

**Cass County
Career and Technical Education Center
&
Career Innovation Center**

**Course Catalog and Program Information
2025-2026**

Revised – January 2025

Table of Contents

Our North Star!	3
General Information	4
Link to C3TEC - Course Sharing Handbook.....	4
What is your career interest and pathway?	5
Career Innovation Center	7
AGRICULTURAL EDUCATION	8
NEW Agricultural Education Course Options – To Be Finalized Spring 2025.....	9
AVIATION TECHNOLOGY	10
CONSTRUCTION TECHNOLOGY &	11
HEAVY EQUIPMENT OPERATIONS	11
DIESEL TECHNOLOGY	12
HEALTH SCIENCES & ALLIED HEALTH	13
INFORMATION TECHNOLOGY,	16
COMPUTER SCIENCE & CYBERSECURITY.....	16
WELDING & MANUFACTURING	18
Dual Credit Opportunities.....	20



Our North Star!

Mission

Career exploration and experiences for all students to discover their passion!

Vision

C3TEC will empower each student through career and technical education by harnessing resources across member schools and a flexible network for learning. Community partnerships will enrich career exploration and foster college preparation, giving students a competitive advantage for future success.

We Believe

We believe each learner should have access and means to succeed in their career pathway goals.

We Value

Opportunities, Learning for All, Empowerment

Partnership Goals

- Expand and enhance CTE opportunities for member schools.
- Prepare students for emerging careers.
- Support workforce needs in the region and state.
- Post-secondary program alignment and preparation
- Leverage state CTE funding and grant opportunities
- Strengthen business partnerships and work-based learning experiences.
- Foster and coordinate enhanced activities and virtual experiences.

The C3TEC Story

In 2014, the Cass County Career and Technical Education Center (C3TEC) was established as a collaborative effort between Fargo and West Fargo Public Schools and Northern Cass School District, adding Central Cass in 2016. As members of the C3TEC, district leaders are committed to working collaboratively to strengthen career and technical education options for all high schools in the region through the sharing of programs, curriculums, teachers, facilities, and equipment.

As an area career center network, C3TEC's programs are housed in one or more of the member district's high schools versus a single site. Through the sharing of courses, students may travel to sites to attend classes; along with emerging options for students to share curriculum via video conferencing and/or online delivery. The center model contributes to cost efficiencies for schools while creating opportunities for more students to enroll in CTE courses.

Through the C3TEC, leaders will work to build and expand upon current partnerships with business and college institutions to create relevant educational opportunities and alignment for students. The C3TEC will help to foster innovative education that contributes to building a skilled regional workforce to meet economic workforce demands to grow tomorrow's workforce.

General Information

Student Registration

The C3TEC Program of Studies communicates the career and technical education programs, pathways, and courses identified to be shared under the C3TEC network. Course offerings may be located onsite at partner high schools, the Career Innovation Center, or online.

Students will communicate their initial interest in C3TEC and Career Innovation Center courses through their yearly registrations.

Process Timeline

- a. C3TEC annual registrations will align with a student's home school registration process January – February.
- b. Courses descriptions and details may be included in each high school's registration catalog and/or this document for reference in the process.
- c. Students may be asked to officially register for C3TEC, CIC, and NDSCS dual credit courses through specific website registrations procedures to confirm accurate participation.
- d. C3TEC registration information is located at www.casscte.com
- e. Principal Advisory Group members will meet in March, May, August, and December to confirm C3TEC student requests for fall and spring semesters.
- f. An enrollment spreadsheet will be shared between school scheduling principals to monitor C3TEC shared course enrollments and contribute to the C3TEC schedule design.
- g. The C3TEC director will send periodic reminders to principals and counselors for enrollment updates.
- h. Principals are responsible for updating student registrations in the spreadsheet.
- i. Principals must notify the CTE Director regarding registration changes that as this may impact staffing.
- j. A data sharing release form has been signed between districts to ensure approval of the process.

New courses located at the Career Innovation Center will be communicated as courses are approved with fall and spring registrations procedures communicated through C3TEC Principal, Career Advisors, and Career Development Counselors. Courses highlighted in yellow are proposed for the Career Innovation Center and were not listed in the Fargo Program of Studies or West Fargo Course Catalog for 25-26. Information regarding these courses and options for student participation will be provided to principals and counselors when available. Courses are anticipated to launch fall and spring of 2025-2026.

Dual Credit:

Please note the list of dual credits courses at the end of the catalog, giving students the opportunity to earn Dual Credit and providing a head-start on a postsecondary education. Students must be in the 10th Grade to enroll in dual credit courses and eligible based on college guidelines. An admission application is required through the college. Fees are the responsibility of the home school or the student's parents or legal guardians. Instructors will assist in the enrollment process. Courses may be eligible for tuition reduction and students who qualify for free or reduced lunches may be eligible for financial aid or grants through the Bank of ND.

Detailed information is available at www.casscte.com and through the [Link to C3TEC - Course Sharing Handbook](#)



Contact us at:

Denise Jonas, Director of Career & Technical Education
djons@west-fargo.k12.nd.us
Phone: 701-499-1008

Follow us on:

www.casscte.com
twitter.com/CassCTE

What is your career interest & pathway?

DELIVERY METHODS

How do you like to learn?

On-site (OS):

Students will participate in classroom and lab activities at a designated school site. Students may be responsible for transportation dependent upon school agreement. Locations:

- CC = Central Cass HS
- CIC = Career Innovation Center – 64th Ave S.
- FNHS – North HS
- FSHS = South HS
- NC = Northern Cass HS
- NDSCS = Fargo 19th Avenue N
- WFHHS = Horace HS
- WFSHS = Sheyenne HS
- WFHS = West Fargo HS

Video Conference (VC):

The course will be delivered via video conferencing tools and online resources. Courses will be scheduled by period. Students will have the opportunity to learn through direct instruction, activities, and feedback from their instructor. Field trips may be scheduled by the instructor for extended learning and career experiences.

Online (OL):

The course will be delivered through an (asynchronous) online format using a classroom learning management tool such as (Canvas, Schoology, Google, etc.). Instructors will have a scheduled office hour to provide feedback and answer student questions via e-mail, an online chatroom, or by phone. Schools will have the option to flexibly schedule students based open hours in their schedule.

Work-based Learning (WBL):

Cooperative Work Experience is a paid or unpaid on-the-job experience of 75 hours. Students must: secure their employment, have completed one credit in a CTE pathway, must register for the course during registration or with school counselor, obtain approval by a designated CTE teacher or career advisor, complete course requirements of hours, professional modules, and CRP reflections.

Agricultural Education		
OS	Intro to Agriculture	CIC
OL	Intro to Agriculture Online	VC
OS	Plant Science I	CIC
OS	Plant Science II	CIC
OS	World & International Agriculture	OL
OS	Agriscience Technology I	CIC
OS	Agriscience Technology II	CIC
OS	Plant Systems and Meat Processing	CIC
WBL	Agriculture Coop. Work Experience	Job Placement
Aviation Technology		
OS	Aviation Technology I	WFSHS
OS	Aviation Technology II	WFSHS
OS	Unmanned Aerial Vehicle	WFSHS
WBL	Aviation Coop. Work Experience	Job Placement
Building Trades		
OS	Foundations of Building Trades	CIC
OS	Building Trades I	CC/CIC
OS	Building Trades II	CIC
OS	Heavy Equipment Operations & Math	CIC
OS	Heavy Equipment Operation & Mechanics	CIC
Diesel		
OS	Diesel Technology I	WFSHS
OS	Diesel Technology II	WFSHS
WBL	Diesel Technology Coop.	Job Placement
Health Science		
OS	Certified Nurse Assistant	All HS
OS	Emergency Medical Services	CIC/HHS/NC
OS	Emergency Medical Technician	CIC
OS	Health Science I	All HS
OS	Health Science II	All HS
OS/OL	Medical Terminology	All
OS	Prevention & Care of Athletic Injuries	CC/NC/WF
OS	Pharmacy Technician	CC/CIC
WBL	Health Science Coop. Work Experience	Job Placement
Information Technology		
OS	Intro to Programming	Fargo/WF
OS	Programming with Python	Fargo/WF
OS	Fundamentals of JAVA Programming	Fargo/WF
VC	AP Computer Science A - (AP Java)	TBD
OS	Mobile App Development & Security	WFSHS
OS	IT Essentials I	FSHS/WFSHS
OS	IT Essentials II	FSHS/WFSHS
OS	Intro to Networks & Cybersecurity	FSHS
OL	Cisco I – Networking	NDSCS-Fargo
WBL	Help Desk – Coop. Work Experience	Job Placement
Welding & Manufacturing		
OS	Welding I – NDSCS	NDSCS-Fargo
OS	Welding II - NDSCS	NDSCS-Fargo
OS	Manufacturing I	FSHS
OS	Manufacturing II	FSHS
OS	Manufacturing III	FSHS
WBL	Manufacturing Coop. Work Experience	Job Placement

COORDINATED PLAN OF STUDY FOR AGRICULTURE EDUCATION

Plant Systems, Environment Services, & Natural Resources

C3TEC	MIS03	Course Name	Cr
CC100	01011	Intro to Agriculture	1
CC1001	01011	Intro to Agriculture – VIDEO CONFERENCING	1
CC101	01053	Plant Science I (formerly Botany/Horticulture I)	1
CC102	01054	Plant Science II (formerly Botany/Horticulture II)	1
CC103	01069	World & International Agriculture - ONLINE	1
CC104	01021	Agriscience Technology I	1
CC105	01022	Agriscience Technology II	1
CC106	01068	Plant Systems and Meat Processing	.5-1
CC109 or School Code	01999	Cooperative Work Experience	.5-4

COORDINATED PLAN OF STUDY FOR AVIATION TECHNOLOGY

Transportation Operation

CC201/CC202	17812	Aviation Technology I	1
CC205/206	17813	Aviation Technology II	1
CC207	17814	Unmanned Aerial Vehicle	.5
CC209 or School Code	17999	Cooperative Work Experience	.5-4

COORDINATED PLANS FOR ARCHITECTURE & CONSTRUCTION

Construction Pathway and Architecture & Construction Career Cluster

CC701/CC702	17105	Foundations of Building Trades (Construction Technology)	1
CC703/CC704	17100	Building Trades I	2
CC705/CC706	17117	Building Trades II	2
CC707	37020	Heavy Equipment Operations - Construction Exploration	1
CC708	37020	Heavy Equipment Operations - Basic Grade Construction Math	1
CC709	17200	Heavy Equipment Mechanics - Equipment Fundamentals	1
CC710	17201	Heavy Equipment Mechanics - Basic Maintenance of Mobile Equipment	1

COORDINATED PLAN OF STUDY FOR DIESEL TECHNOLOGY

Facility and Mobile Equipment Maintenance

CC305/306	17040	Diesel Technology I	1
CC307/308	17041	Diesel Technology II	2
CC309 or School Code	17999	Cooperative Work Experience	.5-4

COORDINATED PLAN OF STUDY FOR HEALTH SCIENCE AND ALLIED HEALTH

Therapeutic Services

CC510	07032	Certified Nurse Assistant	.5-1
CC520/CC521	07044	Emergency Medical Services (EMS) or 07045	.5-1
CC522	07046	Emergency Medical Technician (EMT)	2
CC506/507	07033	Health Science I	1
CC508	07035	Health Science II	.5-1
CC501, CC502	07036	Medical Terminology Online	.5-1
CC530	07075	Pharmacy Technician – full program at Central Cass	1-2
CC535	07075	Pharmacy Technician – Pharmacy Technician – Orientation courses to pathway	1
CC505	07034	Prevention and Care of Athletic Injuries	.5
CC509 or School Code	07999	Health Science Cooperative Work Experience	.5 - 4

COORDINATED PLAN OF STUDY FOR INFORMATION TECHNOLOGY

Programming and Software Development

CC601	27120	Intro to Programming	.5
CC602	27123	Programming Essentials with Python	.5
CC603, VE289	27125	Fundamentals of JAVA Programming	.5
CC604, VE290	27520	AP Computer Science A – (AP Java)	.5
CC605	27128	Mobile App Development & Security	.5

Network Systems

VE285, TECH323, CC606	27219	IT Essentials I	.5
VE286, TECH324, CC607	27120	IT Essentials II	.5
CC609 or VE395	27265	Intro to Networks	.5
CC608, VE391	27266	Cisco I – Introduction to Networks	.5
School Code	27999	Help Desk or Cooperative Work Experience	.5-1

COORDINATED PLAN OF STUDY FOR WELDING & MANUFACTURING

Production

VE241 & VE242	17113	Manufacturing I	1
VE341 & VE342	17113	Manufacturing II	1
VE343 & VE344	17236	Manufacturing III	1
VE339 or CC610	17236	Welding I	1
VE340 or CC611	17237	Welding II	1
VE389 or School Code	17999	Manufacturing Cooperative Work Experience	.5-4

Career Innovation Center

Opening - August 26, 2025

Address: 4230 64th Avenue South in Fargo, ND 58104

CIC programming is a partnership between C3TEC and NDSCS



Students must register through their home high school.

The 2025-2026 schedule will be finalized following spring registration and student confirmation.

Students must commit to participation and transportation as space is limited.

2025-2026 – CIC Course Offerings – DRAFT Schedule

Bell Schedule	M-F	Block 1 7:30 – 9:00 am	Block 2 9:30 – 11:00 am	Break	Block 3 12:00 – 1:30 pm	Block 4 1:30 – 3:00 pm
Agricultural <i>C3TEC Instructor</i>	Semester 1	Plant Systems & Meat Processing	Plant Science I		Intro to Agriculture	Intro to Agriculture Online
	Semester 2	Agriscience Technology I	Plant Science II		World Agriculture Online	
Construction <i>C3TEC Instructor</i>	Semester 1	Building II	Building I		Heavy Equipment Construction	Foundations of Construction
	Semester 2				Heavy Equipment Basic Math	
Health Science <i>NDSCS Partner Instructors</i>	Semester 1	PRMT 101 & PRMT 111			Intro to Nursing	EMR 1:30 – 3:00 pm
	Semester 2	PRMT 101 & PRMT 111	Medical Terminology Online		Intro to Nursing	EMR 1:30 – 3:00 pm
	Year				EMT 2:00 – 3:25 pm	



AGRICULTURAL EDUCATION

The vision of Agricultural Education is to prepare students for successful careers and a lifetime of informed choices in global agriculture, food, fiber, and natural resource systems.

INTRO TO AGRICULTURE

Course Code: (CC100)	Grade: 9-12	Credit: 1	Term: Fall	Prerequisite: None
-----------------------------	--------------------	------------------	-------------------	---------------------------

Location and delivery: Career Innovation Center

Instructor: TBD

Transportation: Students may be responsible for transportation to CIC. Schools will provide bussing for field trips.

Description: This course is designed to enhance students' perceptions of agriculture and careers. This course serves as a foundation for Agriculture Education. Topics may include soils, irrigation, land judging, plants, crop and weed identification, range management, horticulture, nursery, diseases, insects, and chemicals. This course will be in person to provide increased opportunities for lab experience **(MIS03 01011)**.

INTRO TO AGRICULTURE – (Video Conferencing)

Course Code: (CC1001)	Grade: 9-12	Credit: 1	Term: Fall	Prerequisite: None
------------------------------	--------------------	------------------	-------------------	---------------------------

Location and delivery: Video Conferencing

Instructor: TBD

Transportation: Schools will provide bussing for field trips.

Description: This course is designed to enhance students' perceptions of agriculture and careers. This course serves as a foundation for Agriculture Education. Topics may include soils, irrigation, land judging, plants, crop and weed identification, range management, horticulture, nursery, diseases, insects, and chemicals. As a hybrid course, students will learn through video conferencing and online tools. Students will be asked to complete activities, in and out of the classroom, so should possess skills to navigate independently. **(MIS03 #01011)**

PLANT SCIENCE I

Course Code: (CC101)	Grade: 9-12	Credit: 1	Term: Fall	Prerequisite: None
-----------------------------	--------------------	------------------	-------------------	---------------------------

Location and delivery: Career Innovation Center

Instructor: TBD

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: This course focuses on the fundamental principles of horticulture. Students will be exposed to concepts in propagating plants in a greenhouse setting. Students will study Botany/plant science, growing plants, the business of raising and selling plants, and small business management. Hands-on experiences will include computer assisted landscape design, home and business landscaping, commercial greenhouse operation, plant nutrition, landscape beautification, and community involvement. As a hybrid course, this class will be delivered through video and on-line coursework. Students will be asked to complete activities, in and out of the classroom, so should possess skills to navigate independently. **(MIS03 #01053)**

PLANT SCIENCE II

Course Code: (CC102)	Grade: 9-12	Credit: 1	Term: Spring	Prerequisite: Plant Science I
-----------------------------	--------------------	------------------	---------------------	--------------------------------------

Location and delivery: Career Innovation Center

Instructor: TBD

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: This course is a continuation of Plant Science to prepare students to produce greenhouse/nursery plants and to maintain plant growth and propagation structures. As a hybrid course, this class will be delivered through video and on-line coursework. Students will be asked to complete activities, in and out of the classroom, so should possess skills to navigate independently. **(MIS03 #01054)**

WORLD & INTERNATIONAL AGRICULTURE (Online)

Course Code: (CC103)	Grades: 9-12	Credit: ½	Term: Spring	Prerequisite: None
----------------------	--------------	-----------	--------------	--------------------

Location and delivery: Career Innovation Center or online

Instructor: TBD

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: A course designed to introduce students to global agriculture and careers that impact the world, the environment, society, and the economy. This course also includes agricultural innovation, career development, leadership, communications, and personal finance. As an online course, course content will be facilitated for students to independently complete activities through a flexible schedule. Students will be asked to complete activities, in and out of the classroom, so should possess skills to navigate independently. **(MIS03 #01069)**

NEW Agricultural Education Course Options – To Be Finalized Spring 2025

PLANT Systems and MEAT PROCESSING (Harvest to Table: feed yourself and the growing world!)

Course Code: (CC106)	Grades: 10-12	Credit: 1	Term: Spring	Prerequisite: None
----------------------	---------------	-----------	--------------	--------------------

Location and delivery: Career Innovation Center

Instructor: TBD

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: This course will explore how the growing of plant foods systems and meat products contribute to sustainable food systems. Students will learn how to safely operate the processing equipment and develop skills in meat processing and food production using beef, lamb, pork, poultry, or wild game, along with garden and plants product to market the product. A lab coat is required for protection and safety. **(MIS03 #01068)**

AGRICULTURAL TECHNOLOGY I

Course Code: CC104	Grade: 10-12	Credit: 1	Term: TBD	Prerequisite: None
--------------------	--------------	-----------	-----------	--------------------

Location and delivery: Career Innovation Center

Instructor: TBD

Transportation: Schools will provide bussing for field trips.

Description: Students will explore the use of technologies in agriculture and automated farming practices related to plant and animal sciences, natural resources, agricultural mechanics. Units will explore precision agriculture, [MARSfarm](#), hydroponics, drones, [farmbot precision growing](#), breeding, genetics, biotechnology, plant propagation techniques, agricultural production technologies, marketing technologies, aquaculture, animal health, and small animal care may be taught. **(MIS03 #01021)**

AGRISCIENCE TECHNOLOGY II – Coming Spring 2026

Course Code: (CC105)	Grade: 10-12	Credit: 1	Term: TBD	Prerequisite: Agri. Tech I
----------------------	--------------	-----------	-----------	----------------------------

Location and delivery: Career Innovation Center

Instructor: TBD

Transportation: Schools will provide bussing for field trips.

Description: This course is a continuation of Agriscience Technology exploring further exploring emerging technologies and processes that impact and innovate the agricultural industry. **(MIS03 #01022)**

AGRICULTURE COOP. WORK EXPERIENCE

Course Code: School Code	Grade: 11-12	Credit: 1 per year	Term: 75 hours =1/2 cr.	Prerequisite: 1 Ag. credit
--------------------------	--------------	--------------------	-------------------------	----------------------------

Location and delivery: Approved job site.

Instructor: TBD

Transportation: Student is responsible for transportation to and from job sites.

Description: Students in this program earn school credit for on-the-job training while working in a CTE pathway - related job for a local business. Students apply the knowledge and skills learned in their CTE pathway classes as they perform their duties at work. Students are supervised by the employer as well as the classroom teacher and must complete 75 hours by the end of the semester. Student may register, but must apply and be approved by the CTE instructor before officially enrolled. **(MIS03 #01022)**



AVIATION TECHNOLOGY

The vision for Aviation Technology education is to expose and empower young learners with the knowledge and technical skills to pursue careers in the aerospace industry including flight, design and engineering, maintenance and unmanned aerial systems.

AVIATION TECHNOLOGY I

Course Code: (CC201, CC202)	Grade: 10-12	Credit: 1	Term: Year	Prerequisite: None
------------------------------------	---------------------	------------------	-------------------	---------------------------

Location and delivery method: On-site Sheyenne HS – 7:30 am – 8:15 am - Early Bird or A/B Block Option

Instructor: Mr. David Gravdahl

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Exposes students to careers in the field of aviation, such as air traffic control, flight dispatching and airport management, etc. The course covers the fundamentals of flight, flight operations, aviation weather, performance and navigation. Units of instruction include flight history, safety, space, airport layout, aeronautical charts, radar, radio procedures, aerodynamics, weather patterns and hazards. Emphasis on applied academics in math and science are integrated, along with decision-making principles as it applies to flight-related factors. Lessons are enhanced by guest speakers and field trips to local airports and aviation sites. **(MIS03 #17812)**

AVIATION TECHNOLOGY II

Course Code: (CC205/206)	Grade: 10-12	Credit: 1	Term: Year	Prerequisite: Aviation I
---------------------------------	---------------------	------------------	-------------------	---------------------------------

Location and delivery method: On-site Sheyenne HS. A/B Block Schedule

Instructor: Mr. David Gravdahl

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course is a continuation of concepts learned in Aviation I. This course will cover advanced flight topics from area Aviation experts. Students will be exposed to new concepts in UAS and drone technology as well as expanding topics covered in Aviation I to an advanced level. Students will be preparing to pass the Federal Aviation Administration (FAA) private pilot written exam. Successful completion of Aviation I is a prerequisite. **(MIS03 #17813)**

UNMANNED AERIAL VEHICLE

Course Code: (CC207)	Grade: 11-12	Credit: ½	Term: Fall or Spring	Prerequisite:
-----------------------------	---------------------	------------------	-----------------------------	----------------------

Location and delivery method: On-site Sheyenne HS – A/B Day Block Schedule or Video Conference option

Instructor: Mr. David Gravdahl

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: The Unmanned Aerial Systems course will teach students a basic understanding of recreational and commercial unmanned aircraft operations. They will identify the responsibility and authority of the remote PIC, discuss rules of UAS operation, understand the significance of airspace Classes, special-use airspace, understand weather and how it affects flight of UAV, general loading and performance data, and airport operations. Students will be prepared to take the FAA Part 107 exam. Optional dual credit through NDSCS. **(MIS03 #17814)**

AVIATION COOPERATIVE WORK EXPERIENCE

Course Code: School Code	Grade: 11-12	Credit: 1 per year	Term: 75 hours =1/2 cr.	Prerequisite: 1 HS credit
---------------------------------	---------------------	---------------------------	--------------------------------	----------------------------------

Location and delivery method: Approved job sites

Instructor: Aviation teacher or educator with WBL credential

Transportation: Student is responsible for transportation to and from job sites.

Description: Students in this program earn school credit for on-the-job training while working in a CTE pathway - related job for a local business. Students apply the knowledge and skills learned in their CTE pathway classes as they perform their duties at work. Students are supervised by the employer as well as the classroom teacher and must complete 75 hours by the end of the semester. Student may register, along with CTE instructor approval before official enrollment.

(MIS03 #17999)

CONSTRUCTION TECHNOLOGY &

HEAVY EQUIPMENT OPERATIONS



FOUNDATIONS OF BUILDING TRADES (Construction Technology)

Course Code: (CC701/702)	Grade: 10-12	Credit: 1	Term: Fall	Prerequisite:
---------------------------------	---------------------	------------------	-------------------	----------------------

Locations and delivery method: Career Innovation Center and Central Cass High School, On-site

Instructor: Caden Wyse or Ben Shook

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Learners will study the technology involved in the construction of residential and industrial structures. Throughout the semester learners will be exposed to safety, architecture, environmental impacts, materials science, design modification, engineering and 3-D modeling, advancements in technology, and exploration of various construction careers. Learners will exit the class with a strong knowledge of fundamental construction techniques and can “build” upon this knowledge through various challenging endeavors. (MIS03 #17999)

BUILDING TRADES I

Course Code: (CC703/704)	Grade: 10-12	Credit: 2	Term: Year	Prerequisite:
---------------------------------	---------------------	------------------	-------------------	----------------------

Locations and delivery method: Career Innovation Center and Central Cass High School, On-site

Instructor: Caden Wyse or Ben Shook

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Building Trades I an orientation to the building trades that meets industry standards. The course is standards-based, beginning with Core Curriculum, which includes Basic Safety, construction math, Introduction to Hand and Power Tools, Introduction to Construction Drawings, Basic Rigging, Communication, and Employability Skills. Fundamentals of building are introduced, including floor, wall, roof systems, and structure enclosure. Building Trades I is a prerequisite to Building Trades II. (MIS03 #17999)

BUILDING TRADES II

Course Code: (CC705/706)	Grade: 10-12	Credit: 12	Term: Year	Prerequisite: Building Trades I
---------------------------------	---------------------	-------------------	-------------------	--

Location and delivery method: Career Innovation Center, On-site

Instructor: Caden Wyse or Ben Shook

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Building Trades II continues with the fundamentals of building with advanced training in floor, wall, and roof systems through the construction of a residential house project. Advanced techniques and enhanced safety protocol will be included with an emphasis on safety practices. Building Trades II will continue fundamentals learned in Building Trades I but will also include Introduction to Residential Plumbing, Electrical, HVAC, Masonry, Exterior, and Interior Finishing. Learners who complete course modules and meet all safety standards will be eligible to receive nationally recognized industry credentials. (MIS03 #17999)

HEAVY EQUIPMENT OPERATIONS

CONSTRUCTION EXPLORATION (Planned for Fall 2025)

Course Code: (CC707)	Grade: 10-12	Credit: 1	Term: Fall	Prerequisite:
-----------------------------	---------------------	------------------	-------------------	----------------------

Location and delivery method: Career Innovation Center and option for Video Conference

Instructor: TBD

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course provides students with an introduction to the basic equipment used in the construction industry. Students learn about basic equipment operations and job responsibilities. This course prepares students to use concepts pertaining to safety, maintenance, mathematics, and communication that Operating Engineers may experience. (MIS03 #37020)

BASIC GRADE & CONSTRUCTION MATH (Planned for Spring 2026)

Course Code: (CC708)	Grade: 10-12	Credit: 1	Term: Spring	Prerequisite: Construction Expl.
----------------------	--------------	-----------	--------------	----------------------------------

Location and delivery method: Career Innovation Center and option for Video Conference

Instructor: TBD

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: In the construction industry, grading is the work of ensuring a level base, or a grade with a specific slope. Grade construction work is needed in almost any building project, from laying a building foundation, to landscaping, or even roadwork. In this course, you will be introduced to core equipment used in the staking process, as well as Personal Protective Equipment (PPE) used in the construction industry. Communication processes used in the construction industry for interpreting and setting grade are also an important part of this course. Finally, you will learn mathematical concepts related to the construction industry for grade staking. **(MIS03 #37020)**

BASIC CONSTRUCTION – EQUIPMENT FUNDAMENTAL (Planned for Fall 2026)

Course Code: (CC709)	Grade: 10-12	Credit: 1	Term: Spring	Prerequisite:
----------------------	--------------	-----------	--------------	---------------

Location and delivery method: Career Innovation Center and option for Video Conference

Instructor: TBD

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: In the construction industry, the proper use of heavy equipment is necessary to ensure quality work and a safe work environment. In addition, being able to recognize and determine the use of specific heavy equipment, will create a more efficient work team. Heavy equipment is used in almost any construction project, from building a house to excavating a new road. In this course, you will be introduced to core equipment used by operating engineers, as well as their maintenance needs. Communication processes used by operating engineers, rigging and signaling practices, safety awareness and mathematical concepts related to the construction industry are also covered. **(MIS03 #17200)**

BASIC MAINTENANCE of MOBILE EQUIPMENT (Planned for Spring 2027)

Course Code: (CC710)	Grade: 10-12	Credit: 1	Term: Spring	Prerequisite: Basic Construction
----------------------	--------------	-----------	--------------	----------------------------------

Location and delivery method: Career Innovation Center and option for Video Conference

Instructor: TBD

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course focuses directly on maintenance of mobile equipment through a series of engaging tutorials. A major focus of the course is on maintenance and safety including such topics as LOTO. Other topics include tools and fasteners, preventative maintenance principles, engines, intake and exhaust, fuel systems, coolant systems, filters and filtration, lubrication systems, hydraulics, electrical systems, tires, and tracks and undercarriages. **(MIS03 #17201)**



DIESEL TECHNOLOGY

The Diesel Technology program is designed to expose students to careers in the diesel industry and apply foundational knowledge and technical skills in the maintenance of heavy equipment and trucks.

DIESEL TECHNOLOGY I

Course Code: (CC305, CC306)	Grade: 10-12	Credit: 1	Term: Year	Prerequisite: None
-----------------------------	--------------	-----------	------------	--------------------

Location and delivery method: On-site Sheyenne HS – 7:30 am – 8:15 am - Early Bird or A/B Block Option

Instructor: Mr. Ralph Elletson

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course allows students to experience a variety of diesel and heavy equipment practices. Students will explore the field of diesel and heavy-duty equipment repair, and will learn the basics of safety, equipment identification, and the use of hand and power tools in lab settings. Students will be introduced to diesel engine operation and components, hydraulics, brakes/suspension, and electrical. Technology-related mathematics, reading, writing, vocabulary, blueprint reading, and science

are integrated throughout the curriculum. Labs will be enhanced by industry partners including RDO, General Equipment, Butler, Titan Machinery, and more. The curriculum aligns with NATEF standards. **(MIS03 #17040)**

DIESEL TECHNOLOGY II

Course Code: (CC307, CC308)	Grade: 11-12	Credit: 2	Term: Year Block	Prerequisite: Diesel I
------------------------------------	---------------------	------------------	-------------------------	-------------------------------

Location and delivery method: On-site Sheyenne HS Block

Instructor: Mr. Ralph Elletson – Sheyenne High School

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course will serve as a continuation from Diesel I. Students will be exposed to diesel careers and options in construction, agriculture, aviation, and trucking vehicles. Students will be required to demonstrate sound safety practices, shop organization and management. Students will learn advanced diesel concepts in fuel systems, steering and suspension, tire and wheel diagnostics, service and repair of electrical and electronic controls and systems, engines, drive train, hydraulics and air brake systems. Training and practice of Preventive Maintenance Inspection (PMI) is accomplished. Lessons will be enhanced by industry collaboration, job shadows and internship experiences. Technology, mathematics, reading, writing, vocabulary, blueprint reading, and science are integrated throughout the curriculum. Curriculum aligns with NATEF standards **(MIS03 #17041)**

DIESEL COOPERATIVE WORK EXPERIENCE

Course Code: School Code	Grade: 11-12	Credit: 1 per year	Term: 75 hours =1/2 cr.	Prerequisite: 1 diesel cr.
---------------------------------	---------------------	---------------------------	--------------------------------	-----------------------------------

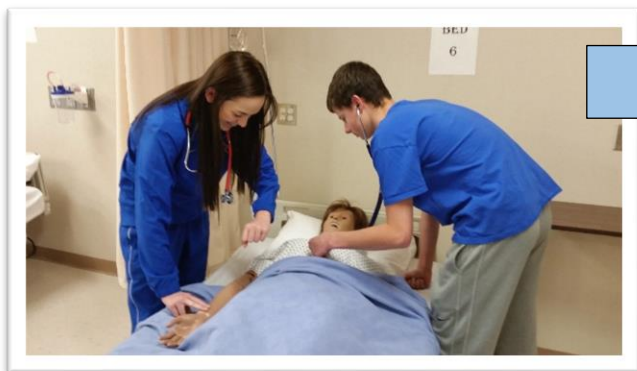
Prerequisite: The employment must be preceded by, or concurrent with, classroom instruction related to the work experience. Students must be at least 16 years old and may be paid a wage by the employer.

Location and delivery: a training agreement between all partners outlining the expectations of each party (school, employer, student, and parents/guardians) is required for work experience.

Instructor: Registration only by arrangement with instructors or career advisor approval.

Transportation: Student is responsible for transportation to and from job sites.

Description: Students in this program earn school credit for on-the-job training while working in a CTE pathway - related job for a local business. Students apply the knowledge and skills learned in their CTE pathway classes as they perform their duties at work. Students are supervised by the employer as well as the classroom teacher and must complete 75 hours by the end of the semester. Student may register, but must apply and be approved by the CTE instructor before officially enrolled. **(MIS03 #17999)**



HEALTH SCIENCES & ALLIED HEALTH

Health Sciences within the North Dakota Department of Career and Technical Education are committed to providing career awareness, work readiness skills and occupational preparation to continue to fill the need for dedicated professionals that provide support, service and leadership in the many areas of healthcare.

CERTIFIED NURSING ASSISTANT (CNA)

Course Code: (CC510)	Grade: 11-12	Credit: ½ -1	Term: Spring	Prerequisite: None
-----------------------------	---------------------	---------------------	---------------------	---------------------------

Location and delivery method: On-site

Instructor: TBD based on instructor schedules

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: This class is developed for students interested in a nursing career or preparing themselves for employment as a Certified Nursing Assistant. The class involves both lecture and lab instruction. Basic nursing principles are taught in a lecture setting, while communication techniques, introduction to basic physical assessment, and basic nursing procedures are demonstrated in the clinical simulation lab setting. Emphasis is placed on the care of a client in a long-term care setting. The class will be delivered in a hybrid format. Student will be responsible for completing 75 hours of classroom and online activities as assigned by the instructor to meet the federal requirements for nurse assistant training. Student is also responsible for making up any absences, including excused absences, to maintain eligibility for testing. Upon successful completion of this course the student will be eligible for CNA examination. Cost of testing varies student is responsible for testing cost. Health Science 1 is not required but will provide supportive background knowledge for this course. Dual Credit Option – NURS100 **(MIS03 #07032)**

EMERGENCY MEDICAL SERVICES (EMS)

Course Code: (CC520, CC521)	Grade: 10-12	Credit: .5 -1	Term: Year	Prerequisite: None
-----------------------------	--------------	---------------	------------	--------------------

Location and delivery method: Career Innovation Center, On-Site

Instructor: TBD based on NDSCS instructor schedules

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: The Emergency Medical Services course places a special emphasis on the foundational knowledge and skills needed in medical emergencies. Typically, topics of skill development include clearing airway obstructions, controlling bleeding, bandaging, methods for lifting and transporting injured persons, simple spinal immobilization, infection control, stabilizing fractures, and responding to cardiac arrest. Along with these skills, other topics cover the legal and ethical responsibilities involved in dealing with medical emergencies. Courses are designed to better prepare learners to obtain certification such as: Emergency Medical Response (EMR), CPR, First Aid, Incident Command System (ICS), and Wilderness First Responder. Optional dual credit through NDSCS. (MIS03 #07045)

EMERGENCY MEDICAL TECHNICIAN (EMT)

Course Code: (CC522)	Grade: 11-12	Credit: 2	Term: Year	Prerequisite: None
----------------------	--------------	-----------	------------	--------------------

Location and delivery method: Career Innovation Center, On-Site

Instructor: TBD based on NDSCS instructor schedules

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: The Advanced Emergency Medical Technician (AEMT) program prepares students to provide basic and limited advanced emergency medical care and transportation for patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary for patient care and transportation. Advanced Emergency Medical Technicians are part of the comprehensive EMS response under medical oversight. AEMT performs interventions with the basic and advanced equipment typically found in an ambulance. The AEMT is a link from the scene to the emergency health care system. Advanced skills taught in the course include IV placement and maintenance and introduction to cardiac monitoring (MIS03 #07046)

HEALTH SCIENCE I

Course Code: (CC506/507)	Grade: 10-12	Credit: 1	Term: Year	Prerequisite: None
--------------------------	--------------	-----------	------------	--------------------

Location and delivery method: On-site or Video Conference

Instructor: TBD based on instructor schedules

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: This course explores the many career opportunities available in the medical, nursing and allied health professions. Students learn basic health-provider skills, including CPR and First Aid. Curriculum content includes ethics, legalities, safety, medical terminology, communication, infection control, professional attitudes, anatomy, physiology and basic clinical skills. Health professionals are utilized as speakers to enrich content. Students participate in spring observations of health professionals. (Examples: Dentistry, Dental Hygienist, Nursing, Pharmacy, Radiology, Sports Medicine, Veterinary Technician.) (MIS03 #07033)

HEALTH SCIENCE II

Course Code: (CC508)	Grade: 11-12	Credit: .5-1	Term: Semester	Prerequisite: None
----------------------	--------------	--------------	----------------	--------------------

Location and delivery method: On-site

Instructor: TBD based on instructor schedules

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: This course enables learners to gain additional and concentrated insights into the health career professions. Learners observe and interact with professionals to broaden their knowledge of the health care community. Learners can select community observations from more than fifty professional sites AS AVAILABILITY ALLOWS. This course also aids in preparing the learner for entry into competitive two- and four-year college programs for professional health careers. Curriculum content includes career-planning skills, aging, bereavement, disease processes, wellness, mental health, and teen issues, along with associated careers. (MIS03 #07035)

MEDICAL TERMINOLOGY

Course Code: (CC501 or 502)	Grade: 10-12	Credit: ½	Term: Fall/Spring	Prerequisite: None
-----------------------------	--------------	-----------	-------------------	--------------------

Location and delivery method: Online

Instructor: online or scheduled Face-to-Face with local district health sciences programs

Transportation: Not applicable

Description: This class is designed to introduce students to the health information (Medical Records) field. Students will learn prefixes, suffixes and root words for medical terms. This will include meanings, spellings and pronunciations. Emphasis is on

building a working medical vocabulary based on body systems. Anatomy and physiology of major organs, pathological conditions, laboratory studies, clinical procedures and abbreviations are studied for each body system. The student will also learn medical terminology as it relates to pathology, diagnostic, surgical, clinical and laboratory procedures and common abbreviations and acronyms by body systems. Optional dual credit through NDSCS. **(MIS03 #07036)**

PREVENTION AND CARE OF ATHLETIC INJURIES

Course Code: (CC505)	Grade: 10-12	Credit: ½	Term: Fall/Spring	Prerequisite: None
-----------------------------	---------------------	------------------	--------------------------	---------------------------

Location and delivery method: Video conference or Online

Instructor: TBD based on instructor schedules

Transportation: Schools will provide bussing for field trips.

Description: Provides the student with a background in athletic training and basic health care. The course emphasizes injury prevention, nutrition, first responder management daily for athletic injuries and skills to fulfill the activities of daily living. Students will be able to complete requirements to become a student athletic trainer. Optional dual credit through NDSCS. **(MIS03 07034)**

PHARMACY TECHNICIAN

Course Code: (CC530)	Grade: 11-12	Credit: 1-2	Term: Year	Prerequisite: HSI, HSII
-----------------------------	---------------------	--------------------	-------------------	--------------------------------

Location and delivery method: Central Cass High School – a combination of face-to-face and online

Instructor: Ellie Guy, CIC instructors, and Essentia Health Partners

Transportation: Schools will provide bussing for field trips.

Description:

This course will provide education and module-based training with the end goal of students completing the PATSIM, which is an entry-level accredited Pharmacy Technician program. The course will involve off-site industry training hours concurrent with classroom instruction pertaining to the work experience. The training plan will be provided by the instructor and will prepare the student for the Pharmacy Technician board exam to acquire state certification. Optional dual credit through NDSCS. **(MIS03 #07075 or #07999)**

PHARMACY TECHNICIAN – Orientation to Pharmacy Practice (PRMT 101) and Pharmacy Law and Ethics (PRMT 111)

Course Code: (CC535)	Grade: 11-12	Credit: 1	Term: Semester	Prerequisite: HSI
-----------------------------	---------------------	------------------	-----------------------	--------------------------

Location and delivery method: Career Innovation Center – face-to-face

Instructor: TBD and Essentia Health Partners

Transportation: Students are responsible for transportation to the CIC. Schools will provide bussing for field trips.

Description: PRMT101 and PRMT 111 will be taught in one semester over 8-9 weeks each.

PRMT 101 - 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 over 8-9 weeks. 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.

PRMT111 - This course will focus on Pharmacy Law, state and federal as well as the important ethical concepts in healthcare. Topics will include FDA from 1938 to the present, CSA and the DEA, and ethical theories and applications including autonomy and confidentiality. Optional dual credit through NDSCS. **(MIS03 #07075)**

HEALTH SCIENCE COOP. WORK EXPERIENCE

Course Code: School Code	Grade: 11-12	Credit: 1 per year	Term: 75 hours =1/2 cr.	Prerequisite: 1 HS credit
---------------------------------	---------------------	---------------------------	--------------------------------	----------------------------------

Location and delivery method: Approved job sites.

Instructor: Health Science teacher or educator with WBL credential

Transportation: Student is responsible for transportation to and from job sites.

Description:

Students in this program earn school credit for on-the-job training while working in a CTE pathway - related job for a local business. Students apply the knowledge and skills learned in their CTE pathway classes as they perform their duties at work. Students are supervised by the employer as well as the classroom teacher and must complete 75 hours by the end of the semester. Student may register but must apply and be approved by the CTE instructor before officially enrolled. **(MIS03 #07999)**



INFORMATION TECHNOLOGY, COMPUTER SCIENCE & CYBERSECURITY

Information Technology Education prepares students for future employment and/or continuing education opportunities in the growing field of Information Technology, which include work in computer hardware, software, electronics, semiconductors, internet, telecom equipment, e-commerce, and computer services.

INTRO TO PROGRAMMING

Course Code: (CC601)	Grade: 9-12	Credit: ½	Term: Fall or Spring	Prerequisite: None
-----------------------------	--------------------	------------------	-----------------------------	---------------------------

Location and delivery method: May be scheduled on site or through video conferencing based on instructor availability

Instructor: Mr. Ullrich Reichenbach – Fargo, Mr. Stephan Garaas or Mr. Ben Walker, West Fargo

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: The course will provide students with a foundation for understanding programming languages. Fundamentals of logic, design, coding, structures, and controls will be applied through a game-like environment, such as Scratch, GameSalad or emerging programs. Careers in coding and programming are explored. Students will experience project-based learning, teamwork, problem-solving, and increase communication. **(MIS03 #27120)**

PROGRAMMING WITH PYTHON

Course Code: (CC602 or VE395)	Grade: 10-12	Credit: ½	Term: Fall or Spring	Prerequisite:
--------------------------------------	---------------------	------------------	-----------------------------	----------------------

Location and delivery method: Video Conference and On-site

Instructor: Mr. Ullrich Reichenbach - Fargo or Mr. Stephan Garaas or Ben Walker – West Fargo

Transportation: Students may be responsible for transportation. Schools will provide bussing for field trips.

Description: The world’s tech companies love Python. Google, Youtube, Facebook, IBM, NASA, Dropbox, Yahoo, Mozilla, Quora, Instagram, Uber and Reddit are just a few of the big names that use Python for a wide range of purposes and are continuously on the lookout for Python engineers. Python is a programming language, which is used to develop websites, web applications, GUI, network servers, back-end APIs, desktop apps, medial tools, and machine learning. You can also use Python to analyze data and “glue” other languages together. **(MIS03 #27123)**

FUNDAMENTALS OF JAVA PROGRAMMING

Course Code: (CC603 or VE289)	Grade: 10-12	Credit: ½	Term: Fall or Spring	Prerequisite: ICG
--------------------------------------	---------------------	------------------	-----------------------------	--------------------------

Location and delivery method: Video Conference and On-site

Instructor: Mr. Ullrich Reichenbach - Fargo or Mr. Stephan Garaas or Mr. Ben Walker – West Fargo

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course introduces the field of Computer Science, including design and coding principles. By studying case studies and designing graphical user interfaces, students will learn the principles of object-oriented programming, define classes, instantiate objects, and write methods. Students will also work with algorithms which make logical decisions and iterate. Optional dual credit through NDSCS. **(MIS03 #27125)**

MOBILE APP DEVELOPMENT & SECURITY

Course Code: (CC605)	Grade: 10-12	Credit: ½	Term: Fall or Spring	Prerequisite: None
-----------------------------	---------------------	------------------	-----------------------------	---------------------------

Location and delivery method: Video Conference and On-site

Instructor: Mr. Stephen Garaas – West Fargo

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Students use mobile technology to solve everyday problems for their community so why not task them to develop one? In this course students will learn the basics of the app system and software development cycle. They will also learn about code modification and additional basic app coding skills, including the topics of variables, simple data types, conditional programming constructs, and simple library classes. The course also provides a foundation for the design, implementation, and management of database systems. **(MIS03 #27128)**

AP COMPUTER SCIENCE A – (AP Java)

Course Code: (CC604 or VE290)	Grade: 10-12	Credit: ½	Term: Spring	Prerequisite: Java
--------------------------------------	---------------------	------------------	---------------------	---------------------------

Location and delivery method: Video Conference and On-site

Instructor: Mr. Ullrich Reichenbach – Fargo, Mr. Stephen Garaas – West Fargo

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Students will study abstract classes, arrays, lists, and advanced concepts of graphical user interfaces. Main topics also include sequences, searches, input and output streams. This course, together with the first semester, will prepare students to take the AP exam in Computer Science if they wish. **(MIS03 #27520)**

IT ESSENTIALS I

Course Code: (CC606 or VE285)	Grade: 10-12	Credit: ½	Term: Fall	Prerequisite: None
--------------------------------------	---------------------	------------------	-------------------	---------------------------

Location and delivery method: Video Conference and Online

Instructor: Mr. Ullrich Reichenbach – Fargo – Mr. Stephen Garaas – West Fargo

Transportation: Schools will provide district bussing in Fargo and West Fargo. Students' responsibility in CC and NC.

Description: This is the first of two courses that prepare students to obtain their CompTIA A+ Essentials certification. This course focuses on computer hardware, operating systems, troubleshooting computer systems and customer service skills/professionalism required of entry-level IT professionals. Students will learn to identify internal components of the computer, disassemble, and assemble a complete personal computer, install multiple operating systems, and create/configure multiple virtual computers using virtualization software. Students will also learn how to configure computers to access multiple types of networks. Optional dual credit through NDSCS. **(MIS03 #27219)**

IT ESSENTIALS II

Course Code: (CC607 or VE286)	Grade: 10-12	Credit: ½	Term: Spring	Prerequisite: IT Essentials I
--------------------------------------	---------------------	------------------	---------------------	--------------------------------------

Location and delivery method: Video Conference and On-site

Instructor: Mr. Ullrich Reichenbach – Fargo - Mr. Stephen Garaas – West Fargo

Transportation: Schools will provide district bussing in Fargo and West Fargo. Students' responsibility in CC and NC.

Description: This is the second of two courses that prepare students to obtain their CompTIA A+ Essentials certification. This course focuses on handheld mobile devices (Android and Apple IOS), laptop computers, printers, and customer service skills/professionalism required of entry-level IT professionals. Students will disassemble and reassemble a laptop computer, practice communication skills, troubleshoot hardware and software issues, and perform preventative maintenance activities. Students will have an opportunity to research areas of computing that they are interested in and work with circuit boards to understand how electricity and data flow through a computer. Optional dual credit through NDSCS. **(MIS03 #27220)**

INTRO TO NETWORKS & CYBERSECURITY (Home & Small Business)

Course Code: (CC609 or VE395)	Grade: 10-12	Credit: ½	Term: Fall	Prerequisite:
--------------------------------------	---------------------	------------------	-------------------	----------------------

Location and delivery method: Video Conference and Online

Instructor: Mr. Ullrich Reichenbach - Fargo

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Just like you, homes and business are becoming smart! Wifi, smart devices, TVs, WHDI, AppleTV, security systems, and wireless technologies are growing, along with the need to understand set ups, software applications, troubleshooting and security prevention. This course will introduce students to principles and practices of designing, home and small business networks, along with an introduction to cybersecurity concepts. Students will demonstrate evidence of learning through networking and lab activities. **(MIS03 #27265)**

CISCO I – INTRODUCTION TO NETWORKS

Course Code: (CC608 or VE391)	Grade: 10-12	Credit: ½	Term: Fall	Prerequisite: None
--------------------------------------	---------------------	------------------	-------------------	---------------------------

Location and delivery method: Video Conference and Online

Instructor: Mr. Ullrich Reichenbach – Fargo or NDSCS

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This is the first level of a series on computer networking. Participants will learn about current and emerging networking technology. The course will cover safety, networking terminology and protocols, network standards, LAN's, WAN's, the OSI model, cabling, router configuration, topologies, IP addressing, and other general networking information. Students will learn the principles of both wired and wireless networks. Students will complete labs both using virtual software and physical hardware. Optional Certified Cisco Networking Associate (CCNA) exam. Optional NDSCS Dual Credit – 4 credits. **(MIS03 #27265)**

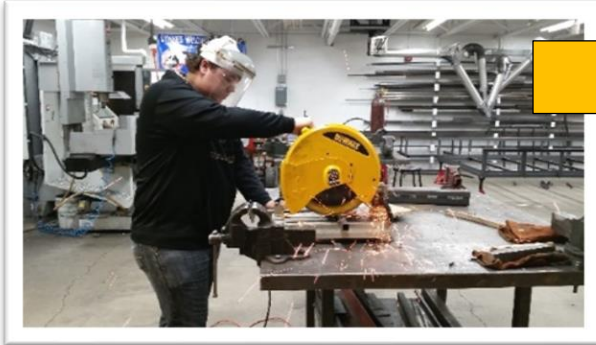
HELP DESK – COOPERATIVE WORK EXPERIENCE

Course Code: School Code	Grade: 10-12	Credit: ½ -1	Term: Fall or Spring
---------------------------------	---------------------	---------------------	-----------------------------

Prerequisite: Completion of IT Essentials I and IT Essentials II

Location and delivery: a training agreement between all partners outlining the expectations of each party (school, employer, student, and parents/guardians) is required for the work experience.

Instructor: Registration only by arrangement with counselor/principal, instructor, and IT Help Desk supervisor. (MIS03 #27999)



WELDING & MANUFACTURING

The Welding & Manufacturing Technology program is designed to provide experiences pertaining to assembly, manufacturing, energy and construction while modeling industry standards in the lab and classroom for future training, job preparation and careers.

MANUFACTURING I

Course Code: Fargo (VE241/242)	Grade: 9-12	Credit: 1	Term: Year	Prerequisite: None
---------------------------------------	--------------------	------------------	-------------------	---------------------------

Location and delivery method: On-site South High School

Instructor: Mr. Andrew Henjum – South High School

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course offers students an introduction to the design and operation of a metals production system (machining, welding, and fabrication). Students will learn how to properly read and create layout drawings. Different aspects of quality control, production planning and procedures, and different types of product manufacturing will be emphasized. This is a hands-on, project-based class where students can design and develop various projects. Students use modern equipment such as a CNC plasma table, CNC machine tools and a variety of electric welding equipment. Students develop hard and soft employability skills and explore several occupations in the manufacturing sector. **Dual Credit: Optional – MGFT 110. (MIS03 #17113)**

MANUFACTURING II

Course Code: Fargo (VE341/342)	Grade: 10-12	Credit: 1	Term: Year	Prerequisite: Manufacturing I
---------------------------------------	---------------------	------------------	-------------------	--------------------------------------

Location and delivery method: On-site South High School

Instructor: Mr. Andrew Henjum – South High School

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course provides students with a broad base of employability skills necessary for successful careers in manufacturing, construction, and service-based fields. Emphasis is placed on welding and machine tooling processes. Safe working procedures, work ethics, and cooperative work attitudes and techniques are taught. Curriculum includes skill development in Arc (stick and wire) and gas welding. Flame cutting, plasma arc cutting, brazing and soldering techniques are also covered. Curriculum activities designed to develop the student's machining skills on the metal lathe, vertical mill, drill press, grinders, and band saw are presented. Students are taught to use precision measuring equipment and to interpret technical drawings. Pattern transfer and layout procedures are introduced. Material identification, industrial math, blueprint reading, career awareness and much more will be learned as the students explore their way through this class. This is an enjoyable, hands-on, activity-based learning experience. (MIS03 #17113)

MANUFACTURING III

Course Code: Fargo (VE343/344)	Grade: 12	Credit: 1	Term: Year	Prerequisite: Manufacturing I OR II
---------------------------------------	------------------	------------------	-------------------	--

Location and delivery method: On-site South High School

Instructor: Mr. Andrew Henjum – South High School

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: Upon the successful completion of VE 241/242 or 341/342 serious fun begins! Motivated students apply everything learned in Automated Manufacturing I or II to fabrication challenges, GTAW (TIG) welding, and Automated Manufacturing

techniques. Students will explore CAD/CAM processes on a Haas CNC lathe, a Haas 3-axis CNC vertical mill. Students will be allowed to specialize their training. Those who desire to concentrate on welding will be allowed to further develop those skills. Those students who gravitate towards machine tooling may explore that field to a greater degree. Students will be involved in custom and community fabrication work. Past projects have included such things as building a motorcycle, a pedal car, a sauna furnace, corral panels, racking, signs and trailers. Manufacturing III is where it all comes together.

(MIS03 #17236 & #17237) (Dual Credit Option: MGFT 123)

WELDING I & II

Course Code: Fargo Code (VE339/340)	Grade: 10-12	Credit: 2	Term: Fall-Spring Block	Prerequisite: Welding I
--	---------------------	------------------	--------------------------------	--------------------------------

Location and delivery method: On-site NDSCS – Fargo

Instructor: Mr. Mitch VanVleet – NDSCS

Transportation: Students will be responsible for transportation. Schools will provide bussing for field trips.

Description: This course gives beginning instruction in laboratory safety and the use of personal protection equipment, with strong emphasis on the safe handling of welding and cutting equipment. It includes basic hands-on instruction on Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), and Oxy-Fuel Cutting (OFC) on various thicknesses of metal and techniques used. Also covered are welding supplies and equipment. Students choosing to participate must complete the NDSCS application process. **(MIS03 #17236) (Dual Credit Option: MGFT110 and/or MGFT 123)**

MANUFACTURING COOPERATIVE WORK EXPERIENCE

Course Code: School Code	Grade: 11-12	Credit: 1 per year	Term: 75 hours =1/2 cr.	Prerequisite: 1 credit
---------------------------------	---------------------	---------------------------	--------------------------------	-------------------------------

Prerequisite: The employment must be preceded by, or concurrent with, classroom instruction related to the work experience. Students must be at least 16 years old and may be paid a wage by the employer.

Location and delivery: a training agreement between all partners outlining the expectations of each party (school, employer, student, and parents/guardians) is required for work experience.

Instructor: Registration only by arrangement with instructors or career advisor approval.

Transportation: Student will be responsible for transportation.

Description: Students in this program earn school credit for on-the-job training while working in a CTE pathway - related job for a local business. Students apply the knowledge and skills learned in their CTE pathway classes as they perform their duties at work. Students are supervised by the employer as well as the classroom teacher and must complete 75 hours by the end of the semester. Student may register, but must apply and be approved by the CTE instructor before officially enrolled.

(MIS03 #17999)

Dual Credit Opportunities

The following list of dual credit opportunities have been developed in partnership with North Dakota State College of Science, Bismarck State College, and Valley City State University. Students may check with their local career counselor or career advisor to see if options are available at their high school based on instructor qualifications.

HS Course Name	HS Dept	College Course	College	Course Id	Credits
Anatomy/Physiology	SC	Anatomy & Physiology II + Lab	NDSCS	BIOL 221L	4
AP Biology	SC	General Biology II + Lab	NDSCS	BIOL 151L	4
AP Chemistry	SC	General Chemistry II + Lab	NDSCS	CHEM 122L	4
AP Computer Science - A	IT	AP Computer Science - JAVA	NDSCS	CSCI 161	4
AP European History (S2 only)	SS	Western Civilization	NDSCS	HIST 102	3
AP Government and Politics: US	SS	American Government	NDSCS	POLS 115	3
AP Physics 1: Algebra-Based	SC	College Physics I + Lab	NDSCS	PHYS 211L	4
AP Psychology	SS	Introduction to Psychology	NDSCS	PSYC 111	3
AP Statistics	MA	Elementary Statistics	NDSCS	MATH 210	3
AP U. S. History	SS	U.S. History since 1877	NDSCS	HIST 104	3
Certified Nursing Assistant	HSC	Certified Nursing Asst (CNA)	NDSCS	NURS 100/1L	2
Cisco 1: Introduction to Networks	IT	Networking Fundamentals I	NDSCS	CIS 164	4
College Algebra & Trigonometry (S1)	MA	College Algebra (S1)	NDSCS	MATH 105	2
College Algebra & Trigonometry (S2)	MA	Trigonometry (S2)	NDSCS	MATH 105	2
Communications	ELA	Fundamentals of Public Speaking	NDSCS	COMM 110	3
Construction Technology 1	CT	Carpentry Fundamentals	NDSCS	BCT133	2
Construction Technology 2	CT	Rough Carpentry/Exterior Finishing	NDSCS	BCT131/132	2
Emergency Medical Services	HS	Emergency Medical Services	NDSCS	EMS 100 (EMS101)	2
Emergency Medical Technician	HS	Emergency Medical Technician	NDSCS	EMS110	2
Exploring Business Software	BE	Business Use of Computers	NDSCS	CSCI 116	3
Forensics	SC	Forensics Science & Lab	BSC	CHEM 112/2L	4
Fundamentals of Java Programming	IT	Computer Programming - JAVA	NDSCS	CSCI 160	4
Web and Graphic Design 2	TE	Web Authorizing Software	NDSCS	CIS 181	3
Intro to Education	FACS	Intro to Education	VCSU	EDUC 251	2
Intro to Engineering Design	TE	Design & Modeling	NDSCS	RAMT 120	3
IT Essentials 1	IT	IT Essentials I	NDSCS	CIS 128	3
IT Essentials 2	IT	IT Essentials II	NDSCS	CIS 129	3
Management/Entrepreneurship	BU	Entrepreneurship	NDSCS	BUSN 170	3
Manufacturing 1	MAN	Industrial Shop Practices	NDSCS	MFGT 110	2
Manufacturing 2	MAN	Fabrication Methods	NDSCS	MFGT123	2
Medical Terminology	HSC	Medical Terminology	NDSCS	BOTE 171	4
Peer to Peer II	SPED/FACS	Educating the Exceptional Student	VCSU	EDUC 240	3
Pre-Calculus	MA	Pre-Calculus	NDSCS	MATH 107	4
Pre-Calculus	MA	Pre-Calculus	BSC	MATH 107	4
Civil Engineering & Architecture	TE	CEA	NDSCS	ARCT 121	2
Social Media Marketing	ME	Marketing	NDSCS	BADM 201	3
Spanish IV	SP	Spanish I	BSC	SPAN 101/2	4
Teaching Field Experience	FACS	Field Experience	VCSU	EDUC 252	2
Unmanned Ariel Vehicles	AV	Unmanned Aircraft Systems	NDSCS	UAS 111/112	2
Graphic Design & Comm.	TE	Graphic Design	NDSCS	CIS 232	3
Welding 1 & 2	MAN	Fabrication Methods	NDSCS	MFGT 123	2
Robotics	TE	Robotics Systems I	NDSCS	RAMT 224	3