques for placing, finishing, jointing, curing, and protection of concrete flatwork. It prepares them to successfully complete the American Concrete Institute (ACI) Examination which is administered by a representative from the North Dakota Concrete Council at the conclusion of the course. Successful completion of this examination gives them a certification as "ACI Concrete Flatwork Technician," an industry recognized accomplishment. (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 garden sheds and other utility type structures. The students use blueprints to construct these projects and work in small groups of three or four. This course is primarily lab. (F)

### **BCT 130 Wood Frame Construction (7)**

This course is primarily laboratory focused consisting of framing techniques to include constructing a floor system, applying tongue and groove subflooring, framing of walls, applying sheathing, placing rafters, sheathing the roof, applying house wrap, installing windows and doors, installing soffits, installing siding accessories and siding, and installing shingles. The students use blueprints to frame a house and are offered the opportunity to act as the foreman for different phases of the construction. (S)

### **BCT 133 Carpentry Fundamentals (3)**

Carpentry fundamentals from the National Center for Construction Education and Research (NCCER), consists of ten modules: "Orientation to the Trade," "Building Materials, Fasteners, and Adhesives," "Hand and Power Tools," "Reading Plans and Elevations," "Floor Systems," "Wall and Ceiling Framing," "Roof Framing," "Introduction to Concrete and Reinforcing Materials," "Windows and Exterior Doors" and "Basic Stair Layout." (F)

### **BCT 140 Residential Print Reading (2)**

This course presents print reading fundamentals and provides print reading activities related to residential construction. Topics presented include the interpretation of sketches, symbols and abbreviations used in residential plot plans, floor plans, elevations, sections, and details.

### **BCT 210 Light Commercial Construction (7)**

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 floor, roof, and interior wall systems will be taught. Equipment usage and safety will be emphasized. (S)

### **BCT 220 Project Supervision (3)**

This course will be a study in construction job site responsibilities such as supervision, coordination, scheduling, conflict resolution and interpretation of construction documents. The emphasis will be on site management. Prerequisite: BCT 210 or department approval. (S, O)

### **BCT 222 Construction Safety (2)**

This course is designed to parallel the 29CFR1926 OSHA Construction Industry Regulations and to conform to the National Center for Construction Education and Research (NCCER). 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" and a "Certificate of Completion" from the NCCER. Attendance at each of the 30 hour sessions is mandatory. Note: Students successfully completing this course online will not receive the above listed certifications, but will instead receive an OSHA Campus wallet card which will expire in three years. (S, O)

### **BCT 224 Building Layout (2)**

This course provides the knowledge and skills required to accurately layout a building site. It provides hands-on experience with the combination of lecture and lab. (F)

### **BCT 230 Interior Finishing for Light Commercial Construction (7)**

This course provides experience and knowledge of the skills and techniques to perform in the field of finish carpentry. Methods of laying out and installing drywall, millwork, cabinets and finish hardware will be emphasized. (S)

### **BCT 233 Carpentry Framing and Finishing (3)**

Carpentry framing and finishing from the National Center for Construction Education and Research (NCCER), consists of twelve modules which are: "Commercial Drawings," "Roofing Applications," "Thermal and Moisture Protection," "Exterior Finishing," "Cold-Formed Steel Framing," "Drywall Installation," "Drywall Finishing," "Doors and Door Hardware," "Suspended Ceilings," "Window, Door, Floor, and Ceiling Trim," "Cabinet Installation" and "Cabinet Fabrication." (S)

### **BCT 240 Commercial Print Reading (3)**

This course will present and reinforce concepts regarding elements commonly found in commercial structures. 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, O)

### **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 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.

### **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) 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) ND:LABSC

### **BIOL 115 Human Structure and Function (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 Human Structure and Function 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)**

This course explores the relationship between humans and 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)**

This course explores the relationship between humans and 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)**

The first semester of a two-semester sequenced study of the fundamental topics of biology with an emphasis on cellular biology. Corequisite: BIOL 150L. (F) ND:LABSC

**BIOL 150L General Biology I Lab (1)**

A laboratory course to be taken in conjunction with BIOL 150. Course focus is on biomolecules, cell structure, metabolism and membrane transport. Corequisite: BIOL 150. (F) ND:LABSC

**BIOL 151 General Biology II (3)**

The second semester of 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)**

The second semester of 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

**BIOL 170 General Zoology (3)**

A survey of the animal kingdom, from simple to complex. Major invertebrate and vertebrate animal groups will be covered with emphasis on structure, function, life history characteristics and evolutionary advancements of each. Topics of animal ecology, with emphasis on regional species, concludes the course. Three one-hour lectures per week. Prerequisite: BIOL 150 or BIOL 151. Corequisite: BIOL 170L. (S-even years) ND:LABSC

**BIOL 170L General Zoology Lab (1)**

A laboratory course to be taken in conjunction with BIOL 170. The structure and function of representatives of all major animal groups will be examined. Dissection and use of the microscope will be emphasized. The course will include a field trip to local terrestrial and aquatic habitats. One three-hour lab per week. Corequisite: BIOL 170. ND:LABSC

**BIOL 213 General Pathology (3)**

A general overview of the disease process and the mechanisms by which the human body copes with disease. Also a survey of the more common diseases affecting various body systems. Prerequisite: BIOL 115 or Corequisite: BIOL 221. (S, O)

**BIOL 220 Anatomy and Physiology I (3)**

The first semester in the study of structure and function of the human body as an integrated whole. Corequisite: BIOL 220L. (F, S, Su, O) ND:LABSC

**BIOL 220L Anatomy and Physiology I Lab (1)**

A self-directed laboratory study of structure and functions of the human body that examines the general plan of body cells, tissues, and the skeletal, muscular, and nervous systems. This course emphasizes actual "hands-on" learning utilizing a variety of learning tools. This is the first semester of a two-semester course. Corequisite: BIOL 220. (F, S, Su, O) ND:LABSC

**BIOL 221 Anatomy and Physiology II (3)**

The second semester in the study of structure and function of the human body as an integrated whole. Prerequisite: BIOL 220. Corequisite: BIOL 221L. (F, S, Su, O) ND:LABSC

**BIOL 221L Anatomy and Physiology II Lab (1)**

A self-directed laboratory study of structure and functions of the human body that includes the anatomy and physiology of the endocrine, circulatory, respiratory, digestive, urinary, and reproductive systems. This course emphasizes actual "hands-on" learning utilizing a variety of learning tools. This is the second semester of a two-semester course. Corequisite: BIOL 221. (F, S, Su, O) ND:LABSC

**BIOL X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**BIOL 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

See also Microbiology (MICR)

**(BIOT) BIOTECHNOLOGY****BIOT 101 Introduction to Biotechnology I (3 credits)**

This course is the first part of a two course sequence designed to serve as an introduction to the field of biotechnology, its historical development, its current and future status and the technologies used to achieve the progress to date. All aspects of biotechnology's impacts on our society are explored including the agriculture, medical, food science, pharmaceutical and environmental segments. The course covers the science behind the developments, the ethical challenges and societal implications associated with the past, current and future developments. Specific focus is given to developing a foundational understanding of the vocabulary and basic science associated with this field along with an appreciation for the extent the biotechnology field plays in the US and world economies. (O)

**BIOT 102 Introduction to Biotechnology II (3)**

This course is the second part of a two course sequence designed to serve as an introduction to the field of biotechnology, its historical development, its current and future status and the technologies used to achieve the progress to date. All aspects of biotechnology's impacts on our society are explored including the agriculture, medical, food science, pharmaceutical and environmental segments. The course covers the science behind the developments, the ethical challenges and societal implications associated with the past, current and future developments. Specific focus is given to developing a foundational understanding of the vocabulary and basic science associated with this field along with an appreciation for the extent the biotechnology field plays in the US and world economies. Prerequisite: BIOT 101. (O)

**BIOT 210 Biotechnology Methods I (3)**

This course is the first semester of a two semester sequence of courses designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized within the biotechnology industry. This course will emphasize technical skills development, record keeping and communication skills, compliance with federal regulations and conformity to cGMP/cGLP standards. The course will meet for one hour of lecture and four hours of lab each week. Additional lab time may be required for completion of certain units. Prerequisite: NANO 205. (O)

**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. Prerequisite: BIOT 210. (O)

**BIOT 230 Fundamentals of Bioprocessing (3)**

This course is designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized within the biotechnology industry in the manufacturing/bioprocessing of biologically derived products. The course will emphasize the basic science, cellular metabolism and growth techniques used in the industry, specific examples of bioprocessed products currently on the market, compliance with federal regulations and conformity to cGMP/cGLP standards. Prerequisite: BIOT 210, BIOT 220. (O)

**BIOT X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**BIOT 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(BOTE) BUSINESS, OFFICE AND TECHNOLOGY EDUCATION****BOTE 108 Business Mathematics (3 credits)**

Review of mathematical fundamentals with emphasis on business applications and problem-solving. The fundamentals of the four basic operations involving whole numbers, fractions and decimal numbers and proceeding into business computations involving bank records, payroll, simple and compound interest, percentages, promissory notes, markups, purchasing, selling, present value and annuities. Note: This course may not be used with MATH 123 to fulfill mathematics requirements for the associate of applied science degree. (F, S, O)

**BOTE 171 Medical Terminology (4)**

Study of prefixes, suffixes and root words of medical terminology and their meaning, spelling and pronunciation. Emphasis on building a working medical vocabulary based on body systems. Study the anatomy, physiology, diseases, laboratory and diagnostic procedures, medical and surgical procedures, drugs and abbreviations commonly used in the body systems and medical specialties. Prerequisite and/or corequisite: None. Web-based instruction. (F, S, Su, O)

**BOTE X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**BOTE 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(BUSN) BUSINESS MANAGEMENT****BUSN 120 Fundamentals of Business (3 credits)**

An introduction to the basic principles of business organizations and enterprises in society which provide a function for personal business and entrepreneurial decision-making. Beneficial for individuals as employees or entrepreneurs. Explores the American business system, ownership forms, labor management relations, banking and finance, risk management, the legal environment and the government's role in business. (F/F-Online)

**BUSN 170 Entrepreneurship (3)**

This is an introductory course focusing on understanding the characteristics and role of the entrepreneur in the free-market economy. Students will develop an awareness of the opportunities for business ownership and develop some of the skills needed to effectively run a business. A capstone project will allow students to develop a business plan for a venture of their choosing. (S/S-Online)

**BUSN 254 Financial Statement Analysis (3)**

A course that interprets and analyzes accounting data and the financial statements with the use of Microsoft Excel. Topics include ratio analysis, budgeting and forecasting, time value of money, and capital budgeting. Prerequisite: CIS 101 or CSCI 116. (S)

**BUSN 282 Professional Development (1)**

This course will address professional skills which are necessary for students in their future role as both employees and supervisors. It aims to stimulate enthusiasm, interest and preparations for interpersonal skills and leadership development. Membership in Collegiate DECA is a requirement and this organization is the vehicle used to enable students to put into action the skills they have acquired. There will be an overnight excursion to attend a leadership conference. (F)

**BUSN 297 Internship (2)**

The development of business skills through work experience. A required total of 180 hours of supervised work at an approved business organization. Students will perform tasks as established in a training agreement between the business and the college. Two total semester credits required (by arrangement 2 credits per semester). (F, S, Su-as arranged)

**BUSN X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**BUSN 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(CAD) COMPUTER AIDED DRAFTING****CAD 120 Introduction to AutoCAD (3 credits)**

This course is an introduction to the operation and application of computer-aided drafting utilizing AutoCAD software. Drawing and editing commands are studied and utilized in a final project. (F, O)

**CAD X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**CAD 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(CHEM) CHEMISTRY****CHEM 115 Introductory Chemistry (3 credits)**

Introductory chemistry is a one-semester course designed to be an introduction to fundamental concepts used in general chemistry. The course topics include measurement, atomic theory, chemical bonding, ionic and covalent compounds, naming, shape, intermolecular forces, states of matter, solutions, reaction rates, equilibrium and acid-base chemistry. Prerequisite: ASC 092 and/or ASC 093 or equivalency exam. (F) ND:LABSC

**CHEM 115L Introductory Chemistry Laboratory (1)**

CHEM 115L is the laboratory component of CHEM 115. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the chemistry laboratory, such as safety, techniques and documentation of experimental work. Corequisite: CHEM 115. (F) ND:LABSC

**CHEM 116 Introduction to Organic and Biochemistry (3)**

This course is a one-semester course designed to be an introduction to organic chemistry and biochemistry. The course topics include alkanes, alkenes, alkynes, aromatics, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, amides, carbohydrates, lipids, amino acids, proteins, nucleic acids, enzymes and metabolism. Prerequisite: CHEM 115. (S) ND:LABSC

**CHEM 116L Introduction to Organic and Biochemistry Laboratory (1)**

CHEM 116L is the laboratory component of CHEM 116. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the organic and biochemistry laboratory, such as safety, techniques and documentation of experimental work. Prerequisite: CHEM 115L. Corequisite: CHEM 116 (S) ND:LABSC

**CHEM 121 General Chemistry I (4)**

This course is the first semester of a two-semester sequence in general chemistry. General Chemistry I is focused on the fundamental concepts of chemistry, such as measurement, matter, molecules, ions chemical equations, ideal gases, atomic structure, ionic and covalent bonding, periodicity and molecular geometry. Corequisite: MATH 103 or department approval. (F) ND:LABSC

**CHEM 121L General Chemistry I Laboratory (1)**

CHEM 121L is the laboratory component of CHEM 121. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard laboratory practices, such as safety, techniques and documentation of experimental work. Corequisite: CHEM 121. (F) ND:LABSC

**CHEM 122 General Chemistry II (4)**

This course is the second semester of a two-semester sequence in general chemistry. General Chemistry II involves the applications of the first semester topics toward the study of intermolecular forces, solutions, reaction rates, equilibrium, solubility and complex ions, acids and bases, thermodynamics, electrochemistry and nuclear chemistry. Prerequisite: CHEM 121. (S) ND:LABSC

**CHEM 122L General Chemistry II Laboratory (1)**

CHEM 122L is the laboratory component of CHEM 122. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide additional experience with standard laboratory practices, such as safety, techniques and documentation of experimental work. Prerequisite: CHEM 121L. Corequisite: CHEM 122. (S) ND:LABSC

**CHEM 241 Organic Chemistry I (4)**

This course is the first semester of a two-semester sequence in organic chemistry intended for students in the sciences and pre-professional programs. Organic Chemistry I is focused on the study of structure and properties of organic compounds, with an emphasis on structure and bonding, nomenclature, stereochemistry, reactions, mechanisms and synthesis. Prerequisite: CHEM 121 and 122. (F) ND:LABSC

**CHEM 241L Organic Chemistry I Laboratory (1)**

CHEM 241L is the laboratory component of CHEM 241. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide an introduction to standard practices in the organic laboratory, such as safety, techniques, reactions, product analysis and documentation of experimental work. Prerequisites: CHEM 121L and 122L. Corequisite: CHEM 241. (F) ND:LABSC

**CHEM 242 Organic Chemistry II (4)**

This course is the second semester of a two-semester sequence in organic chemistry intended for students in the sciences and pre-professional programs. Organic Chemistry II is further focused on the relationship of reactivity of organic compounds, with an emphasis on reactions, synthesis, mechanisms and spectroscopic methods. Prerequisite: CHEM 241. (S) ND:LABSC

**CHEM 242L Organic Chemistry II Laboratory (1)**

CHEM 242L the laboratory component of CHEM 242. It is designed to provide hands-on experience with the concepts discussed in the lecture portion, and to provide further experience with standard practices in the organic laboratory, such as safety, techniques, reactions, multi-step syntheses, product analysis and documentation of experimental work. Corequisite: CHEM 242. Prerequisite: CHEM 241L. (S) ND:LABSC

**CHEM 260 Elements of Biochemistry (4)**

Protein structure, function conformation and dynamics; enzymes; DNA-RNA; structure and flow of genetic information; biological membranes; and metabolism. Prerequisites: CHEM 241. (As needed)

**CHEM 260L Elements of Biochemistry Lab (1)**

Laboratory to accompany Elements of Biochemistry 260. Corequisite: CHEM 260. (As needed)

**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. (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 (220-901), 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)

### 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 (220-902). 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)

### CIS 164 Networking Fundamentals I (4)

Introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced do provide a foundation for the curriculum. By the end of the course students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. (F, O)

### CIS 165 Networking Fundamentals II (4)

Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Prerequisite: CIS 164. (S)

### 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 organizations target market on the social web and identify the social media platforms with the highest concentrations of its target audiences and determine how they are participating on those platforms and to select the optimal social media platforms for reaching its target audiences. In addition, students will also learn how to monitor and measure the progress made in reaching social media goals. (F, O)

### CIS 188 Application Design (3)

This course provides an introduction to the field of human-computer interaction (HCI). Students will learn practical principles and guidelines needed to develop high quality interface designs—ones that users can understand, predict, and control. Students explore theoretical foundations, design processes, examples of direct manipulation, menu selection, and form fill-in to gain an understanding of excellence in design. Current HCI topics are explored with balanced emphasis on mobile devices, Web, and desktop platforms. It addresses the profound changes brought by user-generated content of text, photo, music, and video and the raised expectations for compelling user experiences. (F, S)

### CIS 191 First Year Seminar (1)

This course provides students with the knowledge and opportunity to create an online portfolio where they can showcase their education and skills to obtain employment in their field of study. Students use tools in an online portfolio environment to create a product that includes their resume, documentation of their employment and education history, along with references. The goal is to create a usable and easily accessible platform for students to demonstrate their employability skills to prospective employers. (S)

### CIS 197 Internship (1-3)

Students need to have completed one full semester of course work prior to taking this class. The internship is an industry work experience for the student. The student will work with/for an NDSCS industry partner. The length of the internship will be determined by the industry partner. Prerequisite: First-year core classes. (F, S, Su)

### CIS 212 Microsoft Windows Operating System Client (3)

The purpose of this course is to offer all the critical information students need to successfully move into a role as an IT professional and support Windows Client OS in a business environment. Many hands-on exercises are included which allow students to practice skills as they are learned. (F)

### CIS 215 Implementing a Microsoft Windows Server Environment (4)

This course provides students with the knowledge and skills necessary to install and configure Microsoft Windows Client computers that are part of a workgroup or domain. In addition, this course provides the skills and knowledge necessary to install and configure Windows Server to create file, print, Web and terminal servers. (F, O)

**CIS 216 Implementing a Microsoft Windows Network Infrastructure (4)**

This course teaches students, through lectures, discussions, scenarios, demonstrations, chapter review questions, textbook exercises, and classroom labs, the skills and knowledge necessary to configure, manage, and troubleshoot a Windows network infrastructure. (S)

**CIS 220 Operating Systems (UNIX) (3)**

This course will focus on the Linux operating system. Students will learn how to use basic Linux command-line commands as well as various Linux graphical user interfaces. Students will also work with and learn basic system administration for Linux. (F, S, O)

**CIS 232 Graphics Design (3)**

The students will explore and learn the concepts and skills behind a comprehensive vector-draw software application. They will learn how to apply smart design principles to multimedia products such as dynamic graphics, animation, and Websites. Students will create everything from simple graphics, icons, and text to complex and multi-layered illustrations, all of which can be used within a page layout, in a multimedia presentation or on the Web. (F, O)

**CIS 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, use 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 Web sites 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)

**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)

**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)**

Describes the architecture, components, and operations of routers and switches in a large and complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Prerequisites: CIS 164, CIS 165. (F)

**CIS 268 Intermediate Networking II (4)**

Discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Prerequisites: CIS 164, CIS 165, CIS 267. (S)

**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)

**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)

**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)

**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 hacker 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.

**CIS 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**CIS 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(CJ) CRIMINAL JUSTICE****CJ 160 The Legal System (4 credits)**

Function and ethics of the legal assistant in the law office and legal system. An introduction to the federal and state court systems, personnel in the legal field, and the historical development and nature of the law. (S-odd years)

**CJ 201 Introduction to Criminal Justice (3)**

Examination of the criminal justice system and process including crime, law-making, criminality, prosecution, police, courts, and corrections. (F) ND:SS

**CJ 232 Administration of Justice (3)**

For criminal justice students or laymen; designed to broaden the understanding of the student concerning the various agencies involved in the administration of criminal law. Emphasis is placed upon the more important law-enforcement functions and interrelationships from arrest to executive pardon. (S)

**CJ 297 Internship (1-4)**

Supervised placement in local agencies (Wahpeton Police Department, NDSCS Campus Police, and Richland County Sheriff's Office) to give students experience in various areas of policing and corrections and to cultivate career exploration. (F, S)

**(CMT) CONSTRUCTION MANAGEMENT TECHNOLOGY****CMT 120 Surveying Fundamentals (2 credits)**

This course covers the instruction and practice in the use of surveying instruments and equipment. Types of surveys, units of measure, elementary leveling, field notes, and benchmarks are covered. (F)

**CMT 121 Plane Surveying (2)**

This course is a continuation of CMT 120. The course will cover the instruction and practice in the use of surveying instruments and equipment. Types of surveys, field notes, benchmarks, traversing with transits or total stations, traverse calculations, bearing calculations, remote elevations and distances are covered. (S)

**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 165 Residential and Project Experience (1)**

This course provides students with the opportunity to be on a team that competes in the National Association of Home Builder's Residential Construction Management Competition. The event gives first year students the opportunity to apply skills learned in the classroom to a real construction company by completing a management project/proposal. Proposals are submitted to a group of construction company executives who act as judges. During the International Builder's Show, students defend their proposals to the judges in front of an audience. All students must be a member of the Home Builders Association in order to enroll in the course. (S)

**CMT 225 Mechanical and Electrical Systems (2)**

This course focuses on the mechanical and electrical equipment, their functions, fundamental installation requirements, 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. (F)

**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 to the new CSI Format of 49 divisions. (S, O)

**CMT 252 Project Management (3)**

This course focuses on the processes and tasks required for successful management of construction projects. Students will gain a thorough understanding of all aspects of project coordination and contract administration. Topics will include record keeping and documentation, contract interpretation, submittals, meeting minutes, change orders, pay requests, quality control, claims and disputes. Ethics as it relates to project management and customer relations will also be discussed. Prerequisite: BCT 220. (S, O)

**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, O)

**CMT 265 Residential Project Experience (1)**

This course provides students with the opportunity to be on a team that competes in the National Association of Home Builder's Residential Construction Management Competition. The event gives students the opportunity to apply skills learned in the classroom to a real construction company by completing a management project/proposal. Proposals are submitted to a group of construction company executives who act as judges. During the International Builder's Show, students defend their proposals to the judges in front of an audience. All students must be a member of the Home Builder's Association in order to enroll in the course. (F)

**CMT 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**CMT 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(COMM) COMMUNICATION****COMM 110 Fundamentals of Public Speaking (3 credits)**

The theory and practice of public speaking with emphasis on content, organization, language, delivery and critical evaluation of messages. (F, S, Su, O) ND:COMM

**COMM 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)

**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)

**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 you the opportunity to explore career interests and develop professional skills through work experiences that are designed to unite career, social and personal growth in your education. 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.

**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: CIS 180. (S, O)

**CSCI 160 Computer Science I (4)**

An introduction to computer science including problem-solving, algorithm development and structured programming in a high-level language. Emphasis on design, coding, testing and documentation of programs using accepted standards of style. An introductory course in applying structured computer programming logic and concepts. A structured, systematic approach will be used in program development including problem analysis, structured logic design, program coding, program testing, debugging and documenting. An object-oriented language will be used for programming projects. Concepts of programming will include screen generation, keyboard and file input, data validation of input data, arithmetic formulas and functions, logical operations, and design and production of organized output. (F, O) ND:COMPSC



**CSCI 161 Computer Science II (Java) (4)**

Advanced concepts in computer science including data structures, algorithm analysis, 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 Mobile Application Capstone (3)**

This course uses concepts learned in CSCI 160 and CSCI 161 to develop web applications suitable for use by today's mobile users. It is meant to be a capstone type course. (S)

**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 CIS/CSCI classes. This class will require the student to use the following languages and tools: SQL, Visual Basic.NET, ASP.NET, Java and HTML. Prerequisites: CSCI 160/161, CSCI 122/172, CSCI 133/183. (S)

**CSCI 297 Internship (3-5)**

The development of computer skills through work experience (440 hours of work in a computer center environment). Prerequisite: Department approval. (F, S, Su)

**CSCI X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**CSCI 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(CT) CIVIL ENGINEERING AND SURVEYING TECHNOLOGY****CT 111 Civil Plans and Specifications (2 credits)**

This course is an introduction to basic fundamentals of civil engineering and surveying. Emphasis is placed on familiarization, reading and understanding highway/heavy plans, specifications and contracts. (F)

**CT 113 Introduction to Civil Design Applications (3)**

Introduction to Civil 3-D software focusing on the user interface of the software, points and point management, lines and curves, annotation, styles, surfaces, figures, and grading objects. During this course, the student will work on projects that will be used in future course work in courses such as Land Use Planning and Highway and Street Design. Prerequisite: CAD 120. (S, O)

**CT 121 Plane Surveying (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 Advanced Surveying (4)**

Advanced survey traverse and triangulation calculations and adjustments including error analysis, error distribution, subdivision of sections, contouring, route locations, grade determinations, earthwork measurements, map plotting, and coordinate geometry such as inverting between points and line intersections. The course will include fieldwork such as; traversing, direct and reverse angles, property corner searches, EDM calibration, construction location and grade staking, and building layouts with offset stakes. These labs will be done using Total Stations, Data Collectors, and GPS. Prerequisites: CT 121 and MATH 136. (S)

**CT 132 Materials Testing/Quality Control (4)**

This course covers the actual hands-on performance of laboratory and field tests on soils and aggregates used for the construction of civil engineering, highway/heavy project, including the materials, design, placement, and testing procedures of freshly mixed and hardened bituminous and concrete mixes. Most of the course is devoted to the performance of standardized lab and field procedures along with the necessary measurements, calculations and reports required for an accurate analysis. (S)

**CT 142 Construction Safety for Civil Technicians (1)**

This course will cover safety issues as they pertain to Civil Engineering and Surveying Technicians. Most of the course will be lecture, video and group discussion. (S-online)

**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 ArcMap. 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 ArcMap and ArcGIS online. 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, blueprint reading and other highway design criteria. A construction design project will be developed during the course. 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 221 Surveying Procedures (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 an area of campus, 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 Advanced Surveying Procedures (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 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, O)

**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 235 Water Resource Technology (3)**

This course covers the fundamentals of water supply and distribution, sanitary sewage collection, storm water collection, along with the environmental effects caused by improper water and sewage handling. Included in the course are topics on hydraulics, hydrology, water distribution and collection systems, storm water management, and the concepts of municipal solid waste disposal. Students will utilize advanced Civil 3-D techniques to create a 3-D drainage plan and 3-D pipe networks. Prerequisite: CT 214. (S)

**CT 261 Machine Control and Project Layout (2)**

This course will provide an understanding of 3-D machine guidance for earthwork on heavy machinery like excavators, bulldozers, graders, etc. Students will learn the skills necessary to setup control on a construction site, recreate 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. Prerequisite: CT 113. (F)

**CT X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**CT 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**CT 299 Special Topics (1-15)**

A course designed to meet special departmental needs.

**(CULA) CULINARY ARTS****CULA 101 Food Preparation Laboratory (8 credits)****CULA 102 Food Preparation Laboratory (9)**

Provides practical experience with the tools, equipment, materials and products used in food service and hospitality industry. Includes the properties and composition of food along with the basic knowledge of meats, produce, dairy products and staple groceries. Practical experience in the preparation of appetizers, salads, soups, sauces, meats, seafood, vegetables and farinaceous products. Practical experience in fabrication and preparation of beef, veal, pork, lamb, poultry and seafood along with the theory of service for these items. Practical experience in preparing and serving of food products is achieved through various banquets, special functions, daily preparation, fabrication and serving individuals and groups throughout both semesters. NOTE: The hospitality industry utilizes items that contain alcohol to flavor and flame food products that will be served to customers. These items include wine, flavored liquors, and spirits. The Culinary Arts Department, in an attempt to offer experiences and products that are as close to the work environment as possible, utilizes the same types of products in the preparation and service of food items prepared in the laboratory. Prerequisite for CULA 102: CULA 101, CULA 110. (CULA 101, F; CULA 102, S)

**CULA 110 Sanitation and Safety (2)**

A study of health and sanitation conditions as well as effective sanitary application measures, types of organisms and adulterates responsible for food contamination and spoilage. Special emphasis is placed on the conditions conducive to the transmittal and methods of preventing the growth of organisms and contaminating food products. The 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 hotel and restaurant kitchens. A wide variety of pastry and dessert products are prepared by students and many are utilized in the campus Dining Services facilities. Skills in recipe interpretation and conversion, accuracy in weighing of ingredients, proper mixing methods, and correct baking procedures are emphasized. (NOTE: Products will be prepared using flavored liqueurs and other spirits. Refer to CULA 101.) Prerequisites: CULA 101 and CULA 102. (F)

**CULA 202 Short Order Cookery (2)**

Training in grill, fryer and broiler cookery, sandwich and breakfast preparation. Actual short-order preparation experience is available through a campus restaurant operated by students. Corequisite: CULA 222. (F)

**CULA 203 Gourmet Foods/Catering and Banquet Service (8)**

This course is a continuation of food preparation techniques as taught in previous courses with opportunities for more specialized preparations. A variety of ethnic cuisines are explored, some of which are prepared and served in the campus restaurant. Food planning, purchasing and receiving procedures are studied. Catering projects and special functions serve as opportunities to practice these procedures along with food and labor costing. (See CULA 101 regarding the use of alcohol in food preparation). Prerequisites: CULA 101 and CULA 102. Corequisites: CULA 202 and CULA 221. (S)

**CULA 220 Dining Room Service (1)**

An overview of the operation of the restaurant dining room including personnel management and training, day-to-day operations and controls. 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. Corequisite: CULA 220. Prerequisites: CULA 120 and CULA 121. (F)

**CULA 222 Restaurant Service and Production Management (2)**

Dining room service and management applications such as sales forecasting, record of sales, inventory, point of sale operation, customer service and sales are practiced by students throughout the semester 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 110 Oral Anatomy for the Dental Assistant (2)**

This course provides basic instruction in root and tooth anatomy, charting of human dentition, muscles, TMJ and occlusion. Clinical considerations of dental anatomy are stressed. Prerequisite: Acceptance into the Dental Assisting program. (F)

**DAST 111 Introduction to Chairside Assisting (3)**

This course is a study of dental team dynamics, infectious disease development and methods of control, didactic and laboratory instruction in basic chairside procedures, patient communication and restorative dentistry. The didactic part of this course will be online. Prerequisite: Acceptance into the Dental Assisting program. Hybrid. (F)

**DAST 115 Dental Radiology for the Dental Assistant (3)**

This course is designed to provide a fundamental knowledge of dental radiology. Emphasis will be placed on operator and patient safety, quality assurance, radiology principles and radiographic imaging and developing laboratory competency in basic radiology skills. The didactic part of this course will be online. Prerequisite: Acceptance into the Dental Assisting program. Hybrid. (F)

**DAST 120 Dental Assisting Expanded Functions (2)**

This course is an introduction to dental assisting expanded functions legal in this region. The course will focus on pre-clinical and clinical skills associated with coronal polishing, fluoride application, pit and fissure sealants, dental dam, excess cement/bonding removal, suture removal, periodontal dressing and orthodontic procedures. Prerequisite: Satisfactory completion of DAST 111. (S)

**DAST 132 Clinical Training I (3)**

A continuation of Introduction to Chairside Assisting (DAST 111). The course will focus on dental specialties, management of patients with special needs, medical emergencies, the history of dentistry, and encompasses educational and licensure requirements for dental professionals, and professionalism in the dental field. Prerequisite: Satisfactory completion of DAST 111. (S)

**DAST 132L Clinical Training I: Clinic (1)**

This course will provide the student with an opportunity to begin developing clinical skills by assisting in a variety of clinical assignments. The course will focus on assisting in the general and specialty dental offices and actively participating in the NDSCS Allied Dental Education Clinic. Prerequisite: Satisfactory completion of DAST 111. (S)

**DAST 133 Clinical Training II (5)**

A continuation of Clinical Training I (DAST 132). The primary focus of this course is to provide dental assisting experience in selected dental offices. A capstone mockboard project will be completed in this course. Prerequisite: Satisfactory completion of DAST 132L. (Su)

**DAST 142 Dental Materials for the Dental Assistant (3)**

A study of the characteristics, physical properties, manipulation, uses and care of dental materials. Includes laboratory experience in the manipulation and preparation of those materials commonly used in dental practice. Safety procedures relating to each material and procedure are incorporated. Prerequisite: Acceptance in the Dental Assisting program. (F)

**DAST 144 Biodental Science (2)**

This course includes a study of oral embryonic development, oral histology and oral pathology. An introduction to dental pharmacology is included in this course. This course also serves as a basic introduction to nutrition and its role in the maintenance of oral health. Prerequisite: Satisfactory completion of DAST 111. (S)

**DAST X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**DAST 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(DCAT) CATERPILLAR DEALER SERVICE TECHNICIAN****DCAT 110 Caterpillar Engine Fundamentals (4 credits)**

A lecture/lab course covering engine operating principles, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures and measurement fundamentals on Caterpillar engines. Caterpillar engines are used for lab disassembly and assembly.

**DCAT 111 Introduction to Caterpillar Service (2)**

This course introduces the student to the Caterpillar organization history and the different parts of the company. Instruction and lab experiences in the shop include safety, shop operation and a major emphasis on how to obtain information using CAT Specific Software Systems.

**DCAT 112 Fundamentals of Hydraulics (3)**

A lecture/lab course designed to teach the basic hydraulic fundamentals. Identification and function of the various components used in Caterpillar hydraulic systems will include vane pumps, gear pumps and piston pumps. Also covered is ISO hydraulic symbol identification and tracing oil flows used in Caterpillar hydraulic systems. Lab exercises include disassembly and assembly of Caterpillar hydraulic components.

**DCAT 113 Caterpillar Fuel Systems (3)**

A lecture/lab course introducing the student to fuel systems used on Caterpillar engines. Combustion chamber design, injectors and injection pumps are covered in this class. Also covered are diagnosing faults in fuel injection and combustion systems, and lab exercises include disassembly and assembly of fuel components used in Caterpillar fuel systems.

**DCAT 114 Fundamentals of Electricity (3)**

A lecture/lab course that introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair the complex electrical systems installed on Caterpillar machines. Included is the study of Ohm's law, series and parallel circuits, test instruments and various components found on Caterpillar equipment. The course does not teach specific machine systems.

**DCAT 115 Air Conditioning Fundamentals (3)**

A lecture, discussion and lab-type course covering the basic theory and operating principles of air-conditioning systems as they relate to Caterpillar equipment. Lab exercises consist of leak detecting, evacuation, reclaiming, charging, component repair and use of test equipment to diagnose and repair malfunctions. (Su)

**DCAT 116 Fundamentals of Transmission and Torque Converters (3)**

A lecture/lab course that covers the various transmissions, torque converters and differentials used in Caterpillar equipment. This course also covers constant mesh, sliding gear, hydrostatic synchromesh and power shift transmissions involving planetaries. At the completion of this course, the student will have working knowledge of basic power train theory. (Su)

**DCAT 117 Machine Hydraulic Systems (3)**

A lecture/lab course designed for inspecting, testing, servicing and diagnosing Caterpillar hydraulic systems and components. Students will conduct testing and adjusting procedures on Caterpillar equipment, utilizing Caterpillar service procedures and test equipment. (Su)

**DCAT 150 Internship I (2)**

This internship is to follow DCAT 110 and DCAT 111. The student will maintain a daily log book. The intern dealer will provide a mentor for the student. During the course of the internship period, an evaluation will be completed between the mentor, instructor, manager and student. (F)

**DCAT 151 Internship II (2)**

This internship is to follow DCAT 112, DCAT 113 and DCAT 114. The student will maintain a daily log book. The intern dealer will provide a mentor for the student. During the course of the internship period an evaluation will be completed between the mentor, instructor, manager and student. (S)

**DCAT 200 Undercarriage/Final Drives (3)**

A lecture/lab course that introduces the student to undercarriage and drive systems used on the many different types of Caterpillar track machines. Also covered are final drives and braking systems used in Caterpillar track and wheel equipment. This course is a continuation of DCAT 116 Fundamentals of Transmissions and Torque Converters.

**DCAT 201 Machine Electronic Systems (3)**

A lecture/lab course that covers the electronic systems used on Caterpillar equipment. This course provides the background needed to diagnose and repair the electronics and computerized circuits found on Caterpillar equipment and engines. Basic electronic concepts, component function and system operation are covered. Caterpillar's procedures are taught to identify malfunctions and to test the system properly.

**DCAT 202 Engine Performance (2)**

A lecture/lab course that teaches the skills necessary to make CAT engines run at peak performance. The student will be provided with a thorough understanding of the necessary diagnostic skills required for troubleshooting Caterpillar engines and fuel systems. Emphasis will be placed upon knowledge and skills necessary to assure product reliability and performance.

**DCAT 203 Diagnostic Testing (2)**

This course introduces the student to machine problem identification using diagnostic tooling and reference material to properly diagnose and repair the complex systems installed on caterpillar machines. The course will concentrate on repair logic and applications using a troubleshooting and diagnosis process to solve machine faults in the power train, hydraulic system, and electrical system. The remainder of the course will focus on solving actual machine malfunctions, utilizing all diagnostic principles, tooling, and electronic troubleshooting applications.

**DCAT 204 Machine Specific Systems (3)**

This course is designed to expose students to different types of specialty equipment used for various operations, utilizing CAT equipment. Testing and adjustment of equipment will also be covered as per Caterpillar service procedures.

**DCAT 250 Internship III (6)**

This internship is to follow DCAT 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. (F)

**DCAT 251 Internship IV (6)**

This internship is to follow DCAT 202 DCAT 203 and DCAT 204. 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, dental hygiene assessment, 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, prophy jet, 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, planning for treatment and disease control, implementation of various clinical dental hygiene services and an evaluation of both patient and operator efforts and the results. Prerequisites: DHYG 101, DHYG 101L. Corequisite: DHYG 102. (S)

**DHYG 103 Clinic II (1)**

This course provides a continuation of fundamental principles of clinical dental hygiene. Areas of focus will be local anesthesia and pain control, trauma, caries risk assessment and prevention counseling, sealant application, child management, family abuse, and hypersensitivity. Prerequisite: DHYG 102. Corequisite: DHYG 103L. (Su)

**DHYG 103L Clinic II Lab (3)**

This is a continuation of DHYG 102L. This course provides instruction and continuing information on fundamental principles of clinical dental hygiene, periodontal assessment, periodontal treatment planning and case assessments. Clinical dental hygiene is that portion of the dental curriculum necessary for delivery of preventive, educational and therapeutic services to the public. This comprehensive care involves an assessment of patient needs, planning for treatment and disease control, implementation of various clinical dental hygiene services and an evaluation of both the patient and operator efforts and the results. Students participate in off-campus clinical experience with a diverse patient population. Prerequisite: DHYG 102L. Corequisite: DHYG 103. (Su)

**DHYG 110 Oral Anatomy (2)**

This course provides basic instruction in root and tooth anatomy, 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, 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 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, causative factors, assessment and treatment planning. Prerequisite: Acceptance into Dental Hygiene program. (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 201. (F)

**DHYG 202 Clinic IV (1)**

The course provides instruction in continuing information in fundamental principles of clinical dental hygiene. Specific topics to be discussed include: dental specialties, 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 102L, 103L and 201L. This course provides instruction on continuing information on fundamental principles of clinical dental hygiene, periodontal assessment, periodontal treatment planning and case assessments. Clinical dental hygiene is that portion of the dental curriculum necessary for delivery of preventive, educational and therapeutic services to the public. This comprehensive care involves an assessment of patient needs, planning for treatment and disease control, implementation of various clinical dental hygiene services and an evaluation of both the patient and operator efforts and the results. Students participate in off-campus clinical experiences with a diverse patient population. Prerequisite: DHYG 201L. Corequisite: DHYG 202. (S)

**DHYG 203L Clinic Refresher/Board Prep Lab (3)**

A clinical application course designed to assist the student in the preparation for the clinical board exam or to refresh laboratory skills. The course will focus on basic clinical or lab skills. Prerequisite: Completion of AAS in Dental Hygiene. (Su)

**DHYG 209 Head and Neck Anatomy (1)**

This course involves the study of the structure and function of the osteology, muscles, blood supply, nerves and lymphatics 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 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 220 Community Dental Health (2)**

This course provides instruction in principles of dental public health, epidemiologic methods, statistical measurement and analysis using ADPIE for diverse target populations. It is designed to give the student knowledge in community professionalism, develop evidence-based decision making skills and provide a basis for lifelong learning. Corequisite: DHYG 201L. (F)

**DHYG 242 Dental Materials (3)**

A study of the characteristics, physical properties, selection, manipulation, uses and care of dental materials. Includes laboratory experience in the manipulation and preparation of those materials commonly used in dental practice. Safety precautions relating to each material and procedure are incorporated. Prerequisite: Acceptance into Dental Hygiene program. (F)

**DHYG 243 Dental Jurisprudence (1)**

A study of the legal and ethical aspects of dental hygiene practice in relation to standards at the state and national level. In addition, this course includes writing a résumé, interviewing, recall systems, risk management and office communications. Corequisite: DHYG 202L. (S)

**DHYG 244 Dental Materials Lab Refresher (1)**

A laboratory experience of the characteristics, physical properties, manipulation, uses and care of dental materials. Includes laboratory experience in the manipulation and preparation of those materials commonly used in dental practice. Safety procedures relating to each material and procedure are incorporated. Prerequisite: Acceptance into the Dental Hygiene program. (F)

**DHYG 245 Periodontics II (1)**

This is a continuation of the study of periodontology. This course will include information on plaque control, advanced instrumentation, irrigation, surgical procedures, implants, emergencies, systemic factors, and treatment and maintenance for the periodontal patient. Prerequisite: DHYG 145. (F)

**DHYG 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 115 Introduction to Light and Medium Duty Engines (4)**

A theory and lab course covering rebuilding of heavy duty gas and light- and medium-duty diesel engines. Students will troubleshoot, disassemble, rebuild and assemble an engine during this class. Learning modules include: measurement fundamentals, basic engine operating principals, cylinder and piston service, cylinder head rebuilding and valve reconditioning, crankshaft and bearing service, and lubrication and cooling systems. Engines designed for the use of alternative fuels such as LPG and CNG are also covered. This class is a prerequisite for DTEC 215, CIH 215 and JDAT 215.

**DTEC 125 Introduction to Heavy Duty Drive Systems (3)**

A lecture and lab type course which provides the student with theory and hands-on operation of shop safety, operation and repair of bearings-seals, heavy duty steer axles, drive axles, medium and heavy duty truck suspension and wheel end assemblies. This is an 8-week course and an 80-hour class. This class is a prerequisite for DTEC 225, CIH, 225 and KMTS 225. (F, S)

**DTEC 135 Medium/Heavy Duty Brake Systems (2)**

A theory and lab course covering the operation and repair of air and hydraulic brake systems used in light, medium, heavy duty trucks and diesel powered equipment. This course covers all brake systems, diagnosis and repair of power, manual, anti-lock brakes and parking brakes. DOT inspection procedures are also covered in this class. This is an 8-week course and a 64-hour class.

**DTEC 155 Electricity for Diesel Technology (4)**

An introductory lab/theory class in electrical fundamentals. A practical approach to the study of electricity including Ohm's Law, power, series and parallel circuits, direct and alternating current, with strong emphasis on diagrams and troubleshooting. This class is designed for technicians in the Diesel Technology field. This class is a prerequisite for DTEC 255, CIH 255, and KMTS 255. (F, S)

**DTEC 164 Introduction to Mobile Hydraulics (4)**

This course is a study of hydraulic system fundamentals and various components used in a typical mobile hydraulic system. Component disassembly and reassembly will take place to aid in the understanding of component and system operation. Various components will be tested on a test bench to help the student understand how the components contribute to the overall operation of the system and will be used to evaluate the students' performance. Experiments will be performed on lab equipment to aid in the understanding of mobile hydraulic principles. This class is a prerequisite for DTEC 265, CIH 265, and KMTS 265.

**DTEC 185 Diesel Fuel Injection Systems (3)**

This course introduces students to diesel fuel injection systems. The students will study the design and operation of a variety of diesel fuel systems. Students will be required to inspect, disassemble, assemble, performance test and adjust fuels system components. This is an 8-week course and an 80-hour class. (F, S)

**DTEC 215 Heavy Duty Diesel Engines (7)**

A lecture and lab type course of current heavy-duty diesel engines. Students gain knowledge in operation, troubleshooting, rebuilding and tuning all types of diesel engines. Work includes disassembly, assembly, injection timing and adjustment common to diesel engines used in the agricultural, transportation and industrial industries. Prerequisite: DTEC 115.

**DTEC 225 Heavy Duty Drive Systems (7)**

A lecture and lab type course which provides the student with theory and hands-on operation and repair of the latest types of heavy-duty drive systems that the agricultural, transportation and industrial industries use on their equipment. Prerequisite: DTEC 125. (F, S)

**DTEC 255 Heavy Duty Chassis Electrical Systems (7)**

A lecture and lab type course covering the theory of operation, repair and diagnostic procedures used on heavy-duty truck and tractor electrical systems, electronic engines and transmissions. This is a half-semester course. Prerequisite: DTEC 155. (F, S)

**DTEC 265 Mobile Hydraulic Systems Diagnostics and Repair (7)**

DTEC 265 is a lab/lecture course covering the service diagnostics and repair of the hydraulic functions on agricultural and industrial equipment. Open center, closed center, and closed center load sensing systems are covered as well as steering, hydrostatic drives, 3 point hitches, and hydraulic functions of today's equipment. Prerequisite: DTEC 164.

**DTEC X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**DTEC 297 Cooperative Education for Diesel Technology (1-5)**

The Cooperative Education program for Diesel Technology allows the students to apply classroom study with a paid work experience related to their fields of study at a department approved work site. It is recommended that the student has completed one year of Diesel Technology. (Su)

**DTEC 299 Special Topics (1-15)**

A course designed to meet special departmental needs.

**(ECAL) ELECTRICAL TECHNOLOGY****ECAL 100 Introduction to Electricity (3 credits)**

An introductory lecture class in electrical fundamentals. A practical approach to the study of electricity including Ohm's law, power, series and parallel circuits, direct and alternating current, with strong emphasis on diagrams and troubleshooting. (F, S)

**ECAL 101 Direct Current (DC) Fundamentals (5)**

This course examines the basic components used in electrical circuits. The course stresses the appropriate terminology, units and uses of the various components in DC (direct current) environment only. Also, circuit analysis is stressed with circuits connected in series, parallel and series/parallel configurations. (F)

**ECAL 102 Alternating Current (AC) Fundamentals (5)**

This course examines the basic components used in electrical circuits. The course stresses the appropriate terminology, units and uses of the various components in an AC (alternating current) environment. Also, circuits are analyzed with components in series, parallel, and series/parallel. Prerequisites: ECAL 101, MATH 136. (S)

**ECAL 103 Electrical Code Study (4)**

An in-depth study of the National Electrical Code Chapters 1, 2, 3 and portions of Chapter 4. Wiring methods and materials, and equipment for general use are covered. State (ND and MN) electrical codes are also covered. (F)

**ECAL 105 Electrical Safety I and NFPA 70E (1)**

This course is a study of electrical safety and the rules for safe work practices set forth by OSHA and NFPA 70E, the standard for electrical safety in the workplace. In this course you will look at procedures to work safely around electrical systems and how to create an electrically safe work environment. (F)

**ECAL 111 Electric Meters and Motors Lab (3)**

A practical, hands-on course using various electrical testing equipment to troubleshoot and test electric motors, components, and wiring systems. A study of single and three phase AC motors, their construction features and operating characteristic's. This lecture/lab class emphasizes electric motor terminology, identification of motor types, enclosures, mounts, motor selection, connections, maintenance, testing and troubleshooting. Students are also introduced to motor loads, protection, controls, and devices used to connect motors to their loads such as pulleys, v-belts, gearboxes, and couplings. (F, S)

**ECAL 133 Basic Wiring Lab (3)**

This is an introduction to basic electricity, basic wiring methods, and materials and tools used in the electrical industry. Actual circuit layout and installation is done according to the rules of the National Electrical Code and other applicable state and local codes. (F, S)

**ECAL 137 Electrical Drafting (2)**

This is a lecture and laboratory course dealing with the application of Computer Aided Drafting (CAD), using AutoCAD drafting software, as well as some reading and interpretation of blueprints from an electrician's perspective. (F, S)

**ECAL 197 Cooperative Education (1-5)**

Cooperative education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**ECAL 201 Three-Phase Electrical Systems (5)**

This course is a study of three-phase alternating current circuits, electrical instruments and the theory, operation and connection of transformers. Students will study the theory, operation and connection of three-phase wye and delta circuits and the relationship of voltage, current and power in these circuits. Students will also study the harmonics of the effects of the building electrical systems. Prerequisite: ECAL 102. (F)

**ECAL 203 Advanced Electrical Code Study (3)**

This course is a continuation of ECAL 103. Chapters 4 through 8 of the National Electrical Code (NEC) are studied in this course. There is special emphasis on hazardous locations and applications. Prerequisite: ECAL 103. (S)

**ECAL 204 Electrical Planning and Estimating (4)**

This course is a culmination of all the student's previous learning experiences. It incorporates code classes, lighting and design, AutoCAD, wiring labs and theory classes. The course is designed to teach the student how to read and understand a set of prints in conjunction with a specification book, familiarize the student with the various materials, an emphasis on layout procedures, labor, and two different estimating techniques to develop a reasonable "bid" price for various projects. (S)

**ECAL 205 Electrical Design and Lighting (3)**

A class discussion course dealing with electrical material and equipment sizing, layout and application, applicable wiring codes, regulations and rules, and characteristics of common electrical distribution systems as used in industrial plants and commercial building locations. Included is a study of short circuit current, current limiting and coordination, power factor correction and electrical rates. This course includes the study of modern illumination principles, calculation procedures and equipment for lighting installations. (S)

**ECAL 211 AC Measurements (4)**

This lecture/lab course consists of a series of experiments to investigate the characteristics of single-phase and three-phase electrical circuits. The connections and testing of transformers in both single-phase and three-phase configurations are stressed. Students also learn the operation of three phase motors from conventional sources. Corequisite: ECAL 201. (F)

**ECAL 223 Electronic Devices/Lab (4)**

This course covers the foundations of electronics, the devices used in electronic circuits, how they function, and the proper handling of electronic components. This course will also cover the proper operation and use of test equipment such as multimeters and oscilloscopes used in industry for testing and troubleshooting equipment. (F)

**ECAL 224 Automated Industrial Controls Lab (5)**

This is a lecture/lab course that will cover digital electronics, basic pneumatic and hydraulic principles, and basic robot operations and programming. The final lab projects will include principles from all elements covered. (S)

**ECAL 233 Commercial Wiring Laboratory (3)**

This course will introduce the student to many different wiring methods and equipment used in the electrical industry in commercial and industrial electrical environments. Provide examples of tools, materials and procedures utilized by electricians in the fast paced and rapidly changing electrical field of today. Prerequisites: ECAL 103, ECAL 133. Corequisite: ECAL 203. (S)

**ECAL 237 House Wiring Rough-In (1)**

This course will introduce the student to the logistics and procedures involved with wiring of a residential dwelling. (F)

**ECAL 238 House Wiring Trim-Out (1)**

This course will introduce the student to the logistics and procedures involved with the proper trim-out of a residential dwelling. (S)

**ECAL 241 Basic Motor Controls Lab (3)**

A lecture and laboratory class oriented to the study of electromechanical control system concepts. Experiments are designed to illustrate the principles, applications, connection and installation procedures of electrical controllers. Special emphasis is placed on the analysis and development of motor control circuits. (F, S)

**ECAL 242 Advanced Drives/Lab (2)**

This is a lecture and laboratory course dealing with the theory, construction, application, installation, and programming of Variable Frequency Drive (VFD) motor controllers. VFDs are an increasingly common method of controlling motors and their related processes. Students will program a variety of controllers to learn the limitations and capabilities of each device. We will also be configuring programmable controllers to communicate with the drives, as well as communications with Human Machine Interfaces (HMIs). This course is a two credit class that will meet for one hour four times per week. (S)

**ECAL 243 Programmable Logic Controllers Lab (3)**

This is a lecture and laboratory course dealing with the theory, construction, application, installation and programming of microprocessor-based programmable controllers. Logic networks solving typical industrial control problems are developed and programmed into a variety of controllers to learn the limitation and capabilities of each machine. (F, S)

**ECAL 245 Medium and High Voltage (1)**

This lecture/lab course covers medium- and high-voltage electrical theory, conductors, insulators, overcurrent devices, testing, termination, safety precautions and safety equipment. (F, S)

**ECAL 246 Alarm, Communications and Data Systems (3)**

Installation and maintenance of alarms, communications and data is considered a specialty branch of electrical work. In this course you will understand the unique terminology associated with these systems, describe the relationship between these systems and life safety by various codes and standards that affect both commercial and residential buildings. The course will describe the characteristics and functions of various alarm system components, explain the different types of circuitry (hard wired and wireless) that connects these components and describes the theory behind conventional, addressable and analog systems to better understand how these systems function. The lab portion of this class includes handling and splicing of fiber optics, networking, structured wiring, data, satellite communications, all types of alarms (fire, security and community warning-tornado-civil defense) and video surveillance/recording. (These technology/revolutionary-based systems are subject to rapid change and every effort will be made to reflect any changes in technology. (F)

**ECAL 253 Introduction to Instrumentation Lab (3)**

This course introduces the basic concepts of instrumentation and process control. The focus of the course is on negative feedback proportional control loops and their application in industry. This course will focus on the understanding of those systems used in the process control industries. (S)

**ECAL 254 Instrumentation and Control Systems (4)**

This lecture/lab course covers the concepts of process control. Concepts include the terminology and functions of the devices used in control systems. The primary focus of this course will be on the role the controller plays in a process. (S)

**ECAL 255 Process Measurement and Control Valves (4)**

This lab/lecture course deals with the operation and function of devices used to measure the process output of a control loop. Control valves and actuators are also included. Lab time is spent on experimentation and calibration of the devices. (S)

**ECAL 261 HVAC and Building Systems (2)**

This is a lecture/lab course which examines the basic components used in refrigeration and air conditioning systems and their electrical circuits. The course focuses on identifying whether the system has failed due to an electrical problem or a mechanical problem. The building envelope is studied to verify proper size equipment or to use electric heat. Energy usage/efficiency will be discussed to maximize savings where possible. Lastly, building usage and scheduling will be studied where systems allow further control of the system to reap energy savings (introduction of building automation). (F)

**ECAL 263 Distributed Electrical Systems (3)**

This course is a lecture/discussion course which examines today's need for more flexible energy systems. The basic components used in distributed generation systems will be discussed as well as the various types (solar, wind, engine drive, etc.). The NEC and wiring perspectives of various systems will also be studied. The students will be required to do research into modern systems as well as consult various industry resources for additional information. (F)

**ECAL X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**ECAL 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their field of study. It is required that a student has successfully completed one year of academic study.

**ECAL 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(ECON) ECONOMICS****ECON 105 Elements of Economics (3 credits)**

An introductory survey of basic economic principles including supply and demand, national income analysis, business cycles, money and the monetary system, and an analysis of competitive and imperfect market structures; as well as a review of selected contemporary economic issues. (F, O) ND:SS

**ECON 201 Principles of Microeconomics (3)**

Nature, method, and scope of economic analysis; economic scarcity, resources, specialization of labor; supply-demand analysis; production and cost analysis; product and resource market structures, distribution of income; international trade. (F, S) ND:SS

**ECON 202 Principles of Macroeconomics (3)**

Aggregate income and employment analysis; business cycles, unemployment, inflation and economic growth; fiscal policy; money and monetary policy; the U.S. economy and the world economy. (S) ND:SS

**ECON X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**ECON 299 Special Topics (1-9)**

A course designed to meet special departmental needs.



**(EMS) EMERGENCY MEDICAL SERVICES****EMS 100      Emergency Medical Responder (EMR)  
(2 credits)**

This is an entry-level emergency medical responder (EMR) course which will prepare the student for employment or a volunteer position in a variety of pre-hospital settings. This course will prepare students to provide initial stabilizing care to the sick or injured prior to the arrival of a higher level of Emergency Medical Services (EMS) professionals. This course focuses on the core skills, knowledge and protocols within the EMR scope of practice as defined by the U.S. Department of Transportation. Students will be prepared to identify, assess, manage, and treat various types of pre-hospital traumatic and medical emergencies. (F, S, Su)

**EMS 101      Introduction into EMS (2)**

This course prepares students with the fundamentals of Emergency Medical Services (EMS). During this course, 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 is an introductory course which will prepare the student to work in the emergency medical field as an Emergency Medical Technician (EMT). This course will prepare 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 the laboratory is to discuss, perform and relate the concepts taught in the EMT 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. (F, S, Su)

**EMS 110P      EMT Practicum (1)**

This course will introduce the EMT student to pre-hospital operations and patient care. During this course, students will have the opportunity to ride with ambulance services and assist preceptors in the care of pre-hospital patients. The student will function 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 170      Trauma I (2)**

This course prepares the student to identify, assess, manage, and treat various types of trauma emergencies. This is the first of a two-part series. (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 the students for the objectives associated with pharmacology in the pre-hospital setting. Students will learn advanced pathophysiological effects of drugs on the body and medications associated with advanced treatment modalities. (F)

**EMS 204      Medical Emergencies I (2)**

This course is the first of a two course series that prepares the paramedic to identify, assess, manage, and treat various medical emergencies. 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. (S)

**EMS 207      Special Populations in EMS (2)**

This course prepares the paramedic student to identify, assess, manage, and treat age related emergencies and other special patient population challenges. This course also introduces the paramedic student to the breadth of teamwork with fellow healthcare, first responder and public safety entities. (S)

**EMS 215      Cardiology (4)**

This course prepares the paramedic student to identify single and multi-lead cardiac rhythms and treat those rhythms considered to be life-threatening with electrical and pharmacological therapy. Skills include, but are not limited to assessment, defibrillation, cardioversion and cardiac rhythm interpretation. (F)

**EMS 217      Pulmonology (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      Cardio-pulmonology (1)**

This course prepares the paramedic student to utilize their introductory knowledge of airway management, pharmacology, cardiac conditions and other concepts to understand, recognize and treat various advanced airway conditions. (S)

**EMS 219      Trauma II (1)**

This course prepares the student to identify, assess, manage, and treat various types of trauma emergencies and prepares the student to perform various aspects of ambulance operations. This is the second in a two-part series and moves into more advanced assessments and treatments. (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 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)

**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. (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 299A Special Topics in History (1-3)**

Topics in United States history and/or European history to be offered on the basis of student interest. Prerequisite: HIST 104 or HIST 102 or instructor consent. (As needed)

**HIST 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(HIT) HEALTH INFORMATION****HIT 176 Introduction to Health Information (4 credits)**

Introduction to health record practice and the health information profession. Students will study health record, functions, content, documentation, purposes, and users of health information including secondary data sources and data sets. Students will be introduced to legal and ethical issues, including data privacy, confidentiality, and security standards. Students will explore ethical issues in health information management. Students will use virtual lab software applications. Web-based instruction. Prerequisites and/or Corequisites: None. (F, O)

**HIT 180 Pathopharmacology (3)**

Emphasis on the specific disease processes affecting the human body systems via an integrative approach to specific disease entities, including the study of causes, diagnosis, and treatment of disease. The study of drug actions, including the absorption, distribution, metabolism, and excretion of drugs by the body. Emphasis on most commonly prescribed drugs, the drug formulary, and on matching drugs to common conditions and correlating lab findings. Web-based instruction. Prerequisite: BOTE 171. (S, O)

**HIT 181 Healthcare Delivery Systems (3)**

A study of health information management (HIM) in various health care settings. Includes an overview of each health care setting and specific documentation requirements, regulatory issues, reimbursement, information management, quality assessment, utilization management, risk management/legal issues, the role of the HIM professional and future trends related to each setting. Prerequisite: HIT 176. (S, O)

**HIT 184 Basic Diagnosis Coding (3)**

An introduction to the basic coding guidelines using the current coding classification system. Students will practice the application of diagnosis and procedure codes, validating coding accuracy using clinical information found in health records. Current regulations, established guidelines, and ethical principles will be studied and applied to coding cases. Encoder systems and software are used. Web-based instruction. Prerequisites: BOTE 171, BIOL, 220. Corequisite: HIT 180, BIOL 221. (S, O)

**HIT 185 Basic Procedure Coding (3)**

An introduction to the basic coding guidelines of the Current Procedural Terminology (CPT) nomenclature. Students will practice the application of CPT/HCPCS codes, validating coding accuracy using clinical information found in the health record. Current regulations, established guidelines, and ethical principles will be studied and applied to coding cases. Encoder systems, computer assisted coding, and software are used. Web-based instruction. Prerequisites: BOTE 171 or BIOL 220. Corequisites: HIT 180, BIOL 221. (S, O)

**HIT 197 Professional Practice I (2)**

A virtual professional practice experience following completion of all first year courses. Provides reinforcement and application of concepts studied in the first year, with hands-on experiences and simulations using actual health records and software applications. Web-based instruction. Prerequisites: All first year HIT program courses. (Su, O)

**HIT 197C Practicum (2)**

A virtual professional practice experience emphasizing practice with clinical code assignment using a variety of health record types/encounters. Focus on acceptable coding practices, clinical code assignment, and billing methodologies. Emphasis on building speed and accuracy. Encoder technology including coding reference software applications will be used. CCA examination preparation and career exploration will also be covered. Anticipated 40 hours of coding and additional time spent on related projects and case studies. Prerequisite: All program courses. (F, O)

**HIT 280 Coding Application (2)**

Students will review the basic coding guidelines and will practice the application of diagnosis and procedure codes. Application of ICD-10-CM/PCS, Current Procedural Terminology (CPT) and HCPCS codes. Validating coding accuracy using clinical information found in health records. Ethical coding standards will be applied and promoted while adhering to current regulations and established guidelines in code assignment. Encoding technology including coding reference software applications will be used. Web-based instruction. Prerequisites: HIT 184 and HIT 185. (F, O)

**HIT 281 Health Law, Privacy and Ethics (3)**

The study of health law, privacy, security, confidentiality, access, release, and ethical issues. Application of healthcare legal terminology, concepts, and principles to legal documents related to the practice of health information management. Health records and health information software applications are used. Web-based instruction. Prerequisite: HIT 176. (S, O)

**HIT 282 Health Information Data Analytics (3)**

A study in the basics of statistics and data analytics. Application of descriptive statistics and data analysis in healthcare settings. Advanced data analysis techniques will be explored. Software applications will be used for organization, analysis, and presentation of data. Web-based instruction. Prerequisite: HIT 176. (F, O)

**HIT 283 HEALTH INFORMATION LEADERSHIP (2)**

Practical instruction in management principles from a health information management perspective with both theory and practice examples. Leadership roles, including strategic planning, financial management, and information governance will be studied. Teamwork, communication, change management, work design and process improvement will be covered. Staffing, productivity, federal regulations and laws, training and development, cultural diversity and ethics will be examined. Web-based instruction. Prerequisite: HIT 176. (F, O)

**HIT 284 Healthcare Quality Management (3)**

A study of the principles of performance improvement models, utilization management, and risk management in health care. 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 health care payment systems and their effects on the US healthcare delivery system. Functions and history of each major payment system are studied. Compliance strategies, clinical documentation improvement, fraud surveillance measures, and reporting requirements will be discussed. Ethical standards of practice will be studied. Organization, analysis and presentation of data using software applications. Web-based instruction. Prerequisites: HIT 176, HIT 184, HIT 185. (S, Su, O)

**HIT 286 Intermediate Diagnosis Coding (3)**

An in-depth study in the application of diagnosis coding to higher-level case scenarios using the current classification systems including diagnosis and procedure coding reviews. Prospective payment systems will be studied. Coding compliance and ethical coding practice will be reinforced. Coding software including encoders and references will be used. Web-based instruction. Prerequisites: HIT 176, HIT 184, HIT 185. (S, Su, O)

**HIT 287 Computer Applications in Health Care (3)**

Introduction to systems and common software applications and their use in healthcare informatics including data quality, database architecture and design, health information exchange, data storage and retrieval. System evaluation and acquisition and project management will be discussed. Use of PHRs and patient portals will be explored. Web-based instruction. Prerequisite or Corequisite: HIT 176. (F, O)

**HIT 288 Intermediate Procedure Coding (3)**

An in-depth study in the application of procedure coding to higher-level case scenarios using current classification systems, including diagnosis and procedure coding reviews. Procedure based payment systems will be studied. Coding compliance and ethical coding practice reinforced. Coding software including encoders and references will be used. Web-based instruction. Prerequisites: HIT 176, HIT 184, HIT 185. (S, Su, O)

**HIT 297 Professional Practice II (2)**

A virtual and on-site professional practice experience following completion of all program courses. Provides hands-on experience with technical skills in an online environment designed to simulate the activities that would be completed in an HIM setting. Certification examination preparation and career exploration are covered. 40 hours of hands-on experiences are completed at a(n) 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. (F, Su)

**(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. (F, S)

**(Camping and Hiking) (1):** Active participation in camping and hiking and the following related activities: planning campfire meals, campsite set up, campfire preparation, campfire cooking, safety, no trace camping, tenting and evening camping entertainment. Students participate in two class meetings and perform the camping and hiking activities during the weekend retreat. Little Yellowstone State Park in Kathryn, North Dakota is a favorite camping and hiking location. (S)

**(Intro Level Golf) (1):** This course covers active participation in beginning golf. A course designed for beginners. It teaches the beginner the proper grip, stance, swing and rules. (As needed)

**(Intro to Basketball) (1):** Students will have an opportunity to learn intermediate basketball skills through demonstration and discussion of strategies for team play. This course will advance the skills of the student who successfully completed the beginning basketball course. Emphasis is on individual participation and competition team play. (As needed)

**(Intro to Ice Fishing) (1):** A course designed for beginners who will partake in active participation in ice fishing. Class participants will attend two meetings and one weekend outing. Upon completing requirements, a grade will be issued. In order to receive a passing grade, participant must attend two days of ice fishing. (As needed)

**(Intro to Zumba) (1):** Zumba is a Latin inspired, dance-fitness class that incorporates Latin and International music and dance movements, which create a dynamic, exciting, and effective fitness system. Zumba integrates some of the basic principles of aerobic, interval, and effective fitness resistance training to maximize caloric output, cardiovascular benefits, and total body toning. Zumba provides a non-intimidating opportunity for non-dancers to participate in a group aerobics class.

**(Power Walking) (1):** Whether this is your first experience in exercise walking, or you are a walking pro, this course provides the fundamentals of power walking techniques, mechanics and flexibility exercises. (As needed)

**(Snowboarding) (1):** This class is a course for beginners. Two class meetings plus 20 to 24 hours in instruction and/or practice on nearby commercial slopes. (As needed)

**(Social Dance) (1):** Emphasis on such basic steps as jitterbug, waltz, two-step, polka, fox trot and a few folk dances. Emphasis on dancing the above and distinguishing the differences in the music. (S)

**(Strength Training) (1):** Active participation in physical activity. A combination of free weights, weight machines and various stations will be utilized in an attempt to improve strength and endurance. (As needed)

**(Tae Kwon Do) (1):** To introduce students to the basic skills and terminology of Tae Kwon Do, self-defense, physical and mental wellness. (As needed)

**(Team Sports) (1):** Active participation in seasonal activities including flag football, softball, volleyball and basketball. (As needed)

**(Tenting and Canoeing) (1):** Covers the active participation in tenting and canoeing in a group setting over two days. Canoeing is done on the Crow Wing River through the Menahga-Huntersville area of Minnesota. Includes outdoor activities related to camping such as outdoor cooking, safety, no trace camping and evening camping recreational activities. Students participate in two class meetings and one weekend retreat. Canoes are provided. (F)

**(Trapshooting) (1):** This course will be an introductory level course on the art of trapshooting. Safety and etiquette will be a priority and a must! Student will gain an insight into the history, technique, and experience single and skeet shooting. (F, S, Su)

**(Wallyball/Volleyball and Racquetball) (1):** Active participation in wallyball, volleyball and racquetball with emphasis on basic skills, strategy, rules and terminology. (As needed)

**(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 102 Activity: Intermediate Level

**(Advanced Circuit 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. Designed for the varsity athlete as a supplement to his or her sport. (Hours arranged)

**(Advanced Physical Conditioning) (1):** Active participation in physical activity. A combination of free weights, weight machines and plyometric exercises will be utilized in an attempt to improve overall physical condition. Designed for the varsity athlete as a supplement to his or her sports. (Hours arranged)

**(Advanced Weight Lifting) (1):** Active participation in weight lifting. Emphasis on the use of free weights. Stressing strength and endurance development. Designed for the varsity athlete as a supplement to his or her sport. (Hours arranged)

**(Advanced Weight Training) (1):** Active participation in weight training. A combination of free weights and weight machines are utilized in an attempt to develop and maintain muscle tone. Designed for the varsity athlete as a supplement to his or her sport. (Hours arranged)

## 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

**(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

**(Basketball) (1):** Daily practice and participation in intercollegiate basketball. (S)

**(Football) (1):** Daily practice and participation in intercollegiate football. (S)

**(Softball) (1):** Daily practice and participation in intercollegiate softball. (S)

**(Volleyball) (1):** Daily practice and participation in intercollegiate volleyball. (S)

**HPER 197 Practicum in Sports Medicine I (1)**

Practicum in Sports Medicine I provides the student athletic trainer with the basic knowledge of policies and procedures of the training room facility. It introduces students to the athletic department members, college athletic team atmosphere, and athletic injury care. Students learn basic athletic injury treatment and first aid procedures through hands-on contact with varsity athletes. Students observe varsity practices and games throughout the semester. Practicum in Sports Medicine I is an arranged time schedule and takes place under the direct supervision of a Certified Athletic Trainer. (F)

**HPER 200 Introduction to Parks and Recreation (2)**

A beginning course in the study of recreational programs including those in parks, schools, youth agencies, therapeutic institutions, camps, industry and municipal youth agencies. (F)

**HPER 201 Introduction to Coaching (2)**

This course is designed to allow students to acquire knowledge in base fundamentals of specific skills and positions. Develop a framework of beliefs on issues within the sport. Devise a process of game plan preparation. (As needed)

**HPER 207 Prevention and Care of Injuries (3)**

This course will provide students with the principles of athletic training. Students will learn prevention, recognition, treatment of athletic injuries, organization and administration of athletic training and basic taping techniques. (S)

**HPER 208 Introduction to Physical Education (2)**

Designed for students who may be considering a career as a qualified teacher in physical education. Covers the history, philosophy, principles, nature and scope of the professional field of physical education. Related career opportunities in the fields of fitness and sport are also examined. (S)

**HPER 210 First Aid and CPR (Professional/Community) (2)**

Provide students with the knowledge and skills necessary to respond to an emergency. Preparing students to identify, assess, manage and minimize consequences of injury (minor and major) and sudden illness in medical emergencies. Providing options for professional level of training, this course is outlined by the American Heart Association and will follow those guidelines. This course is outlined by the American Heart Association and will follow those guidelines. Certification 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 certification 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**

**(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**

**(Basketball) (1):** Daily practice and participation in intercollegiate basketball. (S)

**(Football) (1):** Daily practice and participation in intercollegiate football. (S)

**(Softball) (1):** Daily practice and participation in intercollegiate softball. (S)

**(Volleyball) (1):** Daily practice and participation in intercollegiate volleyball. (S)

**HPER X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**HPER 297 Practicum in Sports Medicine II (1)**

The purpose of Practicum in Sports Medicine II is to give further instruction toward the principles and practices of athletic training. The instruction will be hands-on and will take place on on-campus facilities under the direction of a Certified Athletic Trainer. Practicum schedule will be arranged individually for the entire semester. (S)

**HPER 299 Special Topics (1-4)**

A course designed to meet special departmental needs.

**(HUM) HUMANITIES****HUM 211 Integrated Cultural Excursion: Regional and Cultural Studies (1-3 credits)**

This course offers the student an opportunity to study and experience the culture of another region of the United States or world at large with an emphasis on history, architecture, art, literature, populace, geography, political system, and multiculturalism. The course includes pre-trip planning and lectures, itinerary, trip journals, study and research, and post-trip presentations. ND:HUM

**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 include: Music Appreciation (MUSC 100), Fundamentals of Music (MUSC 101); Mythology (ENGL 232); World Literature Masterpieces (ENGL 240); Ethics (PHIL 210) and World Religions (RELS 203).

**(HVAC/R) HEATING, VENTILATING, AIR CONDITIONING AND REFRIGERATION TECHNOLOGY****HVAC/R X92 Experimental Course (1-9 credits)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**HVAC/R 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**HVAC/R 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(JDAT) JOHN DEERE TECH****JDAT 105 Supervised Occupational Experience I (2 credits)**

The student will receive on-the-job experience at a John Deere dealership prior to the first-semester, on-campus classes. This will mainly consist of shadowing personnel in the three areas of the service department. Two weeks will be spent in the set-up area, two weeks in the combine area and two weeks in the tractor area. This work experience will be supervised by the NDSCS John Deere Tech coordinator. (Su)

**JDAT 106 John Deere Time Service Management (2)**

This course covers operational policies followed by the dealership service department. Included will be discussion on time service management, publications, tech manuals, DTAC and service advisor.

**JDAT 110 Supervised Occupational Experience II (5)**

The student will receive on-the-job experience in a John Deere dealership. This will allow the student to practice and utilize the skills and knowledge learned during the previous on-campus instructional period. This work experience will be supervised by the NDSCS John Deere Tech coordinator. (S)

**JDAT 114 Supervised Occupational Experience III (5)**

The student will receive on-the-job experience in a John Deere dealership. This will allow the student to practice and utilize the skills and knowledge learned during the previous on-campus instructional period. This work experience will be supervised by the NDSCS John Deere Tech coordinator. (F)

**JDAT 116 John Deere Equipment Operation and Adjustment (4)**

This course will cover the operation and adjustment of various types of John Deere equipment. Students will operate and field adjust this equipment for optimum performance.

**JDAT 155 Introduction to Electrical/Electronics (4)**

A lab/lecture demonstration and performance type of course, which covers the principles of electricity. These types of learning styles will be applied to electrical circuits, batteries, starters and alternators. It will include Ohm's Law, schematic reading, test instruments, starter testing and repair and alternator testing and repair. Applications and testing of solid state devices will be covered in this course. The student will have hands on approach to learning electrical fundamentals as well as repairing and troubleshooting electrical problems on John Deere equipment. This class is a prerequisite for JDAT 255.

**JDAT 165 Introduction to John Deere Hydraulic Systems (4)**

This course is a study of hydraulic system fundamentals and various components used in a typical John Deere hydraulic system. Disassembly and reassembly of John Deere components will take place to aid in the understanding of component and system operation. Various John Deere components will be bench tested to help the student understand how the components contribute to the overall operation of the system and will be used to evaluate the students' performance. Experiments will be performed on lab equipment to aid in the understanding of basic hydraulic principles. Online delivery methods from John Deere Company along with table exercises and/or machine tests will be utilized to prepare student for John Deere University Hydraulic Systems Certification. This class is a prerequisite for JDAT 265.

**JDAT 215 John Deere Engine Rebuild (6)**

A lab/lecture course covering diesel engines used in John Deere equipment. Students will disassemble, reassemble, adjust and test these engines. The proper use of technical manuals will be stressed. Prerequisite: DTEC 115.

**JDAT 225 John Deere Powertrains (7)**

A lab/lecture course covering the power train used in John Deere tractors. Students will disassemble, reassemble, adjust and test these components. Proper use of technical manuals will be stressed.

**JDAT 255 John Deere Electrical/Electronics (5)**

A lab/lecture course covering electrical and electronic fundamentals applied to John Deere equipment. This course includes the study of Ohm's Law and series and parallel circuits. The proper use of digital multimeters and other testing equipment also will be covered. Techniques of circuit diagnosis will be demonstrated with electrical schematics. The function, operation and testing of semiconductors and transistors are covered. Microprocessor operation, including inputs and outputs, are explained and studied. Tractor circuits including lighting, accessory, safety, instrumentation and gauges are tested. Electronic monitoring systems for planting and harvesting equipment are covered. Prerequisite: JDAT 155.

**JDAT 260 Introduction to Ag Management Solutions (AMS) (3)**

A lab/lecture course designed to introduce the students to John Deere's Ag Management Solution systems (AMS). Basic GPS equipment guidance systems operation and diagnostics will be utilized. Types of GPS signals and their applications currently used by John Deere Company will be covered. AMS display set-up and application usage on current John Deere equipment will be performed. Prerequisite: JDAT 255.

**JDAT 265 John Deere Tractor Hydraulic Systems Diagnosis (5)**

A lab/lecture course covering the operation, testing, diagnosis, and repair of the hydraulic systems found on John Deere utility, row-crop and four-wheel-drive tractors. Prerequisite: JDAT 165.

**JDAT X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**JDAT 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(KMTS) Komatsu****KMTS 106 Introduction to Komatsu Service (3 credits)**

This course introduces the student to the Komatsu organization and the different parts of the company. Instruction and lab experiences in the shop include MSHA safety, forklift training, shop operations and operational policies followed by the dealership service department. Included will be discussion on KOMTRAX, publications, tech manuals and other literature specific to Komatsu products. This course will also introduce the student to the Komatsu Service Certification program. The students will plan a class trip to the Komatsu Training Center at Cartersville, GA to be scheduled sometime in their second year of study. (Su)

**KMTS 110 Komatsu Internship I (4)**

The student will receive on the job experience at a Komatsu dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the last 8 weeks of the first year. (2nd 8-weeks spring semester)

**KMTS 210 Komatsu Internship II (5)**

The student will receive on the job experience at a Komatsu dealership. This will consist of performing basic repair procedures in the service department. This internship will occur the first 8 weeks of the second year. (1st 8-weeks fall semester)

**KMTS 215 Komatsu Engine and Fuel Systems (4)**

A theory and lab course covering the construction, operating principals, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures, measurement fundamentals, performance and engine troubleshooting associated with Komatsu engines. Fuel system identification, theory of operation and troubleshooting of fuel systems will also be covered in this course. This is an 8 week course. Prerequisite: DTEC 115. (F)

**KMTS 220 Komatsu Internship III (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 spring semester)

**KMTS 225     Komatsu Powertrains and Undercarriage (4)**

A lab/lecture course covering the powertrain systems used in Komatsu equipment. Mechanical shift and power shift transmissions will be covered in this course. Students will disassemble, reassemble, adjust and test these components found on Komatsu construction equipment. The course also introduces the student to undercarriage and drive systems used on different Komatsu Track Machines. Also covered are final drives and braking systems used in Komatsu track and wheel equipment. Prerequisite: DTEC 125. (Su)

**KMTS 255     Komatsu Electrical/Electronics (4)**

A lab/lecture course covering electrical and electronic systems for the engine, hydraulics, machine controls and the Tier 4 emission systems as applied to Komatsu construction equipment. Techniques of circuit diagnostics will be demonstrated with electrical schematics. The function, operation and testing of Komatsu equipment will be covered with the Electronic Services Tools. Microprocessor operation including inputs and outputs are explained and covered. Circuits including lighting, accessory, safety instrumentation and gauges are tested. This course will include all Komatsu construction equipment. Prerequisite: DTEC 155. (S)

**KMTS 265     Komatsu Advanced Hydraulic Systems (4)**

A lab/lecture course covering the diagnostics, service and repair of the hydraulic functions on Komatsu construction equipment. Open center, closed center and load sensing systems are covered as well as steering, hydrostatic drives and hydraulic functions of Komatsu equipment. Prerequisite: DTEC 164. (S)

**(MATH) MATHEMATICS**

Student placement in a mathematics course is subject to ACT-MATH scores or the ACCUPLACER placement test scores or Academic Services Center 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)

**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: ASC 092 or placement test. (F, S, Su, O)

**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: 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: ASC 093 or placement test. (F, S, O) 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; applications. Students cannot receive credit for both MATH 105 and 107. Prerequisite: MATH 103 or placement test. Offered only on demand. ND:MATH

**MATH 108     Business Mathematics**

(See BOTE 108)

**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 percents in solving everyday problems. The application of business and consumer mathematics such as simple and 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, and volumes and fundamental geometry. (F, S)

**MATH 125     Basic Mathematics III (2)**

Basic concepts and features of beginning algebra with emphasis on critical thinking and problem solving. Topics include properties of real and rational numbers, arithmetic operations of numbers and expressions, translating verbal expressions to variable expressions, formula manipulations and application of word problems. (F, S)

**MATH 130     Technical Mathematics (2)**

A review of whole numbers, fractions and decimals using U.S. measurements. The application of ratio and proportion, direct measure, perimeter, area and volume with a construction emphasis. (F, S-Online/Fargo)

**MATH 132     Technical Algebra I (2)**

A basic algebra course for students enrolled in technology programs. Topics include properties of real numbers, algebraic expressions, solving equations, polynomials, factoring, formula manipulations and problem-solving. (F, S, O)

**MATH 134     Technical Algebra II (2)**

A continuation of MATH 132. For students who need advanced skills in algebra for application in technical courses or as a preparation for intermediate algebra. Topics include linear and simultaneous equations, quadratic equations, logarithmic and exponential equations, decimal, binary, hexadecimal and BCD base conversions. Prerequisite: MATH 132. (S)

**MATH 136     Technical Trigonometry (2)**

A study of the fundamentals of trigonometry. Right triangle trigonometry, the Law of Sines, the Law of Cosines and Vectors. Emphasis is placed on problem-solving for the technology fields. Prerequisite: MATH 132. (F, S, S-Online)

**MATH 137     Applied Algebra (3)**

An intermediate algebra course for students enrolled in technology programs. Topics include properties of real numbers, algebraic expressions, factoring, formula manipulation, graphing, linear equations, quadratic equations, solving systems of equations, simultaneous equations, exponents, radicals and logarithmic equations.



**MATH 138 Applied Trigonometry (3)**

A theory/lab course studying the fundamentals and applications of trigonometry, including right and oblique triangles, the Law of Sines, the Law of Cosines, vectors, angular velocity, graphs and complex numbers.

**MATH 146 Applied Calculus I (4)**

Limits, derivatives, integrals, exponential, logarithmic, and applications. Prerequisite: a) MATH 103 or placement test or b) MATH 103 or MATH 104 or placement test. (F) ND:MATH

**MATH 147 Applied Calculus II (4)**

Definite integrals, trigonometric functions, introduction to differential equations, infinite sequence and series, probability, and applications. Prerequisite: MATH 146 or placement test. (As needed) ND:MATH

**MATH 165 Calculus I (4)**

Limits, continuity, differentiation, Mean Value Theorem, integration, Fundamental Theorem of Calculus and applications. Prerequisite: ACT score 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. Prerequisite: MATH 165. (S) ND:MATH

**MATH 210 Elementary Statistics (3)**

An introduction to statistical methods of gathering, presenting and analyzing data; estimating means, proportions, confidence intervals, and testing hypotheses; probability and probability distributions; and linear regression and correlation. Prerequisite: ASC 093 or placement test. (F, S, O) ND:MATH

**MATH 227 Applied Linear Algebra (3)**

Systems of linear equations, vector and matrices, and numerical applications. The mathematical study of matrices, determinants, vector spaces, subspaces, inner product spaces, linear transformations, eigenvalues, and eigenvectors. Prerequisites: MATH 165 or concurrent with MATH 165. (S-even years)

**MATH 265 Calculus III (4)**

Multivariate and vector calculus including partial derivatives, multiple integration, applications, line and surface integrals, Green's Theorem, Stoke's Theorem. Prerequisite: MATH 166. (F) 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, applications. Prerequisite: MATH 265 or departmental approval. (S) 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 Precision Machining Theory course introduces the safe use and functional purpose of hand tools, layout tools, and measuring instruments. Fundamentals in the use of lathes and vertical milling machines including all of the basic procedures used to produce machined parts are explained and studied in detail. Horizontal and vertical sawing machines are also introduced. Proper use and identification of cutting tools for these machines are learned. Safe machine shop practices are studied and are applied in MATL 111. (F)

**MATL 102 Machine Tool Theory II (4)**

The Precision Machining Theory course introduces the safe use and functional purpose of surface grinders and cylindrical grinding attachments. CNC tool room lathe and mill applications will be studied, and introductory CNC programming will be introduced. Advanced processes for manual mills and lathes, as well as rotary tables and indexers will be included in the course. Carbide insert and tool holder nomenclature and application is learned. Metallurgy and heat-treating processes will be covered and students will have the opportunity to apply these technologies in MATH 112. (S)

**MATL 111 Machine Tool Lab I (7)**

This introductory course to Precision Machining begins with the use of basic tools such as hammers, punches, layout tools, files, drills, taps, and reamers. Students will learn the proper techniques to sharpen drills, layout parts, drill and tap holes, and properly deburr parts using files and abrasives. Fundamentals in the use of the drill press, lathe, vertical mill, and horizontal and vertical saws, includes all of the basic procedures to produce machined parts on these machines. Proper measuring tool use and applications will be practiced. Safety techniques in the use of tools and equipment will be stressed. (F)

**MATL 112 Machine Tool Lab II (7)**

This course will continue to expand on machining operations studied and applied in MATL 111. More advanced practices for lathes, vertical milling machines, and metrology including CMM operation will be introduced. New technologies utilized shall consist of surface grinding, metallurgy, and CNC turning and milling operation and setup. Students will set tool and work offsets and use conversational programming to produce parts on CNC tool room lathes and mills. Safety techniques in the use of tools and equipment will continue to be applied. (S)

**MATL 201 Toolmaking Theory I (3)**

The design and application of cutting tools and tool holders will be studied. The theory and procedures for setup and operation of Wire and Sink Electrical Discharge Machining (EDM), along with the tooling involved in these processes, will also be covered. Toolmaking procedures for the design and construction of jigs, fixtures, and inspection gages will be included in the coursework. Students will study the design, construction, and terminology involved with metal stamping dies including blank and pierce, compound, progressive, and bending and forming dies. (F)

**MATL 202 Toolmaking Theory II (2)**

An introduction to plastic injection molding and the procedures and practices used to design and build plastic injection molds. Types and uses of plastics will be studied along with other types of molding processes such as die-casting, extrusion, compression molding, thermoforming, blow molding, and rotational molding. Emphasis will be placed on the theory and design of plastic injection molds including standard, cam, stripper plate, 3-plate, and unscrewing molds. The study of cold runner and hot runner systems will be included in the coursework. (S)

**MATL 205 CNC Theory and Operation (4)**

The principles of Computer Numerical Control of machine tools are studied. The lathe and vertical mill are two of the most commonly CNC-controlled machines in production and tool room work, so their set-up, tool selection and codes are included in detail. Students actually will program, set up and run several CNC lathe and mill projects during this course. (F)

**MATL 206 CNC Programming (3)**

The theory and practices learned in MATL 205 along with the fourth axis work are put into use in programming the vertical mill and lathe. Several advanced projects will be programmed, set up and run by students. In addition to required projects, advanced machinists will be involved in a full-scale production job involving simple to complex programming. All students will get experience on both CNC lathes and mills. Advanced use of the computer on such operations as program development, verification and DNC (uploading and downloading) to and from machine tool will be stressed. Each student will advance from simple to complex programming as their ability and interest permits. (S)

**MATL 212 Toolmaking Lab II (7)**

Toolmaking students will specialize in either mold-making or die-making. They will design and build either a complex mold or die depending upon the area in which they choose to specialize. They will be required to complete a portion of their molds or dies using EDM and a portion on CNC. They also will be involved in the design and building of jigs and fixtures used in the production job by the machinist students. Students also will learn how to make single flute carbide and HSS form cutters. (S)

**MATL 213 Machinist Lab I (7)**

Basic projects using the CNC lathe and CNC mill are introduced. More complicated setups and procedures on lathe, vertical and horizontal CNC mills and surface grinders to produce parts in quantity or repair situation are learned. ID/OD and form grinding are introduced. (F)

**MATL 214 Machinist Lab II (7)**

Each student will program, setup and operate CNC lathes and mills, sinker and wire E.D.M.'s on a variety of required lab jobs. Additional experience producing parts to accurate dimensions is highly stressed. Speed of completion becomes very important in this class. All students will be involved in a full-scale production capstone project that involves building and assembling a production tool or machine consisting of at least 30 precision machined components. This project requires them to use all of the knowledge gained in both MATL 205 and MATL 206 to efficiently use time and resources available to complete the job while meeting stringent timelines and high quality standards. This capstone project gives students real-world manufacturing experience as well as the chance to work with other students and even other departments as a team to identify and solve real manufacturing problems. Jigs and fixtures required to align and hold parts during machining also will be designed and built by students. (S)

**MATL X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**MATL 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**MATL 299 Special Topics (1-15)**

A course designed to meet special departmental needs.

**(MFGT) MANUFACTURING TECHNOLOGIES****MFGT 101 Robotics I (2 credits)**

This is a lab/lecture introductory robotics course that includes FANUC robot terminology and operational skills with a welding emphasis. This course provides basic instructions using the FANUC Roboguide-WeldPRO software on how to setup a workcell for the simulation programming software using the FANUC robot. FANUC teach pendant and Windows-based computers. (S)

**MFGT 107 Introduction to CNC (2)**

A lecture/lab introductory course that introduces the student to the basic fundamentals of CNC programming. Applied lab exercises in programming bench-top mills and lathes are included. (F)

**MFGT 110 Industrial Shop Practices (2)**

An introduction to the procedures and practices used to develop fundamental industrial shop skills. Students enrolled in this class will learn and apply a variety of practical skills used to aid in any entry level industrial mechanical service occupation. The topics covered in this course are: general shop safety; MIG welding set-up and operation as well as welding simulation; Oxy-Fuel torch set-up and operation; basic measuring methods using tape measures, rulers, calipers, and micrometers; identification of SAE and ISO metric measuring systems; proper use and identification of basic shop tools; identification of twist drills and sharpening; identification and use of hand taps; fastener type and grade identification; Helicoil insert use; bolt extraction; properly demonstrate the use of mechanical type torque wrenches; properly demonstrate the use of electronic type torque wrenches; properly demonstrate the ability to torque according to industry standards.

**MFGT 115 Manufacturing Processes I (4)**

The study of basic machine tool operations and forming processes topics include: lathe work, milling, drilling operations, tooling and fixture work. (F)

**MFGT 120 Basic Welding I (1)**

Basic training in the use of Oxygen-Acetylene/Propylene Cutting (OFC), Shielded Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW). Welding safety, welding equipment, welding joint configurations and welding techniques will be covered. Welding supplies such as electrodes, shielding gases and electricity will be studied. Welding shop safety is the main focus. (F, S)

**MFGT 121 Basic Welding II (1)**

This course is a continuation of MFGT 120. This course covers basic horizontal and vertical welding using Shielded Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW). Plasma Arc Cutting and Carbon Arc Cutting are also covered. Prerequisite: MFGT 120. (F, S)

**MFGT 123 Fabrication Methods I (2)**

A course for students to learn fabrication techniques as they relate to product manufacturing, maintenance and repair. How to use basic shop tools and shop equipment efficiently and safely. (F)

**MFGT 125 Total Quality Improvement (2)**

A study of the introductory concepts of total quality improvement. Fundamentals of quality, commitment, teamwork, cause/effect, data collection and decision-making. (F, S)

**MFGT 126 Manufacturing Process II (2)**

A lecture/lab introductory course that introduces students to robotics and automated systems and their operating characteristics. Students will learn basic coordinate systems and how hydraulic, pneumatic and electromechanical systems function together as a production cell. Applied work cell projects will be utilized. (S)

**MFGT 127 Precision Measuring Techniques (2)**

A lecture/lab introductory course that introduces the student to common measuring tools and measurements. Topics include: common measuring tools, gauge blocks, surface measurement, dial indicators, micrometers, optical measuring techniques, surface measurements, tolerance zones and basic calibration methods. (S)

**MFGT 135 Basic Metallurgy (2)**

This course will study the basic fundamentals of metallurgy. We will discuss the behavior of metals and how they relate to the field of welding. Topics include identification, classification and properties of ferrous metals, nonferrous metals, alloys, heat treatment, destructive and non-destructive tests, cast iron and plastics. (F)

**MFGT 137 Print Reading I (2)**

A basic course for students to learn basic shop sketching and print reading. Giving the individual enough knowledge to manufacture a part from an engineering shop drawing. (F, O)

**MFGT 140 Fabrication Methods II (2)**

An advanced course for students to learn fabrication techniques as they relate to product manufacturing, maintenance and repair. How to use advanced shop tools and shop equipment efficiently and safely. (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). (S)

**MFGT 150 Hydraulics I (2)**

A study of the basic hydraulic system and system components. The student will explain how each component works, will relate each component's relationship to a functioning system, will read and interpret basic hydraulic schematics, and will review general component troubleshooting and maintenance procedures. Topics include: basic hydraulic systems, force, energy, pumps, motors, control valves, actuators, reservoirs, filters, lines, fittings and basic system troubleshooting methods. (F, S)

**MFGT 160 Pneumatics (2)**

A study of the basic pneumatic system and system components. This study will explain how each component works, will relate each component's relationship to a functioning system, will include reading and interpreting basic pneumatic schematics, and will review general component troubleshooting and maintenance procedures. Topics include: compressed air, force transmission, energy, air distribution, actuators, valves, regulators, air preparation and basic troubleshooting methods. (F, S)

**MFGT 225 Intro to SPC (2)**

A study of the introductory concepts of statistical process control. Fundamentals of statistics, control charts, process capability, sampling plans, quality costs, ISO 9000 and quality teams. (F, S)

**MFGT 228 Geometric Tolerancing (2)**

A course dealing with the basic principles used in geometric tolerancing and its use in the world of manufacturing. Topics include: general tolerancing methods, geometric symbols, datums, material conditions, form tolerances, orientation tolerances, and location tolerances, measuring methods and basic bonus tolerancing methods. (S)

**MFGT 230 CIM Lab (5)**

This course is a capstone project that is designed to showcase the students' abilities that have been developed over the four semesters. The class will include mechanical adjustments, electrical wiring, and PLC programming. The class combines all the skills that a mechatronics technician needs to have a systems approach to automation. (S)

**MFGT X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**MFGT 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**MFGT 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(MICR) MICROBIOLOGY****MICR 202 Introductory Microbiology (3 credits)**

A study of the characteristics and importance of microorganisms with emphasis on their identification, control and relationships to health and disease. Corequisite: MICR 202L. (F, S, Su, O) ND:LABSC

**MICR 202L Introductory Microbiology Lab (1)**

An overview of the structure and use of microscopes, staining procedures, aseptic technique and common microbiological laboratory procedures useful in the identification of bacteria. Corequisite: MICR 202. (F, S, Su) ND:LABSC

**MICR 204 Basic Immunology (3)**

Basic Immunology is the second semester of a highly recommended, two-semester sequence consisting of MICR 202 Introduction to Microbiology followed by MICR 204 Basic Immunology. The intent of this course is to cover the origin, formation, function and regulation of the immune response in humans and other mammals in more depth than was covered in MICR 202 or BIOL 221. Additionally, selected bacterial, viral and fungal diseases are reviewed in the context of how our body defenses try to prevent infection and maintain homeostasis. The course materials include a textbook (Immunology by Goldsby, Kindt, Osborne and Kuby, 5th edition), videos, computer-based CD tutorials and assigned readings from scientific journals. Prerequisite: BIOL 220/221 or MICR 202/202L or consent of instructor. (As needed)

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, convection and radiant. The course includes classroom and laboratory assignments. (S)

**MSYS 141 Introduction to Electricity (2)**

A study of basic electricity for plumbers including applications such as water heaters, pumps, hot-water heating systems and their associated controls is offered with this course. (S)

**MSYS 142 Electrical Controls For HVAC and Refrigeration (2)**

This course covers many aspects of control circuits connected to HVAC/R service, and it includes classroom and laboratory assignments. Prerequisite: MSYS 141 or equivalent. (F)

**MSYS 151 Drafting and Sketching (2)**

A practical course in drafting, sketching, scale reading, geometric construction and interpretation of drawings. The principles involved are sufficient in depth to give the student the working knowledge and skills required for the major program areas. (S)

**MSYS X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**MSYS 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(MUSC) MUSIC****MUSC 100 Music Appreciation (3 credits)**

Introduction to the elements, genre, media and historical and stylistic periods of music. This course is a broad overview of music and musical styles including folk, religious, jazz, popular, classical and ethnic music. It will introduce musical concepts and focus on perceptive listening to music as it exists in the world. (F, S) ND:HUM

**MUSC 101 Fundamentals of Music (3)**

The introduction to fundamental elements of music through the study of scales, chords, basic harmonic progressions, rhythms and terminology. This course is designed for students who have previous music ensemble experience such as high school band, chorus or orchestra. It develops or improves skills in reading and noting music. Also included are pitch and rhythmic notation, basic keyboard, key signatures, beginning melody and harmonization. (F, S) ND:HUM

**MUSC 115 Concert Band (1)**

Concert Band is dedicated to the rehearsal of a wide variety of music for one or two performances a semester. The band may play for athletic events and parades. Rehearsals are twice a week. (F, S)

**MUSC 117 Concert Choir (1)**

Concert Choir is dedicated to performing a wide variety of music in one or two concerts per semester. Group rehearsals are two times a week. Additional sectional rehearsals are scheduled as needed. (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 audition 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. (F, S)

**MUSC 144 Applied Music (Private Voice Lessons) (1/term)**

Individualized instruction with emphasis on musicianship and repertoire. One-half hour private lesson per week. Limited enrollment, see instructor. (F, S)

**MUSC 145 Applied Music (Private Instrumental Lessons) (1/term)**

Individualized instruction on concert band instruments with emphasis on musicianship and repertoire. One-half hour lesson per week. Limited enrollment, see instructor. (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. (F, S)

**MUSC 162 Class Voice I (1)**

This course is designed to enable the student to understand the basic principles of vocal production. This will be accomplished through observation, journaling, performing and written comprehension. (F, S)

**MUSC 207 History of Rock and Roll Music (3)**

This course presents a survey of rock 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)

**MUSC 245 Applied Music (Private Piano Lessons) (1/term)**

Private lessons are elementary piano with emphasis on musicianship and repertoire. One-half hour private lesson per week. Limited enrollment, see instructor. (F, S)

**MUSC X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**MUSC 299 Special Topics (1-4)**

A course designed to meet special departmental needs. (F, S)

**(NURS) NURSING****NURS 101 Introduction to Nursing (5 credits)**

This course, the first in the nursing curriculum, includes an introduction to nursing's historical background and trends in nursing today. An emphasis is placed on the role and responsibility of the individual practical nurse as a person in today's society and as a professional in the delivery of health care. An introduction to the 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 and 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 and 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 and 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 their 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 for health promotion/protection and maintenance for the individual and families with emphasis on the geriatric population 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 physical, psychological, socio-culture and spiritual collaborative approach the student will use the nursing process to plan, implement and evaluate nursing care. The student will use evidence-based research and theoretical concepts to problem solve and critically reason to manage common clinical problems. The student will apply the teaching/learning process in the reinforcement of education to the client and family. Prerequisite: Satisfactory completion of the first semester of the Associate Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 118 and PHRM 210. (S)

**NURS 201 Complex Nursing Care Concepts I (4)**

Concepts that continues 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 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. Corequisites: NURS 202 and NURS 203. (F)

**NURS 202 Complex Nursing Care Concepts I Clinical (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, 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. Corequisites: NURS 201 and NURS 203. (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, special concerns related to communities, including environmental threats and cultural influences. The student will utilize teaching/learning principles to promote 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 (4)**

This course focuses on the role and scope of practice of the registered nurse in the care of childbearing families and developing child. 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 childbearing process and selected study of diseases/disorders affecting women, children and families. The student will apply the teaching-learning process in the education 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 (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 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. Corequisites: NURS 204, NURS 206, NURS 207 and NURS 208. (S)

**NURS 206 Complex Nursing Care Concepts II Clinical (3)**

This clinical course provides students opportunities to deliver evidence-based care, including application of evidence-based practice in managing acute clinical problems for clients experiencing life-threatening, critical events. The student functions effectively as an interdisciplinary team member exercising goal-setting strategies and problem-solving techniques in the application and management of care that respects client differences, values, preferences and expressed needs, based on scientific evidence. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 204, NURS 205, NURS 207 and NURS 208. (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 in using critical reasoning to make informed nursing clinical judgments, effectively define problems, gather and evaluate information and determine measures to provide optimal health for clients. A preceptorship clinical experience will be assigned by the student's advisor in collaboration with the student in a health care facility. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 204, NURS 205, NURS 206 and NURS 208. (S)

**NURS 208 Transition to Practice (1)**

Course topics will direct the student to plan and develop professional opportunities to transition into practice such as writing a resume, the interview process, professional expectations, relationships, and organization. Prerequisite: Satisfactory completion of the first three semesters of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisite: NURS 204, NURS 205, NURS 206, and NURS 207. (S)

**NURS 231 Psychiatric Mental Health Nursing (2)**

This course focuses on the integration of theory and clinical practice in the psychiatric-mental health setting. Focus is placed on the concepts of mental health, mental illness, psychiatric nursing, cultural influences on mental health/illness, continuum of care, therapeutic interaction and the various psychiatric disorders encountered in the psychiatric-mental health setting. Emphasis is placed on the role of the licensed practical nurse in providing care for the psychiatric client. Students will work to develop a beginning understanding of mental illness and its effect on the client's life. Prerequisites for this course include satisfactory completion of the first two semesters of the Associate in Applied Science Practical Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. (Su)

**NURS 232 Adult Nursing (5)**

This course builds on prior learning to gain knowledge of disease processes of the biopsychosocial, spiritual and culturally diverse adult client within the health illness continuum. It prepares the student to recognize the symptomatology of major disease processes and changes in the health status of the client within their environment. It will provide knowledge in the methodology of diagnostic testing, medical-surgical interventions, and aspects of nutritional and pharmacological roles in the delivery of nursing care to the client. The emphasis will be placed on nursing care, and utilizing the nursing process. Assessment will follow the system utilizing Maslow's Hierarchy of Needs and Erickson's Developmental Stages to determine nursing diagnosis, plan, intervention, and evaluation of nursing care. Application of the teaching-learning process will be emphasized. Problem-solving skills will be utilized in the identification of environmental risks in planning care of the adult client. Using the nursing process as a framework, students explore the collaborative role of the nurse with the adult client, families and other members of the health care delivery system. Prerequisites of this course are satisfactory completion of the first two semesters of the Associate in Applied Science Practical Nursing curriculum, with a minimum of a 2.0, a "C" average, in all courses required in the Nursing Program. Pre and/or corequisite: NUTR 240, ENGL 110. Corequisite: NURS 233. (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 clinic 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 degree 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 246. (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. Course offered summer session prior to fall program start.

**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 students attainment of the necessary knowledge and skill sets to provide teaching/learning opportunities to clients/families and communities within their environments to maintain optimal health. Prerequisite: NURS 255. Corequisite: 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. Prerequisite: NURS 255. Corequisite: 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 preconception, antepartum, intrapartum, postpartum and newborn periods. Focus is placed on the students attainment of the necessary knowledge and skill sets to provide teaching/learning opportunities to clients/families and communities within their environments 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, special concerns related to communities including environmental threats and cultural influences. The student will utilize teaching/learning principles to promote 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 will be assigned by the student's advisor in collaboration with the student in designated acute care facilities. 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 course covers the role of the OTA in the therapeutic use of self in context of roles and performance patterns throughout the lifespan. Students are introduced to the theories related to occupation, Occupational Therapy Practice Framework, activity analysis and grading and adapting tasks. Students will learn about group dynamics, group process, learning styles, teaching process, expected roles and student self-analysis. Students will practice basic techniques and procedures used in media. 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. One Friday/Saturday face-to-face-classroom session creates the environment for students to observe and practice occupational therapy assessments and intervention strategies. 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 online course will provide the student with information and 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: frames of references used in occupational therapy settings; the AOTA Code of Ethics; 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. (O)

### **OTA 213 Physical Disabilities II: Theory and Practice (2)**

This course is a continuation of Physical Disabilities I and is designed to provide students with an understanding of the occupational therapy process in physical disabilities resulting from illness, disabling conditions or injury. This lecture/lab course will focus on how occupation forms the core of the profession. It will prepare students to apply theoretical treatment approaches to enhance occupational performance of person with these types of physical conditions. Evaluation tools and treatment techniques applied to specific diagnoses will be studied and practiced. Theories and practice models/frames of references are examined and applied to guide the evaluation and intervention process. Orthotic and adaptive devices utilized with specific diagnoses will be explored. Laboratory activities reflect current and emerging intervention processes and techniques. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)



**OTA 214      Pediatrics II – Theory and Practice (3)**

This course is designed to enable the students to investigate and understand the prevalent disabilities occurring during the early years (birth to 21 years of age) and continue to implement occupational therapy treatment for a variety of disabilities. Students will also study the theories and clinical techniques used to effectively implement occupational therapy treatment techniques in pediatric settings. Evaluation tools, treatment techniques, documentation and approaches applied to specific diagnoses will be examined and practiced. A basic overview of sensory-integrative development, handwriting and adaptive equipment will be discussed. Students will discuss how occupation is the core of the profession and guides treatment. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 215      Behavioral Health:  
Theory/Practice-Adults (3)**

In this one-semester online course, students learn about mental health issues that impact the adult client's occupational performance. Throughout the semester, students will develop treatment plans and activity plans to help adult clients achieve functional outcomes within areas of occupation. One Friday/Saturday face-to-face session creates the environment for students to observe and practice occupational therapy assessments and intervention strategies. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 216      Professional Issues (2)**

This course is designed to enhance the OTA's participation in basic support services in occupational therapy, as well as the legal, ethical and political influences that affect the delivery of occupational therapy services. Topics addressed include leadership and management, health care team role delineation, reimbursement and documentation, credentialing and licensure, ethical standards of practice, quality assurance, research and the use of evidence-based practice in OT. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 218      Aging (2)**

This course provides a concentrated focus on occupational therapy for adults with physical and cognitive deficits, contexts, and client factors. This course examines the basic concepts of aging including theories, trends and policies. Students will study the normal aging process, physical, psychosocial and cognitive dysfunctions common to the elderly. Students will participate in the OT process including screening, evaluation, intervention planning, therapeutic interventions and discharge/follow-up with the geriatric population in the context of occupational performance in order to promote health and prevent disease. This course examines community mobility, aging in place and explores alternative living situations for the geriatric client. The importance of patient, family significant other/ caregiver education and documentation to ensure reimbursement in today's health care environment is emphasized. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 219      Community Models of Occupational  
Therapy Practice (2)**

This course introduces the student to emerging areas of occupational therapy practice in the community. These emerging areas of practice are, but not limited to, ergonomics, low vision, driving rehab, design and home modifications, and health and wellness. Assessment and intervention strategies will be addressed. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 220      Teaching Assistant: Medical  
Terminology (2)**

Optional course which requires student to assist in OTA 105 Medical Terminology. Duties to include test proctoring, organizing review session and other duties as assigned. Prerequisite: College level medical terminology course equivalent to OTA 105. (F)

**OTA 241      Teaching Assistant: Media (2)**

Optional course which requires student to assist in media lab supervision, demonstrate techniques, participate in classroom maintenance and carry out other duties as assigned. (S)

**OTA 252      Fieldwork Level I – Experience II (1)**

This course is designed to enhance the OTA's participation in basic support services in occupational therapy, as well as the legal, ethical and supervisory issues in professional practice. Impacts of the health care delivery system on OT practice will be addressed. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 253      Orientation to Fieldwork II (1)**

This course is designed to assist in the transition from the academic setting to clinical practice. Content included, but is not limited to, supervision styles, stress management and professional behavior. Policies governing fieldwork will be emphasized. This course reviews the OTA's role in the delivery of OT services for disabled individuals in a variety of settings. This course is designed to enhance student's personal and work behaviors in a small group atmosphere. Students will share experiences from Level I fieldwork. Emphasis is on group leadership and facilitation, development of communication and observation skills and use of self as a therapeutic self. Prerequisites: All first year courses. Corequisites: All fall semester second year courses. (F-second year)

**OTA 254      Fieldwork Level II – Experience I (6)**

Supervised experience of eight weeks or equivalent under the direction of qualified occupational therapy personnel in approved fieldwork sites. The students will work with clients with a variety of physical disabilities, psychosocial dysfunction or developmental delays or disabilities across the life span. The students will be expected to use knowledge and skills acquired in the academic setting to evaluate and treat clients and document according to prescribed regulations. The students will further be expected to conduct themselves in a professional manner in accordance with AOTA Code of Ethics. Prerequisites: Completion of all academic requirements and Level I Fieldwork. (S-second year)

**OTA 255      Fieldwork Level II – Experience II (6)**

Supervised experience of eight weeks or equivalent under the direction of qualified occupational therapy personnel in approved fieldwork sites. This experience follows Experience I and in a setting that provides therapy to a different population of clients than in the first experience. Client evaluation, treatment implementation and documentation will be expected of the students. The students will further be expected to conduct themselves in a professional manner in accordance with AOTA Code of Ethics. Prerequisites: Completion of all academic requirements and Level I Fieldwork. (S-second year)

\*Students must complete two Level II Fieldwork Experiences to be eligible for graduation.

**OTA 256      Seminar (1)**

A culminating seminar designed to aid the transition from student to practitioner. This course provides opportunities for application and integration of academic course work used during fieldwork experiences. Students share experiences of being a part of the OT service team and reflect on how the role of occupational therapy and the occupational therapy assistant are demonstrated and delineated in the various fieldwork experiences. The importance of continued lifelong learning and professional development is stressed. Students complete a practice national certification exam and review the application process for the examination. After completion of at least one Level II Fieldwork Experience students are eligible to take this class. (S-second year)

**OTA 295      Independent Study (1-4)**

A study or in-depth analysis of a selected topic related to Occupational Therapy. This course may be repeated with a new topic. Must have a faculty advisor for project. (F, S)

**OTA X92      Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**OTA 299      Special Topics (1-4)**

College class in process of development designed to meet student needs or interests or to utilize particular faculty resources. (F, S)

**(PHIL) PHILOSOPHY****PHIL 200 Ethics in the Workplace (2 credits)**

Exploring ethical issues; understand and explore ethical principles appropriate to the business culture and environment. (As needed)

**PHIL 210 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 213 Societal and Ethical Implications of Technology (3)**

What is technology? What is society? What are ethics? What effect does technology have upon a particular society at a particular time in history? These are the questions which will help us formulate, understand and answer the main question in this course: How does a society, or a group within a society, make rationally sound, moral choices about the best use of existing and new technologies. We will review the history of technology and society, beginning with humans mastering the use of fire and ending with humans manipulating atoms and molecules at the nano-scale. The major focus of our work will be the social and moral implications of technology from the 16th century (CE) to the present time and beyond. (As needed)

**PHIL X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**PHIL 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(PHRM) PHARMACOLOGY****PHRM 123 Pharmacology for 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 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 201 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)

**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 medications. It prepares the practical nursing student to begin a continuing systematic study of drug therapy associated with common health problems and provides necessary information for safe administration of medications to the biopsychosocial, spiritual and culturally diverse client. Prerequisites of this course are satisfactory completion of the first semester of the NDSCS nursing curriculum. (Second semester of the curriculum) (F, S)

**PHRM 207 Pharmacology for the Elderly (2)**

The course will examine the effects of aging on the geriatric individual. These changes will be investigated in relation to their impact on pharmacodynamics and pharmacokinetics. Students will examine and analyze medication induced problems and the use of chemical restraints. This course is designed for the student who has successfully completed a basic pharmacology course.

**PHRM 210 Pharmacology for Registered Nursing (3)**

This course presents the education on the concepts and principles of pharmacology establishing a knowledge base for major drug classifications, preparation and administration. Students will have the opportunity to determine dosing, preparation and methods of administration. The role of the registered nurse in developing a comprehensive approach to the clinical application of drug therapy through the use of the nursing process will be included. Nursing assessments, diagnosis, goals, interventions/implications and evaluation relative to client care and education for medication administration will be included. Prerequisite: Satisfactory completion of the first semester of the Associate in Applied Science Registered Nursing curriculum with a minimum of a "C" in each course that applies to the nursing curriculum. Corequisites: NURS 118 and NURS 119. (S)

**PHRM X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**PHRM 299 Special Topics (1-5)**

A course designed to meet special departmental needs.

**(PHYS) PHYSICS****PHYS 100 Concepts of Physics (3 credits)**

An introduction to the concepts of physics as they apply to everyday life. Ideas are presented with a conceptual rather than mathematical approach. (As needed) ND:SCI

**PHYS 110 Introductory Astronomy (3)**

This is an introductory astronomy class intended to give the student an appreciation of the universe in which we live. Topics covered will include: ancient astronomy and the Copernican Revolution, astronomical measurements and instruments, the solar system, stars and stellar evolution, galaxies, black holes and cosmology. (As needed) ND:SCI

**PHYS 120 Fundamentals of Physics (3)****PHYS 120L Fundamentals of Physics Lab (1)**

An introduction to the principles and concepts of physics with problem solving applications using mathematics. Includes topics from Newtonian mechanics work and energy, momentum, harmonic motion, fluids, temperature and heat, electric forces and fields, and electric circuits. (As needed) ND:LABSC

**PHYS 211 College Physics I (3)****PHYS 211L College Physics I Lab (1)**

The non-calculus general physics course sequence recommended for pre-medical or pre-professional students. Topics: Newtonian mechanics and gravitation, work and energy, solids and fluids, heat and thermodynamics. The laboratory is a corequisite of this course. Prerequisite: MATH 103. (F) ND:LABSC

**PHYS 212 College Physics II (3)****PHYS 212L College Physics II Lab (1)**

The non-calculus, general physics course sequence recommended for pre-medical or pre-professional students. Topics: Vibrations and waves, electricity and magnetism, light and optics, and an introduction to modern physics. The laboratory is a corequisite of this course. Prerequisite: PHYS 211. (S) ND:LABSC

**PHYS 251 University Physics I (4)****PHYS 251L University Physics I Lab (1)**

The calculus based general physics sequence for students majoring in chemistry, physics or engineering. Topics: Newtonian mechanics and gravitation, work and energy, solids and fluids, heat and thermodynamics. The laboratory is a corequisite of this course. Prerequisites: MATH 146 or MATH 165. (F-in classroom) ND:LABSC

**PHYS 252 University Physics II (4)****PHYS 252L University Physics II Lab (1)**

The calculus based general physics sequence for students majoring in chemistry, physics or engineering. Topics: Vibrations and waves, electricity and magnetism, light and optics, and an introduction to modern physics. The laboratory is a corequisite of this course. Prerequisites: PHYS 251 and either MATH 147 or MATH 166. (S) ND:LABSC

**PHYS X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**PHYS 299 Special Topics (1-9)**

A course designed to meet special department needs.

**(PLA) PRIOR LEARNING ASSESSMENT****PLA 202 Prior Learning Assessment (1-12 credits)**

This course recognizes prior education and training provided through a USDOL or federally approved apprenticeship training program. Individuals who have completed at least 6000 hours (including 400 hours of related study) and who have applied for and been admitted to the NDSCS Technical Studies-Journeyworker Track will qualify.

**(PLMB) PLUMBING****PLMB 101 Plumbing Theory and Code (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 Hand Tools, Introduction to Power Tools, Introduction to Blueprints, Basic Rigging, Basic Communication Skills, Basic Employability Skills and Materials Handling. (F – 1st 8-weeks)

**PLMB 111 Plumbing Lab (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 Plumbing 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, sketching and blueprint reading, with a detailed study of the plan view, isometric views and other areas that pertain to plumbing and mechanical installations. (F)

**PLMB X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**PLMB 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**PLMB 299 Special Topics (1-9)**

Designed to meet special departmental needs.

**(PLSC) PLANT SCIENCE****PLSC 110 World Food Crops (3 credits)**

Scientific principles of crop growth, worldwide production, management alternatives and processing for domestic and international consumption. (S) ND:SCI

**PLSC 115 Crop Technologies (2)**

This course is designed to introduce students to the importance of seed selection in crop production. Seed traits and the economic impact of the seed business will be discussed. Planting systems, world market implications and stewardship of traits will be explored. This course provides the background information needed by today's seed representatives and farm producers. (S)

**PLSC 138 Agronomic Technologies (3)**

This course will cover materials needed by students seeking careers that utilize modern agricultural equipment. Topics included in the class include: crop protectant application practices and personal protective equipment; commercial driver's license pre-trip inspections and written test preparations; seed meter, granular applicator, drill and planter calibration; harvest equipment calibration and adjustment; anhydrous ammonia safe handling practices; pesticide compatibility testing; tank mixing procedures; sprayer calibration methods; sprayer nozzles; storage, rinsing, and disposal of pesticide containers; and related topics. (F)

**PLSC 223 Introduction to Weed Science (3)**

Introduction of a basic knowledge of weeds, herbicide groups, the use of pesticides, economic and environmental considerations, personal safety, modes of action and terminology.

**PLSC 224 Introduction to Crop Protection (3)**

Introduction to chemical crop protection such as herbicides, fungicides, insecticides and seed treatment. A study of chemical crop protection products or pesticides which aid in management and control of insects, diseases, weeds, fungi and other undesirable pests for improved crop health, growth and yield production. (F)

**PLSC 225 Principles of Crop Production (3)**

Principles of field crop production with emphasis on relationships of crops to their climate and production considerations as a means of managing resources and environment. (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. (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. Prerequisites: PRMT 101, PRMT 102, PRMT 111, PHRM 123, and PHRM 124. Corequisite: PRMT 216. (S)

**PRMT 217 Pharmacy Practice (3)**

During this course students will master the concepts needed to interpret, dispense, label and maintain patient profiles in various pharmacy settings. Topics included in this course are communication skills, abbreviations, dosage calculations, policies and procedures of The Joint Commission, inventory control, medication safety 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 to approved pharmacy practice standards. Prerequisites: Successful completion of PRMT 101, PRMT 102, PHRM 123, and PHRM 124. Corequisite: PRMT 221. (S)

**PRMT 231 Pharmacy Internship-Community Based (4)**

Students who have completed all of the course work in the Pharmacy Technician program qualify for this course. Students will participate for a minimum of 160 hours in a licensed community pharmacy setting, supervised by a registered pharmacist. The duties and tasks to be performed will be pre-determined based on classroom instruction to reinforce competencies. The duties and tasks to be performed will be agreed upon by the faculty, student and supervising pharmacist to guarantee learning. Performance activities are to include: customer relations; following workplace rules, procedures, ethics and legal parameters; processing of prescriptions including compounding, counting and pouring, packaging and labeling; inventory and stock operations including control, ordering and pricing, data entry and record-keeping. Prerequisites: Successful completion of all core curriculum courses with a grade of "C" or better. (S, Su)

**PRMT 241 Pharmacy Internship-Hospital Based (4)**

Students who have completed all of the course work in the Pharmacy Technician program qualify for this course. Students will participate for a minimum of 160 hours in a licensed institutional (hospital) pharmacy setting, supervised by a registered pharmacist. Students will be assigned activities and will be evaluated in the following areas: compliance with the institution's policies and procedures, perform billing operations, use of drug dispensing systems, compound, package and label medications, process data on electronic systems, prepare sterile products, use of proper procedures in working with controlled substances, inventory maintenance, use of technology including automated dispensing machines and record-keeping. Prerequisites: Successful completion of all courses with a grade of "C" or better. (S, Su)

**PRMT X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**PRMT 299 Special Topics (1-5)**

A course designed to meet special departmental needs.

**(PST) POWERSPORTS TECHNOLOGY****PST 101 Outdoor Power Equipment Technology (5 credits)**

A combination theory and lab course covering basic tools and service equipment, operating principles and construction of outdoor power equipment engines. Instruction includes tune-up and service procedures for lawn and garden equipment, engine rebuilding, troubleshooting, and diagnostic procedures for outdoor power equipment engines and accessory support systems. Students will use manufacturers' recommended overhaul procedures and special tools to service outdoor power equipment. This is a half-semester course. (F, first half of semester)

**PST 102 Snowmobile Technology I (5)**

A combination theory and lab course covering two stroke operating principles, as well as complete service and troubleshooting of the snowmobile engine and its accessory systems. Discussion will cover engine diagnostic and overhaul procedures, as well as carburetion, lubrication systems, cooling systems, and other related items. This is a half-semester course. Prerequisite: PST 101 or completion of an NDSCS Automotive or Diesel Technology AAS degree. (F, second half of semester)

**PST 103 Snowmobile Technology II (5)**

A theory course covering operating principles of the snowmobile chassis. Discussion will include clutches, drive systems, front and rear suspensions, gas shocks, track systems, brakes, fuel injection, and electrical systems. Theory will cover service procedures for proper set up and service of the snowmobile chassis and related systems. This is a half-semester course. Prerequisite: PST 102. (S, first half of semester)

**PST 104 Motorcycle and ATV Technology I (5)**

A theory 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 122 Fundamentals of Electricity (3)**

This is a lecture, demonstration, and performance course which covers the principles of electricity and applies it to electrical circuits, batteries, and other electrical components. It will include Ohm's Law, and schematic reading and test instruments, as well as the testing of commonly used electrical components. The student will have a hands-on approach to learning electrical fundamentals, as well as repairing and troubleshooting electrical problems. This is a half semester course. (F-second 8 weeks)

**PST 150 Outdoor Power Equipment I (3)**

A combination theory and lab course covering basic tools and service equipment, operating principles and construction of outdoor power equipment engines. Instruction includes tune-up and service procedures for lawn and garden equipment. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (F)

**PST 151 Outdoor Power Equipment II (2)**

A combination theory and lab application of engine rebuilding, troubleshooting and diagnostic procedures for outdoor power equipment engines and accessory support systems. Students will use manufacturers' recommended overhaul procedures and special tools to service outdoor power equipment. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (S)

**PST 152 Snowmobile Technology I (3)**

A combination theory and lab course covering two stroke operating principles, as well as complete service and troubleshooting of the snowmobile engine and its accessory systems. Discussion will cover engine diagnostic and overhaul procedures, cooling systems, and other related items. Students will use manufacturers' recommended procedures and specifications to properly service various makes and models of snowmobiles. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (F)

**PST 153 Snowmobile Technology II (2)**

A combination theory and lab course covering two stroke operating principles, as well as complete service and troubleshooting of the snowmobile engine and its accessory systems. Discussion will cover engine diagnostic and overhaul procedures, as well as carburetion, lubrication systems, and other related items. Students will use manufacturers' recommended procedures and specifications to properly service various makes and models of snowmobiles. This course is offered as a dual credit option for Early Entry students only. This is a semester course. (S)

**PST 201 Motorcycle and ATV Technology II (5)**

This course will study basic theory and offer a hands-on lab application of service procedures for motorcycles and ATV's. Systems included will be engine, drive train, suspension, wheel, tire and fuel systems. Service department management procedures will be introduced. This is a half-semester course. Prerequisite: PST 104. (F, first half of semester)

**PST 202 Outboard Technology (5)**

This course will study basic theory and offer a hands-on lab application of service and troubleshooting of outboard marine engines. Systems included will be powerheads, gearcases, mid-section and electrical. This is a half-semester course. Prerequisite: PST 104. (S, first half of semester)

**PST 203 Stern Drive Technology (5)**

This course will study basic operating theory and offer a hands-on lab application of service and troubleshooting procedures of various inboard marine engines and drives. Systems included will be engines, transom assemblies, vertical drives, hydraulic accessory systems, propellers and winterization. This is a half-semester course. Prerequisite: PST 202. (S, second half of semester)

**PST 205 Outboard Fuel Systems (2)**

This course will study basic theory, service and troubleshooting of outboard marine engine fuel systems. Systems included will be electrical, fuel, lubrication and diagnostics. This is a half semester course. Prerequisites: PST 104, 105. (S, first half of semester)

**PST 222 Motorcycle and ATV Electrical Systems (5)**

This course will study basic theory and offer a hands-on application of service and troubleshooting procedures of motorcycle and ATV electrical systems. Systems included will be batteries, ignition, charging, lighting, starting and wiring diagrams. Prerequisite: PST 122. This is a half-semester course. (F, second half of semester)

**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)**

An examination of human relations in business and industry with emphasis on how people can work effectively in groups to satisfy both organizational and personal goals. Motivation, emotional and mental health, communication techniques and coping with stress are explored. Activities are used to encourage the application of concepts to enhance personal growth and insight and to increase social skills. (F, S, Su-as needed, O) ND:SS

**PSYC 103 Addictions and Alternatives (2)**

This course offers an introduction to addiction, addictive behaviors and the physical, mental, and emotional effects on the individual and the family. Topics include theoretical perspectives on abuse, pharmacological characteristics of commonly abused substances, and stages of dependence and addiction. Alternative healthy behaviors and lifestyles choices will also be emphasized. (S)

**PSYC 111 Introduction to Psychology (3)**

An introductory survey of the scientific study of human behavior and mental processes. The course will consist of an examination of psychology as a science and a profession. It will explore the biological foundations of behavior, sensing and perceiving the physical world, and normal and altered states of consciousness. The course will examine forms of learning, language and higher cognitive processes such as memory, thinking and problem-solving. This lecture course will focus on motivation, emotion, life-span development, theoretical views of personality, personality assessment, stress and coping, health and behavior, abnormal behavior and its treatment, and social psychology. (F, S, O) ND:SS

**PSYC 210 Child Development (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 230 Educational Psychology (3)**

A study of the application of the methods and principles of psychology to the process of teaching, learning and education. 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. This course will emphasize cooperative learning and an open-class approach. 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 261 Psychology of Adjustment (3)**

In this course the student will learn what psychological research says about improving adjustment and overall quality of life. (Factors affecting adjustment include gender, personality, self-esteem, ability to communicate effectively, health, experience of stress, changes with aging, coping processes, social influence and pressure, relationships with others, 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 psychology disorders. The student will examine the major psychopathologies such as anxiety disorders, mood disorders, substance-use disorders, and the schizophrenic disorders with a focus on etiology, diagnostic criteria, classification nomenclature and treatment approaches. The student will also explore the Diagnostic and Statistical Manual DSM-5 and its classification scheme. Prerequisite: 3 credits in psychology. (F, S, O) ND:SS

**PSYC 290 Volunteer Internship (1-3)**

Supervised placement in local agencies, organizations, and educational institutions to give the student experience in and to cultivate civic duty, volunteerism and the assistance of those in need. Students may also intern at a career-related site to evaluate and validate their vocational choice. (F, S, Su)

**PSYC 291 Volunteer Internship (1-3)**

Supervised placement in local agencies, organizations, and educational institutions to give the student experience in and to cultivate civic duty, volunteerism, career exploration and the assistance of those in need. Students may also intern at a career-related site to evaluate and validate their vocational choice. (F, S, Su)

**PSYC X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**PSYC 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(RAMT) ROBOTICS, AUTOMATION AND MECHATRONICS TECHNOLOGY****RAMT 101 Applied DC Theory (4 credits)**

Theory/lab analysis of DC resistive circuits using Ohm's Law and Kirchhoff's Laws with advanced analysis utilizing various circuit theorems and conversions will be studied. Computer analysis of DC resistive circuits along with the study of power, energy, capacitors and inductors in DC applications also will be examined. (F)

**RAMT 103 Applied AC Theory (4)**

A theory/lab course studying the fundamentals and applications of AC single phase and three phase systems. Electromagnetism, RLC series and parallel circuits, power factor, single and three phase AC transformers and motors, and the effects of harmonics will be covered in this course. Prerequisite: RAMT 101. (F)

**RAMT 107 Mechanical Drives and Maintenance I (2)**

This combined lecture/lab course will explore the use of basic mechanical systems and components and their applications to industrial machinery. Emphasis is given to how these components work, their use in mechanical systems, and proper installation and maintenance procedures. Topics to be covered will include: precision measurement, belt drives, bearings/seals, chain drives, gear drives, and couplings. (F)

**RAMT 109 Mechanical Drives and Maintenance II (2)**

This course will expose the student to multiple predictive maintenance technologies used in industry. The course will cover the theory behind, and application of, the following technologies in use: thermography, ultrasonic detection, vibration analysis, oil/grease analysis, stroboscopic analysis, and motor circuit analysis. The course will also explore current best practices in precision machine alignment, including belt/chain alignment and rotating machinery alignment. The student will use the textbook, case studies from industry, and some hands-on exercises to explore these topics. Prerequisite: RAMT 107. (S)

**RAMT 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 Networks, Systems and Sensors (3)**

This course will cover the terms, theory, and practical applications of networks, input devices, output devices, safety systems and panel building requirements in modern machines. (F)

**RAMT 221 Robotics II (3)**

This course is a combined lecture and lab class which will cover advanced robotics programming, troubleshooting, maintenance, and interfacing the robots to other peripheral equipment. Areas of focus for this course will include programming, integrating, troubleshooting, and repairing of robotic systems. Students will be involved in lectures, discussions, and hands-on equipment labs. Prerequisite: ECAL 224. (F)

**RAMT 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 is a lecture/lab course that covers current maintenance program practices used in industry today, including preventive/predictive maintenance, reactive maintenance, and reliability-centered maintenance. The course will also explore the current best practices being employed in the area of equipment maintenance. The course will discuss the current best practices in maintenance workflow management that are being used in industry. The course will also expose the student to the troubleshooting process and various methods of troubleshooting that can help the student in their future work environments. The course will explore these topics through lecture, discussion, case studies from industry, and hands-on exercises. (S)

**RAMT 246 Quality Assurance Standards and Methods (3)**

This course is a lecture course that will introduce the student to the concept of statistical analysis and quality assurance as applied to the manufacturing and maintenance environment. Through lecture, discussion, case studies from industry, and exercises, the student will gain a basic understanding on how data is collected, analyzed, and used in the day-to-day operations of a modern facility for process improvement, defect/waste elimination, and risk/hazard assessment. The course will also explore the following Lean Manufacturing and Maintenance Management tools and their application: Kaizen, Six Sigma, 5S, 5 Why, Root Cause Analysis, and Wrench Time Studies. (S)

**RAMT 250 Drives and Servo Systems (2)**

This combined lecture/lab course will explore the commissioning and operation of Siemens variable frequency drives and servo control systems. Students will gain an understanding of the operational theory of these components, the usage of these systems in industrial settings, and basic programming protocols. (S)

**RAMT 297 Cooperative Education (2)**

This work experience/internship will expose 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 their respective site to gain an insight to the RAMT career field.

**(REFG) REFRIGERATION AND AIR CONDITIONING TECHNOLOGY****REFG 101 Refrigeration Technology (3 credits)**

This lecture based course will touch on the following aspects of the refrigeration, heating and air-conditioning trade: safety as it pertains to the HVAC/R industry, tools and their uses, sheet metal layout and fabrication, iron pipe threading and fabrication, copper tubing joining methods and PVC piping. The class will thoroughly study the principals of heat transfer, refrigerants and basic refrigeration cycle. Refrigerant manifold gauge attachment and removal, refrigerant phases, and recovery system evacuation will also be covered in detail. This lecture is accompanied by the fabrication lab (REFG 111) and refrigeration systems lab (REFG 113) to allow application of content covered in this lecture. Corequisites: REFG 111 and REFG 113. (F)

**REFG 102 Refrigeration Technology (3)**

An in-depth study of the four essential components of the refrigeration system such as: evaporators, condensers, compressors and metering devices will be included in this course. Normal system operating conditions will be discussed for a variety of refrigeration and air conditioning applications. Understanding normal operating conditions will be essential in learning troubleshooting techniques. This course will begin with a review of the theories of refrigerants, refrigerant recovery methods, and system evacuation. Prerequisite: REFG 101. (S)

**REFG 104 Refrigerants: Chemistry and Ecology (1)**

With an emphasis on decreasing the impact on the environment by improved service techniques, study in this course will prepare the student to practice more environmental acceptable procedures. Study in this course will include: The chemical composition of the refrigerants commonly used in the refrigeration and air conditioning industry, effects of the refrigerants on the environment, service procedures recommended by the Environmental Protection Agency for preventing the release of refrigerants to the atmosphere. During the course the students will examine oils and the appropriate application, changing, and disposal methods. This course is designed to be a concentrated study to help the student pass the EPA Refrigerant Certification Exam. (S)

**REFG 110 Blueprint Reading and Estimating (2)**

In the HVAC/R industry it is imperative that professionals have a good working knowledge of blueprints. Blueprint reading and estimating learning outcomes are measuring and scaling skills, identification of symbols, and definitions of pertinent terms. The student will work with plan views, elevations, sections, details and specifications, and show how it is possible to determine the scope of the job and formulate a list of materials needed. Time will also be spent learning to determine how the building designer intended the HVAC/R equipment to be installed. No prerequisites are required. (F)

**REFG 111 Fabrication Lab (2)**

In the first eight weeks of this first semester course will be a practical hands-on counterpart to the REFG 101 theory class. It will introduce the student to the fabrication of sheet metal air distribution components, iron gas piping, copper tubing and PVC piping components. The activities will introduce the student to the construction and mechanical skills necessary for the installation of heating, ventilating, air conditioning and refrigeration equipment. REFG 111 will provide actual fabrication tools and equipment where the student will be able to practice fabricating projects until they are acceptable trade quality projects. Sheet metal layout, piping leak testing, threading, priming, gluing, silver soldering and silver brazing are examples of activities in this lab. Corequisite: REFG 101. (F)

**REFG 112 Domestic and Residential Systems Lab (2)**

This course will allow the student to apply refrigeration fundamentals to actual domestic and residential systems. Diagnostics, repairs and component replacements will be applied to refrigerators, freezers, window air conditioners, de-humidifiers and central air conditioning systems. There will also be application opportunities for the knowledge learned in REFG 102. A key component of the course will be providing repair reports on two separate pieces of equipment that the student has provided. Prerequisites: REFG 101, REFG 111 or equivalent. (S)

**REFG 113 Refrigeration Systems Lab (2)**

This second eight week course in the first semester will be a practical hands-on counterpart to the REFG 101 theory class. It will introduce the student to the refrigeration system and allow the student to take necessary readings and measurements to solidify their understanding of a simple refrigeration system. Also, there will be introductions and opportunities to use evacuation, refrigerant recovery and refrigerant charging equipment. Corequisite: REFG 101. (F)

**REFG 121 Electrical Theory I (3)**

An introduction to electrical theory, REFG 121 will allow study of the theories of electricity with an emphasis on how these theories apply to the HVAC/R industries. It will begin by examining atomic theory and how to use this knowledge to explain electrical pressure, current flow, resistance and electrical power. There will be an emphasis on Ohm's Law, series circuits, parallel circuits and series-parallel circuits. The student will be instructed on electric meters and their usage. Transformers, Alternating Current and Power Distribution Systems will also be studied. The course will also provide instruction in the components, symbols and circuits used in the HVAC/R industry. Corequisite: REFG 123. (F)

**REFG 122 Electrical Theory II (3)**

From motor theory to HVAC/R components to the wide varieties of electrical diagrams, the course focus is to give the student a strong background in electrical understanding necessary to install and service heating, ventilating, air conditioning and refrigeration systems. Special emphasis will be applied to troubleshooting techniques and skills. This course will provide an in-depth look at electric motor theory while examining electrical inductance and capacitance. Five motor types will be studied with an emphasis on operation, selection and application, as well as troubleshooting techniques. Motor starting dynamics and starting components will be studied as well. The course will cover the wide variety of components and circuits that are likely to be encountered in the HVAC/R industry. Electrical circuits and diagrams will be studied in-depth. Prerequisites: REFG 121 and REFG 123 or equivalents. (S)

**REFG 123 Electrical Lab I (2)**

A counter-part to the electrical theory class this course will allow the student to examine the electrical laws of voltage, current, resistance, and power by connecting circuits, measuring electrical data, and then comparing this data to the calculated values. Electrical meter operation and application, as well as safety practices will be focal points of the course. Control circuits will also be designed and examined. Emphasis will be placed on learning a solid understanding of the electrical fundamentals and troubleshooting skills necessary to work in the HVAC/R industry. Corequisite: REFG 121. (F)

**REFG 124 Electrical Lab II (2)**

This course will focus on preparing students for success in the HVAC/R industry. Because of the many electrical drive motors, electrical controls and in general, the large amount of electrical type problems likely to be encountered, the technician needs to be skilled in diagnostics, circuit diagrams and electrical meter application. This course will prepare students to that end. Students will be exposed to real circuits. Placing the volt, ohm and amp meter test leads on the circuit to discover what troubleshooting clues the readings will indicate. Time will be spent creating circuits by reading schematic wiring diagrams. Participants will be creating wiring diagrams from looking at existing diagrams. Taking volt, ohm and amperage readings for preventive maintenance will also be an activity in this class. Electrical simulators will be utilized by the students during the duration of the course. Prerequisites: REFG 121 and REFG 123. Corequisite: REFG 122. (S)

**REFG 201 Refrigeration Technology (3)**

Green is the emphasis in this course with an in-depth analysis of the refrigeration cycle. Students will use Pressure/Enthalpy diagrams to learn how dynamically the system operates and how changes in any area will affect the entire system. Proper piping and pipe sizing techniques will be studied and applied. The efficiency of the refrigeration system will be the focus. Prerequisites: REFG 101, REFG 102. (F)

**REFG 202 Refrigeration Technology (3)**

This course will provide a study of commercial refrigeration systems from a service and installation perspective. This will include studies of heat pumps, supermarket systems, ice making equipment and restaurant/food service equipment. The course emphasis will include system charging techniques, for peak efficiency, maintenance and troubleshooting. Prerequisite: REFG 201. (S)

**REFG 211 Commercial Components Lab (2)**

This course will explore the special components that are used with commercial refrigeration equipment and examine their application in operating systems. Attention will be given to system balance, in-depth compressor analysis, defrost methods, capacity controls, head pressure controls and refrigerant oils and temperature control methods. Prerequisites: REFG 101, REFG 102, REFG 112, REFG 113, or equivalents. (F)

**REFG 212 Advanced Systems Lab (2)**

This course will introduce students to more advanced systems such as parallel rack systems, ice machines, compound systems and cascade systems. An emphasis will be placed on developing HVAC/R troubleshooting techniques. Prerequisites: REFG 201, REFG 202, REFG 211 or equivalents. (S)

**REFG 226 Building System Controls (3)**

This course will begin with a review of electrical theory, relay logic, schematic diagram interpretation and troubleshooting. It will then introduce students to different automatic control systems used in the HVAC/R industry. As time permits, the course will begin with electro-mechanical controls and then proceed to pneumatics, direct digital controls, programmable logic controls and variable frequency drives. Prerequisites: REFG 121, REFG 122, REFG 123, REFG 124. (S)

**REFG 231 Air Conditioning Design (3)**

A discussion and completion format this course covers psychometrics, air quality, building envelope, air exchange and humidification. Emphasis is placed on energy efficiency as it pertains to duct design, lay out and balancing. When available, balancing will take place on site utilizing real buildings. The course includes classroom, traditional lab, homework and computer lab and building location work. Prerequisites: REFG 101, REFG 102, REFG 111, REFG 113. (F)



**REFG 232 Air Conditioning Design (3)**

Students will examine age-old questions. How big is big enough? How does one properly determine heating and cooling system size? With the energy efficient equipment that is available to us today in the HVAC industry, there comes the responsibility to size the equipment to the building energy loss or gain. Why size it correctly? Customer comfort, equipment life span and trouble free energy efficient performance are a few of the many good reasons. Green technology applications are a focus of study in this course. A working knowledge of the basics necessary to see HVAC system installation from sizing, planning and layout, selecting equipment, material list, to the completed balanced forced air system. Prerequisite: REFG 231. (S)

**REFG 253 Heating Equipment Theory (2)**

This subject matter will provide a broad exposure to a wide variety of heating equipment and their service needs. There will be in-depth discussion on gas, oil and electric heating equipment, as well as the mechanical, fuel combustion and electrical service. This course ties together how the installation of equipment affects the efficiency, all around performance and length of service equipment will have for the end user. This course was green before green was a popular word. The course covers most aspects of heating service and is accompanied by the heating equipment lab to allow application of content covered in this lecture. Prerequisites: REFG 101, REFG 102, REFG 121, REFG 123, or equivalents. (S)

**REFG 254 Heat Pump Lab (2)**

The Heat pump is back to stay and this course will explore air source and geothermal heat pumps. This study will include why heat pumps are a good alternative energy source. Students will analyze control systems, refrigeration components and the air requirements of heat pump systems. Time will be spent investigating how the refrigerant circuit differs from an air conditioner. Students will explore and wire different systems that employ back-up heat systems, dual-fuel systems and off-peak options. The heat pump will be examined from both the installation and service technician's perspective. Due to the importance of energy efficiency, systems will also be analyzed and adjusted to ensure design performance efficiencies. Prerequisites: REFG 101, REFG 102, REFG 121, REFG 123, or equivalents. (F)

**REFG 255 Heating Equipment Lab (3)**

The subject matter will provide a broad exposure to a wide variety of heating equipment and their service needs. Gas, oil and electric heating equipment will be explored, taken apart, reassembled and problems troubleshot. REFG 255 ties together how installation, good or bad, will affect the efficiency and length of service to the end user. This course accompanies a heating equipment lecture and covers the hands-on aspects of heating service application. Prerequisites: REFG 121 and REFG 123, or equivalents. (S)

**REFG 256 Hydronic Heating Systems (3)**

The study of hydronic heating from boiler operation to the types of application: forced air, convection and radiant. The course includes classroom and laboratory assignments, and will provide a working knowledge of the three types of hydronic heating, the design features and the proper installation of hydronic heating systems. Prerequisites: REFG 231, or equivalent. (S)

**REFG X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**REFG 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**REFG 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(RELS) RELIGION****RELS 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. (F) 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, S, 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)**

Minority relations is a study of the relations between advantaged and disadvantaged groups in American society. Minorities are understood as "those with less than their fair share of access to wealth and power." The experience and present status of minorities such as Native Americans, Blacks, Hispanics, women, homosexuals, and the poor are discussed. (S) 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. (S)

**SOIL X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

See also Ag Economics (AGEC), Agriculture (AGRI), Animal Science (ANSC), and Plant Science (PLSC)

**(SPAN) SPANISH****SPAN 101 First Year Spanish I (4 credits)**

The ability to speak a second language is a very marketable skill in today's globalizing environment. Many businesses find it a desirable skill for potential job candidates. It also enables you to more successfully interact with those for whom English is a second language and with those who speak no English at all. Finally, the process of learning another language can help you appreciate the history and complexity of other cultures. In a world where 5,000 to 6,000 languages are in current use, Spanish is the fourth most widely spoken; it is the first language of over 425 million people. Consequently, if you wish to acquire a foreign language, it is a valuable one to learn. ND:HUM

**SPAN 102 First Year Spanish II (4)**

The ability to speak a second language is a very marketable skill in today's globalizing environment. Many businesses find it a desirable skill for potential job candidates. It also enables you to more successfully interact with those for whom English is a second language and with those who speak no English at all. Finally, the process of learning another language can help you appreciate the history and complexity of other cultures. In a world where 5,000 to 6,000 languages are in current use, Spanish is the fourth most widely spoken; it is the first language of over 425 million people. Consequently, if you wish to acquire a foreign language, it is a valuable one to learn. ND:HUM

**(SWK) SOCIAL WORK****SWK 255 Social Work in a Modern Society (3 credits)**

This course is designed to provide an introduction to the profession of social work. Course content includes the history and development of the profession; the assumptions which underlie social work goals, functions and methods; the professional values guiding practice; and description of practice methods. The course also offers the student opportunities to learn about social roles and practice settings. (F) ND:SS

**SWK 256 Development of Social Welfare (3)**

This course covers the history, value, political and economic conditions that influence the development and provision of social welfare services. Information about inequality and the major social welfare programs that benefit the disadvantaged is included. A basic analytic model will be presented to evaluate social welfare policies. Prerequisite: SWK 255. (S) ND:SS

**SWK 297 Student Internship (4)**

As an extension of the competencies developed in subsequent course work, this course consists of a 160-hour practicum in an approved human service setting. The course is designed to provide students with the opportunity to develop and apply program-related competences and skills. Prerequisites: All other core curriculum courses must be completed with a grade of "C" or better prior to students enrolling in SWK 297.

**SWK X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**(TECH) TECHNOLOGY****TECH 109 Air Conditioning (2 credits)**

This lecture/lab type course covers various air conditioning and heating units used on modern vehicles and other equipment. The student will learn principles of mobile heating, cooling, and ventilation, and proper recovery, repair, evacuation, leak detecting, and trouble-shooting procedures. Students will test for 609 Certification for mandatory refrigerant recovery and handling procedures. (F, S)

**TECH 121 Engine Fundamentals (3)**

A theory and lab course covering basic engine operating principles, cylinder and piston service, valve service, crankshaft and bearing service, lubrication systems, rebuilding procedures, measurement fundamentals and basic engine troubleshooting. This is a half-semester course. (F, S)

**TECH 130 Industrial Safety (2)**

A basic study covering occupational safety standards and codes with emphasis on applications to typical industrial, construction and shop situations. Topics include: the role of OSHA and other regulatory agencies, fire protection, hazardous materials, personal protection, operational and construction safety, as well as the study of accident causation and prevention. (As needed)

**TECH X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**TECH 299 Special Topics (1-9)**

A course designed to meet special departmental needs.

**(THEA) THEATER****THEA 201 Theatre Practicum (1 credit)**

Participation in various activities of theatrical production. May be repeated. (F, S) ND:FA

**THEA 270 Stagecraft (1)**

An introduction to the crafts and technologies of theater production. May be repeated. (F, S) ND:FA

**(UAS) UNMANNED AERIAL SYSTEMS****UAS 111 Introduction to UAS (2 credits)**

This course will take a look into the utilization of Unmanned Aerial Systems (UAS) in the Land Surveying and Civil Construction industries. Students will learn pre-flight policies and procedures, flight operation, and post-flight data processing. (F)

**UAS 112 Unmanned Aerial Systems Certification (1)**

This course will prepare students for the FAA certification exam for the use of Unmanned Aerial 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)

**(WELD) WELDING****WELD 151 Welding Theory I (3 credits)**

This theory course introduces the processes of Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), and Oxy-Fuel Cutting (OFC). Safety for the student such as Personal Protection Equipment (PPE) and safe welding practices in the welding shop are emphasized. Welding and cutting equipment, selection of welding supplies and materials that are used in industry are introduced. The use of welding symbols and blueprint reading will be discussed and put into practice. This class may also require the need to attend field trips that include industry tours outside of the classroom. Corequisite: WELD 153. (F)

**WELD 152 Welding Theory II (3)**

This theory course focuses on advanced lessons in Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), and Oxy-Fuel Cutting (OFC). Flux Core Arc Welding (FCAW) and Plasma Arc Cutting (PAC) are also introduced. The course will also study welding symbols, drawings, nonferrous welding applications, welding codes, specifications and tests with special emphasis on the American Welding Society (AWS) welder qualifications. In addition, a resume and mock job interview process will be required and evaluated. This class may require the need to attend field trips that include industry tours outside of the classroom. Prerequisite: WELD 151. Corequisite: WELD 154. (S)

**WELD 153 Welding Lab I (5)**

This course gives beginning instructions in laboratory safety, use of Personal Protection Equipment (PPE), with a strong emphasis on the safe handling of welding and cutting equipment. Basic hands-on instruction in Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Oxy-Fuel Cutting (OFC) on various thicknesses of metal, and the techniques used. Also covered are welding supplies and equipment maintenance. This class may also require the need to attend field trips that include industry tours outside of the classroom. Corequisite: WELD 151. (F)

**WELD 154 Welding Lab II (5)**

Instruction will consist of perfecting skilled welding on plate steel in all positions using Shield Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Flux-Core Arc Welding (FCAW). The cutting processes of Carbon Arc Cutting-Air (CAC-A) and Plasma Arc Cutting (PAC) will be practiced. Students will practice and weld plates in accordance to the American Welding Society (AWS) certification guidelines. This course will also have planned industry field trips, welding competitions (state and local), and career fairs when scheduled. Prerequisite: WELD 153. Corequisite: WELD 152. (S)

**WELD 201 Welding Theory III (4)**

This course will provide the student with technical understanding in advanced welding theory which includes the study of electricity for the different welding and cutting processes. It will provide the student with a theoretical understanding of welding and cutting processes when using mechanical and computer controlled (CNC) equipment. It will provide the student with theory for writing Numerical Control (NC) programming. The course will also provide the student with theory on metallurgy pertaining to welding and cutting. A student portfolio will be designed. Prerequisite: WELD 152. Corequisite: WELD 211. (F)

**WELD 202 Welding Theory IV (4)**

This course provides theory to develop welding skills necessary to make certified welds according to the American Welding Society (AWS), American Society of Mechanical Engineers (ASME), or American Petroleum Institute (API) Codes. Weld-ability of ferrous and non-ferrous metals, metal identification, nondestructive and destructive testing, industrial safety, and OSHA regulations will be covered. This course will also provide the student with a technical understanding of weld procedures and the advanced operation of welding equipment including robotic applications. The student will learn various advanced welding certification and inspection applications which include what it takes to become a Certified Welding Inspector and a CWI's inspection duties. Prerequisite: WELD 201. Corequisite: WELD 212. (S)

**WELD 211 Welding Lab III (7)**

This course provides the student an opportunity to learn various advanced welding applications for pipe welding which include Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). The student will also learn about qualifications and certifications from various national welding codes and standards including an unlimited thickness qualification. This course will also provide the student with the technical understanding of calculating material and use of proper procedures for the completion of pipe and heavy plate weldments. The student will also learn a technical understanding of machine control cutting and robotic welding operations which include Numerical Control (NC) programming and teach pendant control. Prerequisites: WELD 152, WELD 154, MFGT 101, MFGT 123, MFGT 135, MFGT 137. Corequisite: WELD 201. (F)

**WELD 212 Welding Lab IV (7)**

This course provides the student an opportunity to use on projects a variety of advanced welding applications which include Gas Metal Arc Welding-Pulse (GMAW-P), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Shielded Metal Arc Welding (SMAW). The student will learn advanced CNC plasma cutting, robotic welding, shear, and press brake controls to correctly operate fabrication equipment needed for the completion of projects. This course will provide the student with a technical understanding of tacking and welding techniques for completing projects to reflect industry standards. This course will provide the student with a technical understanding of calculating material and use of proper procedures for the completion of projects manufactured in the lab. Prerequisite: MFGT 140 and WELD 211. Corequisite: WELD 202. (S)

**WELD 213 Fabrication Welding (7)**

This course provides the student an opportunity to learn additional advanced welding applications which include Gas Metal Arc Welding-Pulse (GMAW-P), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Shielded Metal Arc Welding (SMAW). The student will also learn additional advanced CNC cutting and robotic operations to correctly operate fabrication equipment. Prerequisite: WELD 211. Corequisite: WELD 202. (S)

**WELD X92 Experimental Course (1-9)**

A course designed to meet special departmental needs during new course development. It is used for one year after which time the course is assigned a different number.

**WELD 297 Cooperative Education (1-5)**

Cooperative Education offers students the opportunity to integrate career, social and personal development into the educational process. The cooperative education program allows students to integrate classroom study with a paid work experience related to their fields of study. It is recommended that a student has successfully completed one year of academic study.

**WELD 299 Special Topics (1-15)**

A course designed to meet special departmental needs.

## State Board of Higher Education

Dr. Mark Hagerott  
Chancellor

Don Morton, Chair  
Fargo  
Term Expires June 30, 2020

Greg Stemen, Vice Chair  
Oakes  
Term Expires June 30, 2019

Jacob Daily, NDSA  
Fargo  
Term Expires June 30, 2019

Jill Louters  
Sheyenne  
Term Expires June 30, 2022

Kathleen Neset  
Tioga  
Term Expires June 30, 2021

Birgit Pruess, Faculty Advisor  
Fargo  
Term Expires June 30, 2019

Casey Ryan  
Grand Forks  
Term Expires June 30, 2021

Ashley Thorton, Student Member  
Williston  
Term Expires June 30, 2019

Daniel Traynor  
Devils Lake  
Term Expires June 30, 2022

Andy Wakeford, Staff Advisor  
Devils Lake  
Term Expires June 30, 2019

## North Dakota State College of Science

### President's Office

---

John Richman, Ph.D., 1986  
President

Vivian Bernotas, Certificate, 1991  
Executive Assistant

### Vice Presidents

---

Harvey G. Link, M.S., 1978  
Vice President for Academic Affairs

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

Dennis Gladen, M.B.A., 2013  
Vice President for Administrative Affairs

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

Kijia Holmes, B.A., 2009  
Office Manager

Tony Grindberg, B.S., 2016  
Vice President for Workforce Affairs

## Dean

---

Ken Kompelien, M.A., 1996  
Dean of Arts, Science and Business Division

### Other President's Full Staff Members

---

Kyle Davison, B.A., 2000  
Executive Director, SEEC

Dallas Fossum, A.A.S., 2007  
Executive Director, Facilities Management

Sandi Gilbertson, M.Ed., 2015  
Executive Director, Human Resources

Keith Johnson, B.A., 1999  
Chief Financial Officer

Melissa Johnson, B.A., 2007  
Executive Director, Student and Residential Life

Kim Nelson, B.S., 2002  
Executive Director, Alumni Foundation

Justin Neppel, 2014  
Consultant, Small Business Development

Cloy Tobola, Ph.D., 2011  
Chief Information Officer

### Emeriti

---

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

James A. Horton, M.A., 1946-1982  
Vice President Emeritus

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

Don Kruckenberg, 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

Rodney Casad, D.D.S., 1966-1994  
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

Max Reinke, B.S., 1976-2016  
Faculty Emerita

## Instructional Departments

### Academic Services

---

Maria Kaduc, M.S., 1994  
Assistant Professor/Department Chair

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

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

Larissa Gilbertson, M.S., 2011  
Associate Professor

Kara Gruenberg, B.S., 1992  
Associate Professor

Suzanne Hagelstrom, M.A., 2004  
Associate Professor

### Agriculture

---

Craig Zimprich, M.S., 2008  
Associate Professor/Department Chair

Christopher Duchsherer, B.S., 2016  
Assistant Professor

Anissa Hoffman, Ph.D., 2006  
Associate Professor

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

Ron Smithberg, B.S., 2012  
Instructor  
Adult Farm Management-Fargo

Kara Wulfekuhle, B.S., 2017  
Instructor  
Adult Farm Management-Wahpeton

### Allied Dental Education Department

---

Rhonda Edwardson, M.Ed., R.D.H., C.D.A., 2005  
Associate Professor/Department Chair

Danielle Erickson, B.S., R.D.H., 2016  
Assistant Professor

Chanel Malone, B.A., R.D.A., 2014  
Assistant Professor  
Dental Assisting Program Coordinator

Stacy Owens, M.Ed., R.D.H., 2011  
Associate Professor

Mallory Regan, B.S., R.D.H., R.D.A., 2017  
Instructor

### Auto Body Repair and Refinishing Technology

---

James Erdahl, B.S., 1997  
Associate Professor/Program Coordinator

Tim Such, B.S., 1996  
Associate Professor

### Automotive Technology

*(including Powersports Technology)*

---

Luke Kasowski, B.S., 2005  
Associate Professor  
Powersports Technology Program Coordinator

Mitchell K. Jobe, B.S., 1988  
Associate Professor  
Powersports Technology

Peter Mandt, A.A.S., 2007  
Associate Professor  
Automotive Technology Program Coordinator

Brian Rempfer, A.A.S., 1996  
Associate Professor

R. David Rydell, B.S., 1986  
Associate Professor

### Building Systems

*(including Electrical Technology  
and Mechanical Systems Technologies)*

---

Ivan Maas, B.S. Ed., 1985  
Associate Professor/Department Chair  
Electrical Technology

Mark Eback, A.A.S., 2004  
Associate Professor  
Electrical Technology

Slade Fitzgerald, A.A.S., 2002  
Associate Professor  
Electrical Technology

Jeff Kukert, A.A.S., 2009  
Associate Professor  
HVAC/R Technology Program Coordinator

Lon Lessard, A.A.S., 2004  
Associate Professor  
Plumbing

John Travis, B.S., 2006  
Associate Professor  
Electrical Technology

Mark Wood, A.A.S., 2001  
Associate Professor  
HVAC/R Technology

### Business Administration and Management

*(including Culinary Arts)*

---

Gregory Anderson, M.S., 2000  
Associate Professor/Department Chair

Kyle Armitage, B.S., 2003  
Associate Professor  
Culinary Arts

Kathy Marquette, M.A., 1995  
Associate Professor

Curt Schreiber, M.B.A., 2007  
Associate Professor

Ann Smith, M.M., 2003  
Associate Professor

Mary Uhren, B.A., 1986  
Associate Professor  
Culinary Arts Program Coordinator

### Construction and Design Technology

*(including Architectural Drafting and Estimating Technology,  
Building Construction Technology, Land Surveying and Civil  
Engineering Technology, and Construction Management Technology)*

---

Randy Stach, M.S., 1996  
Associate Professor/Department Chair

Lisa Hauck, B.S., 2006  
Associate Professor  
Architectural Drafting and Estimating Technology

Jeff Jelinek, A.A.S., R.L.S., 1998  
Associate Professor  
Land Surveying and Civil Engineering Technology Program Coordinator

Seth Simonson, A.A.S., 2014  
Assistant Professor  
Land Surveying and Civil Engineering Technology

Bryan Wolfram, B.S., 2001  
Associate Professor  
Building Construction Technology

### **Diesel Technology**

*(including John Deere Tech, CAT Dealer Service, Case IH and Komatsu)*

---

Terry Marohl, B.S., 1992  
Associate Professor/Department Chair

James Aakre, B.S., 1980  
Associate Professor

Larry Ascherman, B.S., 1993  
Associate Professor  
John Deere Tech Program Coordinator

Charles Campbell, A.A.S., 1990  
Associate Professor

Eugene Floersch, B.S., 2013  
Assistant Professor

Barry Frank, A.A.S., 2012  
Associate Professor

Brian Hanson, A.A.S., 2013  
Assistant Professor

Joe Larson, A.A.S., 2018  
Instructor

Michael Redding, A.A.S., 2011  
Associate Professor  
Case IH Program Coordinator

Michael Seedorf, A.A.S., 2018  
Instructor  
CAT Dealer Service Lead Instructor

Tyler Slettedahl, A.A.S., 2009  
Associate Professor

Derrick Sundeen, A.A.S., 2013  
Assistant Professor

Seth Weight, Diploma, 2016  
Instructor

### **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  
Assistant Professor

Kathryn Beherns, 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  
Assistant Professor  
Performing Arts Program Coordinator

Sybil Priebe, M.A., 2005  
Associate Professor

### **Health Information**

---

Geralyn Matejcek, M.B.A., RHIA, RHIT, 1995  
Associate Professor/Department Chair

### **Health, Physical Education and Recreation**

---

Jane Passa, M.Ed., 1999  
Assistant Professor/Department Chair  
Head Coach, Volleyball

Thomas Dryburgh, M.Ed, 2014  
Women's Basketball Coach

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

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

Rick Hendrickson, M.S., 1979  
Associate Professor

John Kroshus, B.S., 1996  
Associate Professor

### **Manufacturing Technologies**

*(including Precision Machining Technology; Robotics, Automation and Mechatronics Technology; 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

Vance Harthun, B.S., 2007  
Associate Professor  
Welding Technology Program Coordinator

LeAnne Jaenisch, B.S., 2014  
Assistant 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 Lead

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

Assistant Professor  
Welding Technology, NDSCS-Fargo

Lonnie Wurst, B.A., 2014

Assistant Professor  
Robotics, Automation and Mechatronics Technology  
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

Cheryl Brown, M.S., 2003

STEM Outreach Specialist

Brian Hagelstrom, M.S., 2000

Associate Professor

Lawrence P. Merbach, M.Ed., 1966-76, 1980

Professor

William Shay, Ph.D., 2006

Associate Professor

---

### Nursing

Barbara Diederick, M.S.N., R.N., 1980

Associate Professor/Department Chair

Terri Anderson, M.S.N., R.N., 2018

Instructor

Jeri Christiansen, M.S.N., R.N., 2015

Assistant Professor

Trina Fear, M.S.N., R.N., 2016

Assistant Professor

Stacie Garland, M.S.N., R.N., 2018

Instructor

Ruth Gladen, M.S.N., R.N., 1996

Associate Professor

RN Program Coordinator

Sheila Goettle, M.S.N., R.N., 2008

Associate Professor

Randy Hunt, B.S.N., R.N., 2018

Instructor

Whitney Petersen, B.S.N., R.N., 2015

Assistant Professor

Jan Rudisel, M.S.N., R.N., 2005

Assistant Professor

Michelle Tompkins, B.S.N., R.N., 2015

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

Amy Karls, B.S., COTA/L, 2017

Outreach Therapist

---

### Pharmacy Technician

Melissa Krava, B.S., 2018

Instructor/Department Chair

---

### 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

Harvey Henderson, BSc, MDiv., 2001

Associate Professor

Char Schuler, M.S.W., 2005

Associate Professor

Kelly Wolf, Ph.D., 2005

Instructor

# NORTH DAKOTA STATE COLLEGE OF SCIENCE

## SELECTED CAMPUS PHONE NUMBERS

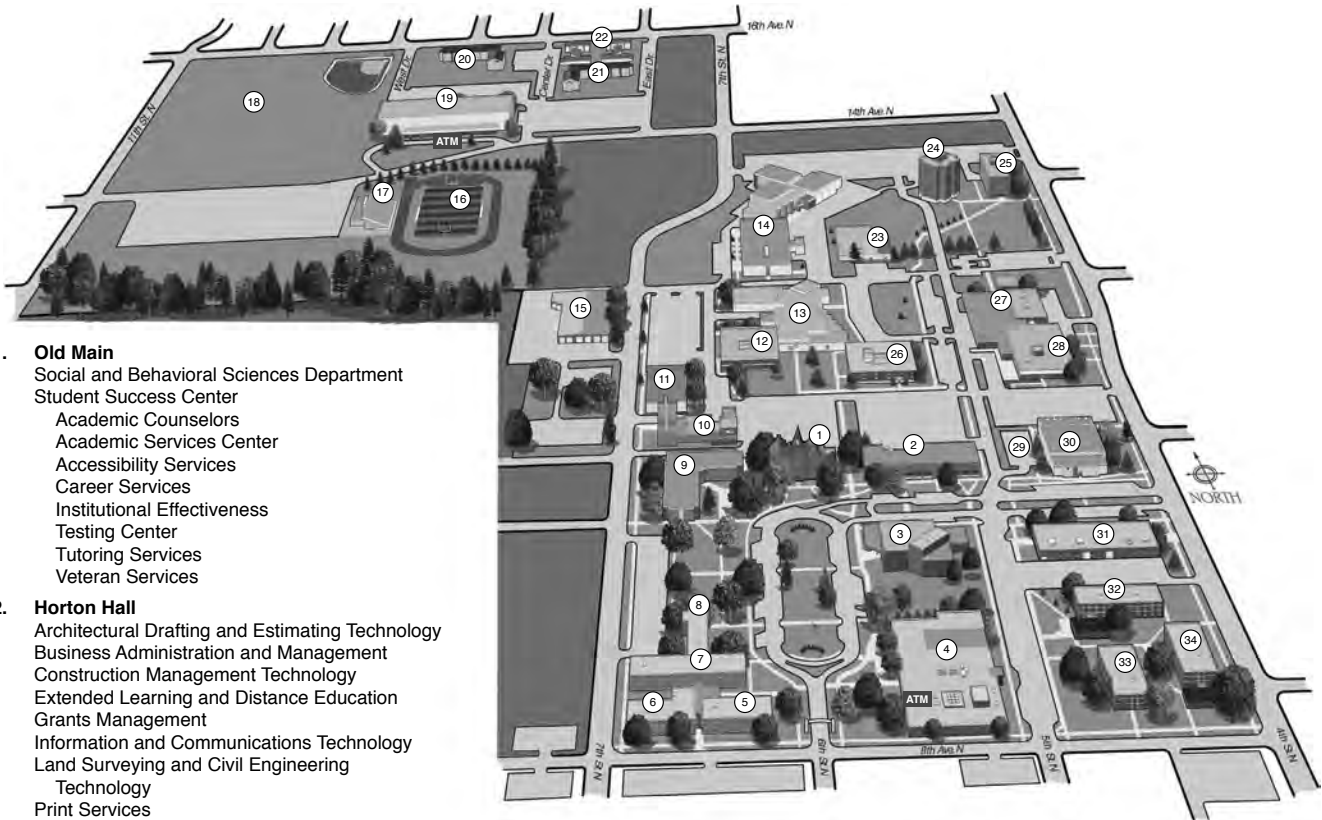
Department	Phone
Accounts Payable .....	671-2288
Alumni/Foundation .....	671-2247
Arts, Science and Business Division .....	671-2295
Athletics .....	671-2281
Bookstore .....	671-2125
Business Affairs .....	671-2216
Campus Police .....	671-2233
College Relations and Marketing .....	671-2245
Customer Service Desk .....	671-2401
Dining Services .....	671-2321
Distance Education .....	671-2275
Enrollment Services	
Admission .....	671-2521
Records .....	671-2521
Facilities Management .....	671-2313
Financial Aid .....	671-2207
Grants Management .....	671-2154
Human Resources .....	671-2903
Information Technology Services (ITS) Service Desk .....	671- 3333
Library Services .....	671-2618
Mail Center .....	671-2227
President's Office .....	671-2221
Residential Life .....	671-2224
Student Life Assistant Director .....	671-2109
Student Health and Counseling Services .....	671-2286
Student Success Center .....	671-3000
Vice President for Academic Affairs Office .....	671-2416
Vice President for Administrative Affairs Office .....	671-2217
Vice President for Student Affairs Office .....	671-2258
Vice President for Workforce Affairs Office .....	701-231-6914
Workforce Affairs Training Division .....	671-2206

To reach these offices toll-free, call 1-800-342-4325 and use the extensions listed above.



# NORTH DAKOTA STATE COLLEGE OF SCIENCE

WAHPETON CAMPUS MAP - 800 SIXTH STREET NORTH



## 1. Old Main

Social and Behavioral Sciences Department  
Student Success Center  
Academic Counselors  
Academic Services Center  
Accessibility Services  
Career Services  
Institutional Effectiveness  
Testing Center  
Tutoring Services  
Veteran Services

## 2. Horton Hall

Architectural Drafting and Estimating Technology  
Business Administration and Management  
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  
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  
College Relations and Marketing  
English, Communication and Performing Arts Department  
Financial Aid  
Human Resources  
Mathematics and Science Department  
President's Office  
Safety

## 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. Visitor Parking

## 30. Mayme Green Allied Health Center

Allied Dental Education  
Health Information  
Nursing  
Occupational Therapy Assistant  
Pharmacy Technician

## 31. Ballweber Hall

Auto Body Repair and Refinishing

## 32. Babcock Hall

## 33. McMahan Hall

## 34. Satterlee Hall

# NORTH DAKOTA STATE COLLEGE OF SCIENCE

NDSCS-FARGO ROOM DIRECTORY - 1305 19TH AVENUE NORTH



KEY		
	Office Space	
	Meeting Room	
	Classroom	
	Other	



## 2017 NDSCS PLACEMENT REPORT

	Responding Graduates	Jobs Posted with NDSCS Career Services*	Beginning Average Monthly Salary	Reported High Monthly Salary	Placement Rate
Agriculture <sup>*</sup>	28	80	\$2,537	\$5,416	100%
Architectural Drafting and Estimating Technology	11	150	\$2,995	\$3,700	100%
Associate in Science in Nursing (RN)	12	68	\$4,175	\$4,864	100%
Auto Body Repair and Refinishing Technology	9	81	\$2,714	\$4,000	100%
Automotive Technology <sup>^</sup>	10	111	\$3,707	\$5,000	100%
Building Construction Technology	6	102	\$2,550	\$3,000	100%
Business Management <sup>**</sup>	23	133	\$2,382	\$3,553	100%
Caterpillar Dealer Service Technician	12	70	\$4,098	\$4,158	100%
Construction Management Technology	8	139	\$4,115	\$6,290	100%
Culinary Arts <sup>~</sup>	9	72	\$2,093	\$2,513	100%
Dental Assisting	23	93	\$3,248	\$5,200	96%
Dental Hygiene	22	96	\$4,157	\$6,413	100%
Diesel Technology <sup>***</sup>	58	112	\$3,342	\$6,000	100%
Electrical Technology <sup>^^^</sup>	38	153	\$3,301	\$6,673	100%
Emergency Medical Services (EMS) <sup>---</sup>	13	58	\$3,631	\$6,000	92%
Health Information <sup>**</sup>	3	72	-	-	100%
HVAC/R Technology	7	85	\$3,282	\$3,727	100%
Information and Communications Technology <sup>^^</sup>	6	90	\$2,948	\$3,813	100%
John Deere Tech	29	112	\$3,117	\$6,547	100%
Land Surveying and Civil Engineering Technology	12	148	\$3,026	\$4,000	100%
Occupational Therapy Assistant	16	60	\$3,109	\$3,479	60%
Pharmacy Technician	9	64	\$2,702	\$3,200	100%
Plumbing	10	61	\$2,612	\$3,467	100%
Powersports Technology	9	73	\$2,852	\$3,467	100%
Practical Nursing	32	90	\$3,271	\$4,853	97%
Precision Machining Technology	9	77	\$3,357	\$3,813	100%
Robotics, Automation and Mechatronics Technology	13	76	\$4,076	\$5,200	100%
Welding Technology	34	92	\$3,525	\$10,000	100%
<b>Totals and Averages</b>	<b>471</b>	<b>2,618</b>	<b>\$3,267</b>	<b>\$4,754</b>	<b>98%</b>

**NOTES:**

<sup>\*</sup>Agriculture (Includes Animal Science, Crop Production Sales and Technology, Farm Management and Ranch Management)

<sup>^</sup>Automotive Technology (Includes Automotive Alignment and Brake Technician, Automotive Engine Technician, Automotive Transmission and Driveline Technician)

<sup>\*\*</sup>Business Management (Includes Business Technology Management, General Business Management, Marketing Management and Restaurant Management)

<sup>~</sup>Culinary Arts (Includes Chef Training & Management Technology and Restaurant Management)

<sup>\*\*\*</sup>Diesel Technology (Includes General Diesel, Case IH, Komatsu and Auto and Diesel Master Technician)

<sup>^^^</sup>Electrical Technology (Includes Construction, Industrial and Master Technician)

<sup>---</sup>Emergency Medical Services (EMS) (Includes Emergency Medical Technician, Advanced Emergency Medical Technician, Paramedic Technology)

<sup>\*\*</sup>Health Information (Includes Health Information Technician and Medical Coding)

<sup>^^</sup>Information and Communications Technology (Includes Information Systems Administrator, Information Technology Support, IT Forensics, Web Design and Web Developer)

\*Jobs posted with NDSCS Career Services may be related to more than one academic program

Admission  
Information

Tuition & Fees

Financial Aid

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Information

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Procedures

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Education

College  
Outreach

Student  
Services

Academic  
Programs

Course  
Descriptions



NORTH DAKOTA STATE COLLEGE OF SCIENCE

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**NORTH DAKOTA STATE COLLEGE OF SCIENCE  
ENROLLMENT SERVICES**

800 6th Street North | Wahpeton, ND 58076

800-342-4325, ext. 2521

[NDSCS.Admissions@ndscs.edu](mailto:NDSCS.Admissions@ndscs.edu)