

[www.cractc.org](http://www.cractc.org)



*PREPARING TODAY'S STUDENTS  
FOR TOMORROW'S EXPERIENCES*



**2021-2022**

**COURSE CATALOG  
AND PROGRAM  
INFORMATION**

# **Table of Contents**

**CRACTC/CREA ADMINISTRATION & TEACHERS.....3**

**CRACTC General Information.....4-9**

**AGRICULTURE.....10**

**AVIATION.....12**

**FAMILY AND CONSUMER SCIENCE.....13**

**GRAPHIC ARTS.....16**

**HEALTH SCIENCE (MEDICAL).....17**

**INFORMATION TECHNOLOGY.....20**

**MARKETING.....25**

**STEM TECHNOLOGY AND ENGINEERING.....28**

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Kayla Koth

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### **STEM - Tech. & Engineering:**

Tim Meyer  
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Additions or changes may be made based on enrollments received.  
Visit our website, [www.cractc.org](http://www.cractc.org), for updates.

# General Information

## CRACTC MISSION

CRACTC will provide Career and Technical Educational (CTE) opportunities to our member schools' students, in the most economical fashion, where every student has the same educational opportunity regardless of the size or location of the school.

## CRACTC

The CRACTC is a "Virtual" Career and Technical Center established in 2008 as a partnership between the CREA –Central Regional Education Association and Bismarck Public Schools. The CREA is 1 of 7 Rural Educational Associations (REA's) in North Dakota. Initial funding for this program came from a grant from the North Dakota Legislature through the State Department of Career and Technical Education and from the memberships of 42 school districts with high schools that are members of the CREA; school districts who are not part of the CREA/CRACTC membership may also enroll in CRACTC courses (dependent upon availability) at a non-member rate.

## CRACTC STUDENTS

The CRACTC delivers CTE courses to students utilizing Interactive Television (ITV) and Online Virtual classroom environments. Our goal is to provide opportunities for students to enroll in courses to complete a program of study. **CTE concentrators (students that complete 2 or more credits in a program of study) can qualify for the \$6000 ND State CTE Scholarship Program.** See your high school counselor for details. This may include taking the "Work Keys" test to qualify.

The ITV courses are provided in cooperation with our partner Area Career & Technology Centers and the Great Western ITV Network (GWN). Registration for ITV courses is coordinated through the GWN and follows the GWN class schedule. Most CTE based ITV courses also integrate online components. Courses taught online require students to be self-motivated and responsible to access courses on a daily basis. Participation in these courses is subject to the approval of the local school administration.

## CRACTC CTE COURSES

CRACTC CTE courses will include hands-on and career exploration events that student participation is required. This may include required CPR and First Aid Certification days, industry tours, training and career exploration events such as training and deployment of “Real Care” babies, hands-on welding experience, etc... that are integral to the skill and knowledge development in these classes. It may also include optional activities such as participation in Career & Technical Student Organizations (CTSO's such as DECA, FFA, Skills USA, HOSA or TSA) or industry field trips. Most courses will have one event per semester, but courses such as welding may require more. Travel is the responsibility of the local school, with travel reimbursement available from the CRACTC if needed.

Other ITV and online courses are available through our partner area virtual centers which include:

- Roughrider Area Career and Technical Center - Dickinson  
<http://www.ractc.k12.nd.us>
- Great Northwest Area Career and Technical Center - Williston  
<http://www.gnwec.k12.nd.us>
- Grand Forks Area Career and Technical Center - Grand Forks  
<http://www.gfareactc.org>
- Great Western Network ITV Consortium - Washburn  
<http://www.greatwesternnetwork.com>

Fees for these courses are not covered by CRACTC membership unless included in this registration guide.

## REGISTRATION PROCEDURE

Registration forms and a copy of this guide are located on the CREA web page.

**[www.cractc.org](http://www.cractc.org)**

The registration form asks for basic student information that we need to enter into the CRACTC registration summary. Indicate the selected course name, course term and type along with the name, gender, and email address for each student. We ask that school districts notify CRACTC if any registered student needs accommodations as designated in an IEP and/or 504 plan. Additional information for our Powerschool site will also be requested prior to the start of school. Information needed includes: home address and primary phone number, ethnicity, grade level, date of birth and the names of the student's parents. This information can be downloaded from the local schools' Powerschool site and sent as a spreadsheet to [alissa.thiele@k12.nd.us](mailto:alissa.thiele@k12.nd.us).

**ITV Registration:** Complete the CRACTC registration form for these students and indicate “I” (for ITV) in the “course type” column and either F (fall), S (spring), or Y (full year) for “course term,” as well as “gender” and “grade” columns for those courses offered via ITV. See the course schedule on the Great Western website at [www.greatwesternnetwork.com](http://www.greatwesternnetwork.com). Also, please email the numbers of students for your school for each class to Bill Strasser at the Great Western ITV Network. We recommend you do this early because classes do fill up and there is a limit to the number of schools that an individual class can serve. [Bill.Strasser@k12.nd.us](mailto:Bill.Strasser@k12.nd.us).

**Online Registration:** Complete the CRACTC registration form for these students and indicate “O” for Online delivery in the “course type” column. Be sure to note which semester the course is offered and indicate F, S or Y in the “course term” as well as “gender” and “grade” columns.

CTE INTERNSHIPS – available by arrangement for each CTE program area.

Grades: 11, 12      ½ Credit/Semester      Online + Placement

Prerequisite: CTE Concentrators that have completed at least 2 credits in a CTE program of study may be considered for Internships.

Students may continue their education with on-the-job experiences through participation in a workplace internship. Students 18 years or older may be required to have a background check per facility employer policies. Transportation to training sites is the responsibility of the student. Application and interview with the CTE instructor and internship coordinator is required prior to registration.

## **Deadline for Registration – April 23rd, 2021**

**Lock-in date - May 7, 2021** After this time, substitutions and additions can be made but cancellations/drops will be charged the course enrollment student fee.

Student enrollment fees for CRACTC member schools:

- \$250 per semester course      - \$500 for full year courses.

Student enrollment fees for Non-member schools:

-\$400 per semester course      - \$800 for full year courses.

**Dual Credit:** Several CRACTC courses provide students the opportunity to earn Dual Credit, giving them a head-start on a postsecondary education. Dual Credit for eligible courses is optional. College admission application and fees are the responsibility of the student, home school and the student's parents or legal guardians. CRACTC 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 North Dakota.

**Facilitators:** The CRACTC recognizes the importance of having a local facilitator for online courses. Instructors rely on the local facilitator to handle many of the daily needs that an instructor cannot address at a distance in the virtual environment. CRACTC provides reimbursement of 60% of up to a \$2000 stipend for one facilitator in each of our member schools (which could be a total reimbursement of \$1200). Schools may apply for reimbursement at the end of each semester.

**Grade Scale:** The CRACTC grade scale is; A = 92-100, B = 83-91, C = 74-82, D = 65-73, F = 64 and below. Dual Credit courses follow the providing college's grade scale. CRACTC grades are posted on the CRACTC powerschool. Grades are official at 9 am on the Monday following the end of each semester and then can be transferred to the home schools' powerschool. Dual credit courses will follow the grade scale of the applicable college/university.

**Powerschool:** Logins and passwords are provided to each student and school facilitator or local powerschool administrator. PowerSchool questions/issues should be directed to CRACTC Powerschool administrator.

**The CRACTC calendar can be found at [www.CRACTC.org](http://www.CRACTC.org)**

**Withdrawal Policy:** During the first 10 days of a semester, any class that is dropped will not show up on a transcript. If a student withdraws from a class prior to the end of 12 weeks into a semester, the grade will be recorded as a W (withdrawal, no grade, no credit). If the student withdraws after the twelve weeks, the grade will be recorded as a WP (withdrawal pass, no credit) or WF (withdrawal fail), no credit, counted as an F and will count on the students GPA. Most courses offered for a full year – 1 credit - cannot be given ½ credit if the student drops the class at the end of the first semester.

## **GRIEVANCE NONDISCRIMINATION AND ANTI-HARASSMENT**

CRACTC follows Bismarck Public Schools policies and procedures associated with non-discrimination and anti-harassment situations. Please refer to the Bismarck Public School website for the most up-to-date non-discrimination and anti-harassment policy.

***<https://sites.google.com/a/bismarckschools.org/schoolboard/system/app/pages/search?scope=search-site&q=non-discrimination>***

Any CRACTC student, staff, or personnel who feels they are, or have been, discriminated or harassed during or within CRACTC course parameters (Online/ITV/face-to-face), contact your local school administrator to report the incident(s), with the local school administrator reporting to the CRACTC assistant director. The CRACTC assistant director will contact the BPS Title IX coordinator to begin the proper procedures and investigations in cooperation with the applicable local school administration. If the incident involves the local administrator, the applicable individual(s) shall directly contact the CRACTC assistant director. If the incident involves the CRACTC assistant director, contact the CRACTC director to begin the proper procedures.

Grievance and Harassment Filing Procedure:

***<https://drive.google.com/file/d/0B4ZW3eBSjly6NWFEZ2dLdFkzRWs/view>***

***Please go to [www.CRACTC.org](http://www.CRACTC.org) for access to direct links listed above.***



## **IEP/504 STUDENTS**

The CRACTC strives to meet the needs of all students. Per the Federal Individuals with Disabilities Education Act (IDEA), CRACTC requests schools provide information regarding the needs/accommodations of registered students in order to provide them a positive and complete learning experience. Schools should indicate on their registration forms if any students has an Individualized Education Plan (IEP) or 504 Plan in which accommodations shall occur. CRACTC will contact the applicable school to request necessary paperwork for any registered student who is indicated to have such needs/accommodations.

## **PLANS OF STUDY FOR STATE SCHOLARSHIPS**

ND resident students may apply for either the Career & Technical Education (CTE) or Academic Scholarships. Students utilizing CTE courses to meet the necessary requirements need to have two units of CTE credits from a coordinated plan of study recommended by the ND Department of Career & Technical Education and approved by the ND Superintendent of Public Instruction.

CRACTC has created the plan of study document, which is linked below, with regard to the courses we provide to help guide you through this process. If you have any questions regarding the document or course offerings, please contact Assistant Director Lyle Krueger at your convenience.

**<https://www.cractc.org>**



# AGRICULTURE

## **MECHANICS POWER SYSTEMS (01045)**

**Grade: 10-12**

**0.5 Credit**

**Fall or Spring Semester**

**Online + Labs**

This Mechanics course offers a study of the operation, maintenance, and repair of small gasoline engines. Instructional topics include but are not limited to the principles of operation of gasoline/diesel engines, tune-up and maintenance procedures, and disassembly, overhaul, and reassembly of gasoline small engines. Instruction may also include the operation of two and four-cycle engines commonly found on lawn mowers, snow blowers, rotary tillers, chainsaws, and other equipment. As time allows, other power systems could be covered. 20-25 hours of hands-on small engine lab experience is required for this course (required to attend to successfully complete the course). Students will meet at a selected facility for hands on supervised overhaul/repair and maintenance as a part of this class. Travel to the facility will be the responsibility of the local school.


## **WELDING AND FABRICATION I (01046)**

**Grade: 10-12**

**0.5 Credit**

**Fall Semester**

**Online + Labs**



The Welding and Fabrication I curriculum is designed to develop student's understanding of applied mechanical applications associated with the field of welding. Content includes, but is not limited to, instruction that prepares individuals to select, operate, and maintain a variety of welding equipment and related tools. Subject matter may include: Oxy-fuel cutting, heating and welding; Shielded metal arc welding; Gas metal arc welding and plasma arc cutting. Safety and metal fabrication as well as record keeping, leadership, communications, employability and human relations skills will also be emphasized. 20-25 hours of supervised hands-on welding lab instruction will be occur within the course (required to attend to successfully complete the course). Students will meet at a centrally located selected welding lab/ facility for the hands-on supervised welding instruction part of this course. Travel to/from the facility will be the responsibility of the local school. Welding/Fabrication I is preferred but not required to enroll in Welding/Fabrication II.

## **WELDING AND FABRICATION II (01046)**

**Grade: 10-12   0.5 Credit   Spring Semester  
Online + Labs**

This curriculum is designed to develop student's understanding of applied mechanical applications associated with the field of welding. Content includes, but is not limited to, instruction that prepares individuals to select, operate, and maintain a variety of welding equipment and related tools. Subject matter may include: Plasma cutter, CNC plasma cutter, TIG, aluminum MIG, metal turning lathe, shear/break/role, hydraulic "Ironworker", plastic welder. Safety and metal fabrication as well as record keeping, leadership, communications, employability and human relations skills will also be emphasized. 20-25 hours of supervised hands-on welding lab instruction will be occur within the course (required to attend to successfully complete the course). Students will meet at a centrally located selected welding lab/facility for the hands-on supervised welding instruction part of this course. Travel to/from the facility will be the responsibility of the local school.





# AVIATION


## AVIATION I (17812)

Grade: 11, 12

1 Credit

Full Year

Online + Learning Days



This is the entry level course to prepare students for employment in the aviation industry. The course covers flight fundamentals, flight operations, aviation weather, performance and navigation. The course also explores careers in air traffic control, flight dispatching and airport management. Units of instruction include: safety of flight, airport layout, aeronautical charts, radar, radio procedures, airplane power plant, aerodynamics, weather patterns and hazards. Emphasis on applied academics in math and science are integrated throughout the curriculum along with decision-making principles as it applies to flight-related factors.



## AVIATION II (17813)


Grade: 12

1 Credit

Full Year

Online + Learning Day

***Prerequisite: Aviation I***



This course will cover advanced flight topics as well as expanding topics covered in Aviation I. It will also expand on career exploration based on student aviation interests such as pilot, mechanic, air traffic control, airport management, etc. An Introduction to Unmanned Aircraft Systems (UAS) will also be included. Students will be preparing to pass the Federal Aviation Administration (FAA) private pilot written exam.

# FAMILY AND CONSUMER SCIENCE

## FAMILY AND CONSUMER SCIENCE I (09022)

**Grade: 9 - 12**

**0.5 - 1 Credit**

**Fall/Spring/Full Year**

**Online+Learning Days**

This exploratory course is highly recommended for students as an introduction to the other Family and Consumer Science (FACS) courses offered; especially 9th grade students. Students will learn about necessary everyday life skills they can use today and in their future. It includes basic information and discussion on each topic of FACS. Main concepts provided throughout the course will include the basic understanding of the purpose of family and care of children, dating and teen parenting, communication and goals, nutrition and wellness, personal finance, and clothing care and construction. Hands-on projects during the course may include: cross-stitching, hand sewing, balancing finances, and food prep and nutrition.

## PARENTING (09130)

**Grade: 10 – 12**

**0.5 Credit**

**Fall Semester**

**Online+Learning Days**

Designed for both males and females, this course will prepare you for what is probably the most important job you will ever have, that of being a parent. This course will help you develop positive attitudes, realistic expectations and effective skills for parenting. Pregnancy, parenting roles of fathers and mothers, financial impact of a child and other parenting concerns are emphasized in this class. You will get to practice being a parent by taking home a “RealCare” baby for a period of 2-4 days.

*FACS continued on next page.*







## **INDEPENDENT LIVING (09025)**

**Grade: 10 – 12**

**0.5 Credit**

**Fall or Spring Semester**

**Online+Learning Days**

For a student who is looking forward to being on his/her own, taking this course will help you avoid some common problems. Finding and keeping a job you enjoy, handling your money wisely, securing housing, choosing a roommate, making healthy food decisions, and maintaining your personal possessions are topics covered in this class.



## **CHILD DEVELOPMENT (09026)**

**Grade: 10 - 12**

**0.5 Credit**

**Spring Semester**

**Online+Learning Days**

Popular among students who want to learn more about children. This is a great class for anyone who expects to become a parent or plans to work with children. Students will put into practice what child development experts know will help children be happy, stay safe, and reach their full potential. Students will get an opportunity to practice caring for a child by taking home a RealCare baby for a period of 2-4 days.



## **FAMILY LIVING (09132)**

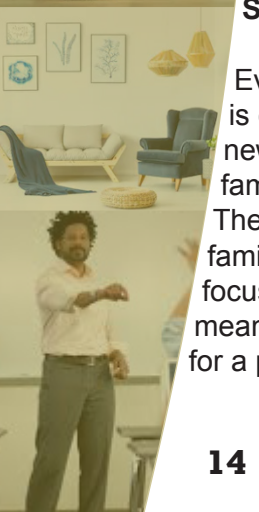
**Grade: 10 – 12**

**0.5 Credit**

**Spring Semester**

**Online+Learning Days**

Every one of us is a part of a family and each family is different. Many students will be forming their own new families before too long. This course is about how families function and how they have changed over time. The value of healthy families, not only to the individual family members but to society as a whole, is the primary focus of this class. Learn what contributes to a stable and meaningful family. Students may care for a “RealCare” baby for a period of 2-4 days.



## EXPLORING THE TEACHING PROFESSION (09041)

Grade: 10 - 12

1 Credit

Full Year

Online+Learning Days

Have you had a teacher make a positive impact on your life? Have you ever thought about possibly becoming a teacher yourself? The Exploring the Teaching Profession course will give students who are interested in becoming teachers a running start into the profession. The course will expose students to, and provide first-hand experiences in the duties of a teacher including, classroom management, student behavior, leadership and human relations skills, assessment of student progress, teaching strategies, and various career opportunities in the field of education. Schools and/or students will need to purchase additional materials/supplies for enrolled students in this course. (approx. cost per student: \$30-50)

**\*Coordination with local school administrators and teachers to complete local clinical hours is required.**

**\*\*Student transportation may be required to complete clinical hours if the school district has multiple buildings throughout your community.**

## HOUSING AND INTERIOR DESIGN (09133)

Grade: 10 - 12

0.5 Credit

Fall Semester

Online+Learning Days

The learning experiences in this course are planned to help the students recognize family needs and values as they pertain to housing. Students will evaluate factors for selecting and financing housing, furnishings and appliances. The “design your dream home” final project is a way for students to use their learned knowledge of color, furnishings and design. Other topics covered are floor plans, historic housing styles, and housing related careers. The course utilizes exciting, yet time intensive project-based curriculum. Schools and/or students will need to purchase additional materials/supplies for enrolled students in this course (approx. cost per student: \$30-50).



# GRAPHIC ARTS

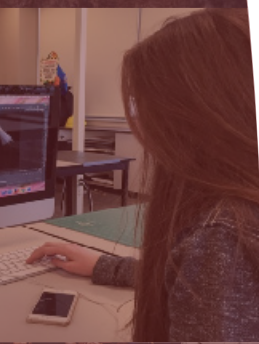
## GRAPHIC DESIGN AND PHOTOGRAPHY I (17072)

**Grade: 10 - 12**

**1 Credit**

**Full Year**

**Online + Learning Days**



This course will introduce students to the skills needed in graphic design. Students will be exposed to photography, scanning, the elements and principles of design, effective thumb-nailing and typography. This course will address how artwork and photographic images can be used in commercial design. Students will create a digital portfolio for their artwork and they will be introduced to the following Adobe Creative Cloud Software: InDesign, Photoshop and Illustrator. Units will be based on the Print Ed competencies and the ND Graphic Communications Education Content Standards for introduction to Graphic Communications and Advertising Design.



## GRAPHIC DESIGN AND PHOTOGRAPHY II (17073)

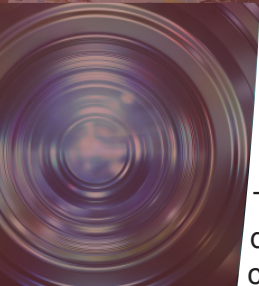
**Grade: 11, 12**

**1 Credit**


**Full Year**

**Online+ Learning Days**

**Prerequisite: Graphic Design and Photography I**



This course will build on the skills needed in graphic design and introduce students to potential careers, college and training opportunities for graphic designers. They will receive more advanced training in the following Adobe Creative Cloud Software: InDesign, Photoshop and Illustrator. They will continue to refine and develop their digital portfolio. The students will create artwork and photographic images that can be used as logos, artwork for t-shirts and other promotional materials. Units will be based on the Print Ed competencies and the ND Graphic Communications Education Content Standards for introduction to Graphic Communications and Advertising Design.





# HEALTH SCIENCE CAREERS

## MEDICAL TERMINOLOGY (07036)

**Grade: 10 - 12**

**0.5 Credit**

**Fall or Spring Semester**

**Online+ Learning Days**

*Dual Credit is available through Bismarck State College.* In this course, students will develop skills necessary for decoding of commonly used medical terms including the meaning of medical suffixes, prefixes and word roots. Students will learn terminology associated with body systems, diseases and disorders of those systems. Students will be also be expected to use correct spelling and pronunciation of medical terms they have learned and will learn commonly used medical abbreviations. \*Course is provided through BSC Blackboard LMS

## INTRODUCTION TO EMERGENCY MEDICAL RESPONDERS (07044)

**Grade: 11, 12**

**1 Credit**

**Full Year**

**Online+ Learning Days**

**Prerequisite: Medical Careers I including First Aid & CPR/AED Certification is required.**

This introductory course prepares students to respond to a wide range of emergencies such as heart attacks, auto accidents and diabetic problems. The units of instruction include, EMS systems, workforce safety, medical, legal and ethical issues, communications and documentation, the human body, airway management, patient assessment, medical emergencies, trauma, special patient populations and EMS operations. On completion of the EMR course students will be better prepared to work with local EMT's to complete requirements for state EMR testing. *Students will not be completing clinical ride-along's in ambulances with EMT squads as a requirement in this course. Students who are 16yrs old or older, and interested in taking the EMR state exam, will need to coordinate with local EMT squads in your community or region to complete the required clinical hours to meet the requirements to take that exam.*

*Health Science continued on next page*





## **MEDICAL CAREERS (07033)**

**Grade: 10 - 12   1 Credit   Full Year   Online/ITV - 1st period 8:30; or 2nd period – 9:25 + Learning Days**

Students will explore healthcare principles such as the history of medicine, safety, disease transmission and prevention. Students will also be introduced to various health careers and medical terminology. Two hands-on learning experiences are required and may necessitate travel to an alternate location. Additionally, there is an optional field trip to explore health science at ND college/universitiies. Students must successfully complete both semesters of this class including First Aid & CPR/AED Certification for Healthcare Providers. This course and the required certifications are the prerequisite to all other Health Science courses and is offered either on-line or via interactive television.

## **ADVANCED MEDICAL CAREERS (07035)**

**Grade: 11, 12   1 Credit   Full Year   Online**

This course will expand on the knowledge gained in Medical Careers. Students will have the opportunity to explore various medical careers through research, professional guest speakers, college tours and potential job shadows. The curriculum is designed to enhance student employability skills and professional medical career readiness. Requirements for job shadowing: up to date vaccinations, including influenza and TB test are required per hospital/clinics/other healthcare facility policies. All students must have a background check. The school/student is responsible for necessary vaccinations and transportation to clinical sites. \*School/student may be responsible for additional course fees including name tag/polo shirt for tours/job shadows, and/or additional registration fees per hospital/clinic job shadow policies/expectations; approximate cost \$35/student.

## INTRODUCTION TO NURSING ASSISTANT (07031)

Grade: 10 - 12

0.5 Credit

Fall Semester    ITV - 4th period Tuesdays and Thursdays  
/ Online Monday, Wednesday, Friday + Learning Days

**Prerequisite: Medical Careers I including First Aid & CPR/  
AED Certification is required.**

This Introduction to Nursing Assistant Training program offers classroom instruction and the necessary skills practice to those preparing for employment as a certified nursing assistant in a skilled nursing facility, acute care or home health care. This course does not require supervised clinical practice hours, but will provide necessary curriculum and supervised skills training to challenge the state CNA board exam provided by the North Dakota Board of Nursing to become a certified CNA. *Assistance will be provided for interested students in coordinating with local healthcare facilities for clinical experiences if desired; not required to complete this course.*





# INFORMATION TECHNOLOGY

## INTRODUCTION TO INFORMATION TECHNOLOGY (27101)

**Grades: 9 - 12**

**0.5 Credit**

**Fall Semester**

**Online + Learning Days**

This exploratory level course provides an exposure to careers and issues in Information Technology. Units prepare students for the industry recognized "Internet and Computing Core Certification" (IC3). This globally recognized certification provides students with the foundation of knowledge needed to excel in fields that involve computers and the Internet. The IC3 Global Standard 3 reflects the most relevant skills for school and business today including: Computing Fundamentals, Key Applications, and Living Online.

## IT ESSENTIALS – PC HARDWARE & OPERATING SYSTEMS (27219)

**Grade: 9 - 12**

**0.5 Credit**

**Spring Semester**

**Online+ Learning**

**Days**

**Prerequisite – Introduction to Information Technology**

*Dual Credit is available through BSC – for grades 10-12.* This course presents an in-depth exposure to computer hardware and operating systems. Students learn how hardware and software components work as well as suggested best practices in maintenance and safety issues. Through hands-on activities and labs, students learn how to physically take apart, assemble, and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course prepares students for Comp TIA's "A+" certification and/or Comp TIA's "IT Fundamentals" certification exams.



## CYBERSECURITY (27280)

Grade: 10 - 12

0.5 - 1 Credit

Fall/Spring/Full Year

Online + Learning Days

As our world becomes increasingly dependent on technology, cybersecurity is a topic of growing importance. It is crucial that individuals and industry take precautions to protect themselves from the growing threat of cyber-attacks. **The fall semester** of this course prepares students with beginning knowledge and crucial skills to be responsible citizens in a digital future. Students will learn foundational cybersecurity topics including digital citizenship and cyber-hygiene, the basics of writing and solving codes, software security, networking fundamentals, and basic system administration. Although this is not a coding-intensive course, students will learn basic SQL, and will utilize basic HTML and JavaScript within specific contexts and will be provided supports within those contexts. Students will complete virtual projects at the end of each module.

**The spring semester** will introduce students to best practices businesses use to protect their information as well as techniques individuals can use to protect themselves using social media. Identification of cybercrime, security principles, technologies and security principles to defend industry networks will be covered. A culminating course project where they will complete a simulated cybersecurity hacking experience will occur to build skills and knowledge for students to pursue careers in cybersecurity. **DUAL CREDIT IS AVAILABLE THROUGH BSC – FOR SPRING SEMSTER ONLY**

## CODING WITH JAVA (27125)

Grade: 10 - 12

0.5 Credit

Spring Semester

Online + Learning Days

This course will provide students with a solid base for understanding the main concepts of programming languages. Students will be introduced to the JAVA programming language and complete projects utilizing programming concepts, variables, constants, decision structures and looping structures.

*Information Technology continued on next page*





## **CODING WITH PYTHON – (27123)**

**Grade: 10 - 12**

**0.5 Credit**

**Fall Semester**

**Online + Learning Days**

*Dual credit is available through BSC.* This course is an online application-based course in computer programming using Python language; the fastest growing computer language in the world today. The students will develop good problem solving and programming skills while performing several hands-on labs and assignments including gaming. Topics covered include; procedures, mathematical and business functions, arrays and structures, color, sound, and graphics, creating classes, using files, sorting and searching.



## **VIDEO GAME DESIGN (27130)**


**Grade: 10 - 12**

**1 Credit**


**Full Year**

**Online + Learning Days**

**\*COMPLETION OF CODING WITH PYTHON AND/OR JAVA IS STRONGLY RECOMMENDED. This is an upper level coding class.**



The course is an upper level coding course that teaches the foundations of creating and designing video games in JavaScript. The course utilizes a blended classroom approach. The content is fully web-based, with student's writing and running code on-line with teachers utilizing other tools and resources such as on-line videoconferencing to give focused 1-on-1 attention to students. Each unit of the course is broken down into lessons consisting of various resources, example programs to explore, and written programming exercises, adding up to over 100 hours of hands-on video game programming practice in total!



## INTRODUCTION TO NETWORKING (27265)

**Grades: 9 - 12**

**0.5 Credit**

**Fall or Spring Semester Online+ Learning Days**

This course teaches the basics of networking. It covers how network devices work together, network addressing and services, how to build a home network and design basic security, the basics of configuring Cisco devices, as well as testing and troubleshooting network problems.

## NETWORK FUNDAMENTALS I (27266)

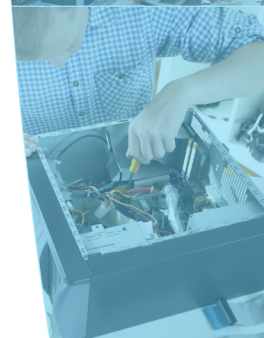
**Grade: 10 - 12**

**1 Credit**

**Full Year**

**Online + Learning Days**

*Dual Credit is available through Bismarck State College.* Network Fundamentals I covers networking architecture, structure, and functions. The course introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation toward a career in networking. Students will be able to design an IP addressing structure to provide network connectivity for a small to medium-sized business network, form initial settings on a network device, and implement basic network connectivity between devices.





# MARKETING

*Students have the opportunity to participate in DECA through Bismarck Public Schools CRACTC group.*

## MARKETING (04210)

**Grade: 10 - 12**

**1 Credit**

**Full Year**

**Online+ Learning Days**

This course develops student understanding and skills in such areas as channel management, marketing-information management, market planning, pricing, product/service management, promotion, and selling. Focus will be on the marketing mix, including products, promotion, pricing, and distribution. Through the use of projects and on-line simulations, students acquire an understanding and appreciation of marketing activities. Current technology will be used to acquire information and to complete the projects. Throughout the course, students are presented problem-solving situations for which they must apply academic and critical-thinking skills.

## PRINCIPLES OF FINANCE (04081)

**Grades 9 - 12**

**0.5 credit**

**Fall Semester**

**Online + Learning Days**

Principles of Finance expands student understanding of finance. Students develop their knowledge and skills in such areas as business law, communication skills, compliance, customer relations, economics, financial analysis, financial-information management, human resources management, marketing, professional development, and selling. Emphasis is placed on the analysis and purchase of securities and investments, as well as the need for effective customer relationship management and information management in finance. Principles of Finance is an entry level course in The Business Administration Program of Study for Marketing Education.



## **SPORTS AND ENTERTAINMENT MARKETING (04240)**

**Grade: 10 - 12**

**Fall Semester**

**0.5 Credit**

**Online + Learning Days**

This course introduces students to marketing occupations in the area of sports and entertainment. Take a look at the exciting and dynamic field of sports and entertainment marketing. One of the largest industries in the world, sport marketing provides a unique way of looking at the business world. This course will focus on the two main aspects of sports and entertainment marketing: 1) The marketing of sports and entertainment, and 2) The marketing of non-sports products and services through sports. You will discover why companies pay to be associated with a team or entertainer; how to develop ticket plans to fill the seats in the arena; why targeting your marketing efforts is so important; and more.

## **SOCIAL MEDIA MARKETING (04235)**

**Grades 9 - 12**

**Spring Semester**

**0.5 credit**

**Online + Learning Days**

Social Media Marketing presents the use of on-line social networking as a business strategy designed to increase customer loyalty and inquiry conversion. Students will study major social media channels and marketing campaign techniques, and evaluate contemporary and emerging tools in the digital marketplace including social bookmarking and techniques to drive social media traffic. Analyses of social media effectiveness will also be explored. Social Media Marketing is an entry level course in The Business Administration Program of Study for Marketing Education.

*Marketing continued on next page*



## **PRINCIPLES OF ENTREPRENEURSHIP (04110)**

**Grades 9 - 12**

**0.5 credit**

**Spring Semester**

**Online + Learning Days**

Have you ever thought of owning your own business?

This is a marketing course that introduces students to a wide array of entrepreneurial concepts and skills. Students will develop an appreciation for marketing's role in the development and success of a new business. Students conduct thorough market planning for their ventures: selecting target markets; conducting market, SWOT, and competitive analyses; forecasting sales; setting marketing goals and objectives; selecting marketing metrics; and setting a marketing budget. The capstone activity in the course is the development of detailed marketing plans for students' start-up businesses.

# TECHNOLOGY & ENGINEERING

**\*\*Math and Science credit options are available for STEM I and II. Math and Science credit options are not CTE credits and are not accepted toward the state CTE Scholarship.**

## STEM SEMINAR I

*This course can be coded as Tech Ed credit (10610),*

*\*\*Science credit (13150), or \*\*Math credit (11170).*

**Grades: 9 - 12**

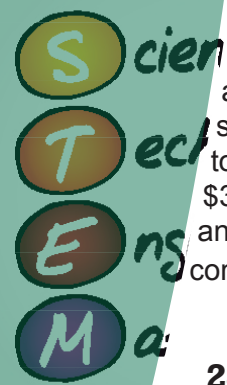
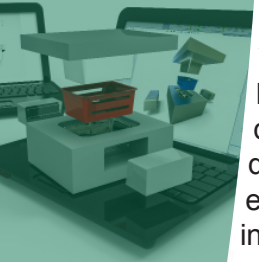
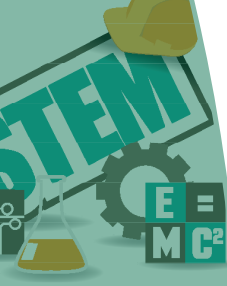
**0.5 Credit**

**Fall Semester**

**Online + Learning Days**

This is a project-based course in which students use Science, Technology, Engineering and Math to solve real world problems. Students will design projects such as bridges, assistive-reach devices, parachutes, etc. Students will use common, everyday materials to design prototypes of products that help people in the real world. STEM focuses on the basics of the Engineering Design Process. STEM careers will also be explored. There are no textbooks, quizzes, or tests. All grading will be based on the effort in the creation of a product, participation in discussion, and use of the engineering design process. \*Schools will be required to purchase applicable course materials (approximately \$15 or less per student).

*Technology and Engineering continued on next page*



## STEM SEMINAR II

*This course can be coded as Tech Ed credit (10610),  
\*\*Science credit (13150), or \*\*Math credit (11170).*

**Grades: 9 - 12**

**0.5 Credit**

**Spring Semester**

**Online + Learning Days**

Students will explore concepts such as energy, power, and agricultural engineering. STEM careers will also be explored. There are no textbooks, quizzes, or tests. All grading will be based on the effort in the creation of a product, participation in discussion, and use of the engineering design process. \*Schools will be required to purchase applicable course materials (approximately \$15 or less per student).

## FOUNDATIONS OF ENGINEERING AND TECHNOLOGY (10094)

**Grades: 9 - 12**

**0.5 Credit**

**Fall Semester**

**Online + Learning Days**

**Prerequisite: STEM SEMINAR I or II**

Would you prefer to learn by doing? Do you like to build things? In this class, students will complete design challenges while researching better solutions, designing 3D models and actual models, testing and evaluating products. Some possible hand's-on projects include developing and designing a wind turbine, solar car, CO2 dragster, a mousetrap car, and a glider. This course consists of two separate learning units, each nine weeks in length: Energy and Power Technologies and Transportation Technologies. STEM careers and safety will also be explored. \*Schools will be required to purchase applicable course materials (approximately \$35 or less per student). \*\*Additional course material and supplies include items such as saws, drills, etc. to complete projects.

## FOUNDATIONS OF ENGINEERING AND TECHNOLOGY II (10094)

**Grades: 9 - 12**

**0.5 Credit**

**Spring Semester**

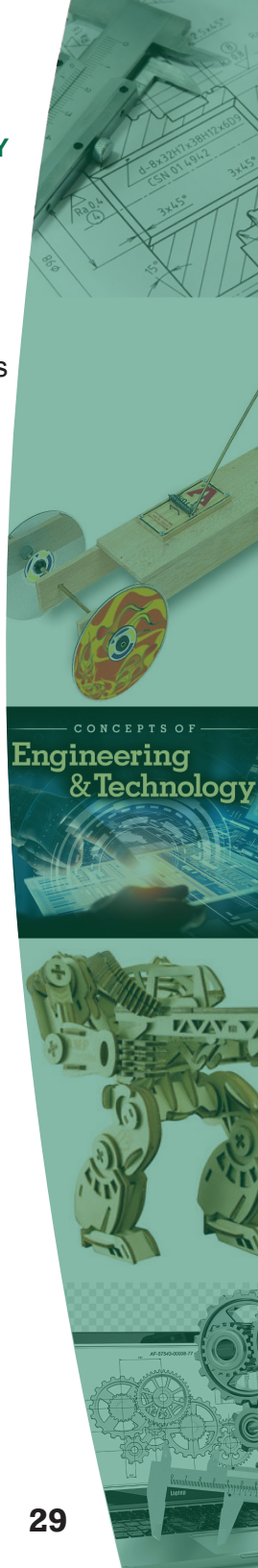
**Online + Learning Days**

**Prerequisite: Foundation of Engineering I**

In this class, students will complete design challenges while researching better solutions, designing 3D models and actual models, testing and evaluating products. Some possible hands-on projects include developing and designing a bridge, a survival shelter, a prosthetic arm, a robot and a rocket. This course consists of two separate learning units, each nine weeks in length: Manufacturing Technologies and Construction Technologies. STEM careers and safety will also be explored.

\*Schools will be required to purchase applicable course materials (approximately \$35 or less per student).

\*\*Additional course material and supplies include items such as saws, drills, etc.. to complete projects.







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