



REGISTRATION GUIDE  
FOR  
CAREER & TECHNICAL EDUCATION  
COURSE OFFERINGS  
2018-2019

# BOLLMAN TECHNICAL EDUCATION CENTER

The Bollman Technical Education Center (BTEC) serves students from Horizon, Legacy, Mountain Range, Northglenn, Thornton, Pathways, and Vantage Point High Schools, as well as District 12 charter schools. BTEC is located at 9451 North Washington Street. District 12 bus transportation is provided for Horizon, Legacy, Mountain Range, Northglenn, and Vantage Point students from their home high schools. It will be necessary for students enrolled in programs at BTEC to have travel time built into their schedules to allow for transportation between schools.

BTEC offers Career and Technical Education programs for students who are seeking technical expertise combined with employability skills and/or certifications. These may be applied while attending a community college, career and technical school, four-year college or university, entering the military, or for entry-level positions beyond high school. With the assistance of their counselor and parents, students should try to determine which career areas they would like to pursue. BTEC offers the following Career and Technical programs:

## **CAREER AND TECHNICAL COURSE OFFERINGS BY CAREER PATHWAY**

<b>HEALTH SCIENCE, CRIMINAL JUSTICE, &amp; PUBLIC SAFETY</b>	<b>STEM, ARTS, DESIGN, &amp; INFORMATION TECHNOLOGY</b>
<i>Medical Sciences I</i>	<i>Introduction to Engineering (PLTW®)</i>
<i>Medical Sciences II - CNA</i>	<i>Principles of Engineering (PLTW®)</i>
<i>Medical Sciences II - EMT</i>	<i>Computer Integrated Manufacturing –CIM (PLTW®)</i>
<b>HOSPITALITY, HUMAN SERVICES, &amp; EDUCATION</b>	<i>Aerospace Engineering (PLTW®)</i>
<i>ProStart (Bus. Mgmt./Culinary Arts) (Offered at ESC)</i>	<i>Engineering Design &amp; Development - Capstone (PLTW®)</i>
<i>Teacher Cadet (Introduction to Education)</i>	<i>Introduction to Computer Science</i>
<b>SKILLED TRADES, &amp; TECHNICAL SCIENCES</b>	<i>A.P. Computer Science A</i>
<i>Automotive Technology</i>	<i>Cybersecurity</i>
<i>Diesel Automotive Technology</i>	<i>Video Production</i>
<i>Carpentry</i>	<i>Graphic Design</i>
<i>Home Improvement &amp; Repair</i>	
<i>Welding Technology</i>	

**All Career and Technical Education courses meet the Fine/Practical Arts graduation requirement.** These programs are offered free to District 12 students; however, it may be necessary for students to purchase supplies that are beyond the basic program requirements, and all programs have a course fee. Safety is a priority at BTEC, and special clothing may be required for some program areas.

## **NOTE TO PARENTS:**

- Any alcohol, drug, or other substance use violation could be grounds for denial of admission to a program or removal from a program once admitted.
- Excellent attendance is important in all BTEC programs. Five or more unexcused absences may result in a student being placed on an attendance contract. Failure to comply with an attendance contract may result in disenrollment from BTEC.
- Students enrolled in the Medical Sciences II programs will be required to have up-to-date immunizations, a TB vaccination, and a current physical.
- Students enrolled in the Medical Sciences II and Teacher Cadet programs must provide their own transportation to off-site locations for projects, clinical rotations, and observations, or teaching experiences. Transportation is not provided for C N A students after 8<sup>th</sup> hour second semester.
- It is required that all students who register for a BTEC program attend the pre-acceptance meeting in April.
- Juniors are given priority acceptance into some programs. Sophomores and seniors will be accepted on a “space available” basis.
- College credits are available in most CTE programs. Contact the BTEC registrar or a BTEC counselor for more information.

**EXCEPTION TO THE THREE (3) CORE CLASS REQUIREMENT:** According to Superintendent Policy 6340 Section 1.4.2, “Exceptions to the three (3) core class (1-1/2 credits) requirement may be made for students at BTEC, providing such students can demonstrate competency in the core areas, and students with special circumstances as approved by the principal or designee.”

## **HIRE EDUCATION (ON-THE-JOB-TRAINING):**

*Potential Credit Earned: .5 - 1.0 credit per year, up to 2.0 credits total toward graduation*

Interested students who are enrolled in a pre-approved Career and Technical Education course (CTE) or who have completed the pre-approved CTE pathway, may choose to participate in HIRE Education (on-the-job-training). In Hire Ed, students will have the opportunity to apply their classroom knowledge to their job. Students will work with the Hire Ed coordinator throughout the semester. **Students should not enroll in HIRE Education as a separate class on the course registration selection form. The HIRE Education Coordinator will sign students up after courses have begun each semester.**

- Students must work a minimum of 125 documented hours to earn .5 credits.
- Students may ONLY earn .5 credit per semester.
- Students must work a minimum of 250 documented hours to earn 1.0 credit for the entire school year.
- Students cannot earn more than 1.0 credit per school year and may ONLY earn a maximum of .5 credit per semester
- Students may not be enrolled in and/or receive credit for more than one HIRE course at a time.
- Students may not count more than 2.0 HIRE Ed credits towards graduation requirements.
- HIRE Ed credit may not be included in nor does it count toward the 6.0 credit total required yearly for each student
- Students must complete a HIRE Ed. Agreement to enroll.
- A student must pass the CTE course he/she is enrolled in in order to earn HIRE Ed. credit that semester.

## **SERVICE LEARNING**

Service Learning credit allows students to volunteer at various work sites and receive .5 elective credit per semester for 60 hours of service. Registration is open any time during the year through the HIRE Education Coordinator. Students must complete 60 hours with an evaluation in order to receive credit. Contact the HIRE Education Coordinator at 720-972-3824 for more information.

## **CAREERREADY COLORADO CERTIFICATE**

Students enrolled in a BTEC program have the opportunity to train and test for the CareerReady Colorado Certificate developed by ACT Work Keys. Students who complete the training and testing at the Silver Level or higher will receive .5 elective credit. This certificate verifies workplace competencies in three areas: Reading for Information, Applied Mathematics, and Locating Information. The HIRE Education Coordinator facilitates training and testing. A test fee may apply.

## **ARTICULATION AGREEMENTS**

Articulation Agreements have been established for most programs and continue to be maintained between BTEC, community colleges, 4-year colleges, and private post-secondary institutions. This allows students the opportunity to earn college credit(s). Please contact the registrar at 720-972-5827 or a counselor at 720-972-5834, or visit our website at [bollmantech.adams12.org](http://bollmantech.adams12.org) for more information or program specific questions about Articulation Agreements.

## **CONCURRENT ENROLLMENT**

Concurrent Enrollment is designed to improve coordination between secondary and post-secondary institutions to create a seamless pathway for students to transition from one level to the next. A student is simultaneously enrolled in BTEC and an institute of higher level education. Not all programs will be eligible for Concurrent Enrollment for the 2018-2019 school year. Please contact the registrar at 720-972-5827 or a counselor at 720-972-5834, or visit our website at [bollmantech.adams12.org](http://bollmantech.adams12.org) for more information or program specific questions about Concurrent Enrollment.

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## **AEROSPACE ENGINEERING – Project Lead the Way® (STEM Pathway)**

11, 12

Credit: 1

Aerospace engineering explores the evolution of flight, navigation and control, flight fundamentals, aerospace materials, propulsion, space travel, and orbital mechanics. In addition, this course presents alternative applications for aerospace engineering concepts. Students analyze, design, and build aerospace systems. Topics covered in the course may include the history of flight, aerodynamics and aerodynamics testing, flight systems, astronautics, space life systems, aerospace materials, and systems engineering. Inter Planetary Probes and control are also explored.

### **Counseling Notes:**

1. This course is rigorous in both Math and Science. Students registering for Aerospace should have successfully completed or be currently enrolled in CP Physics and Math III or have instructor approval
2. This course is recommended for students interested in design and engineering
3. Course fee: \$20.00

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE AEROSPACE ENGINEERING PROGRAM:**

*Aerospace Engineer    Mechanical Engineer    Engineering Manager    Aerospace Systems Analyst*

## **AP COMPUTER SCIENCE A (STEM, & Computer Science Pathway)**

10, 11, 12

Credit: 1

A.P. Computer Science A is a year-long course in computer science. A large part of the course is built around the development of computer programs or parts of programs that correctly solve a given problem. The course emphasizes the design issues that make programs understandable, adaptable, and when appropriate, reusable. The development of useful computer programs and program modules is used as a context for introducing other important concepts in computer science, including the development and use of fundamental data structures, and the study of standard algorithms and typical applications. In addition, use of these systems is an integral part of the course. Students can receive college credit by receiving a qualifying score on the A.P. Computer Science exam.

JAVA is the featured language of A.P. Computer Science A.

### **Counseling Notes:**

1. Course fee of \$94.00 for the A.P. Examination.
2. All students taking A.P. Computer Science A will be required to attempt the Advanced Placement Examination in order to receive the weighted credit for this course.
3. There will also be a mandatory parent/student meeting in April that will cover class expectations. At that time, parent and student will sign an AP contract.
4. Prerequisite: Introduction to Computer Science, A.P. Computer Science Principles, or Instructor approval

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN A.P. COMPUTER SCIENCE:**

*Computer Programmer*

*Computer Engineer*

*Web Designer*

*Video Game Designer*

## **AUTOMOTIVE TECHNOLOGY I (Transportation, Distribution, & Logistics Pathway)**

10, 11, 12

Credit: 2

The BTEC Auto Technology program is National Automotive Technical Education Foundation (NATEF) certified in all eight areas. Instructors are Master ASE Certified.

The BTEC Auto Technology I program provides great opportunities for students interested in careers related to the automotive industry. Level I students will gain a thorough knowledge of engine performance, electronic diagnostics, light maintenance, brakes, tires, cooling systems, chassis, drivetrains, fuel systems, steering, suspension, and electrical systems. Students will have the opportunity to obtain student ASE certifications in the automotive field.

### **Counseling Notes:**

1. Safety glasses, shop shirt or coveralls, and appropriate shoes are required
2. Course fee: \$40.00

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE AUTO TECHNOLOGY PROGRAM:**

*Auto Shop Owner/Manager*

*Diesel Mechanic*

*Master Auto Technician*

*Repair Service Estimator*

*Small Engine Repair*



## **AUTOMOTIVE TECHNOLOGY II (Transportation, Distribution, & Logistics Pathway)**

11, 12

Credit: 2

The BTEC Auto Technology program is National Automotive Technical Education Foundation (NATEF) certified in all eight areas. Instructors are Master ASE Certified. Auto Technology II students must demonstrate a strong interest in the auto technology industry. This program is designed to provide a thorough knowledge of engine performance, advance charging systems, advanced brakes, alignments, suspension, electrical system diagnostics, engine rebuilding, and emission testing. Students will have the opportunity to obtain student ASE certifications. It is expected that students will enroll in the AYES program.

### **Counseling Notes:**

1. Students must have instructor recommendation to register for this course
2. Safety glasses, shop shirt or coveralls, and appropriate shoes are required
3. Course fee: \$40.00

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE AUTO TECHNOLOGY PROGRAM:**

*Auto Shop Owner/Manager      Diesel Mechanic      Master Auto Technician      Dealer Service Technician*  
*Repair Service Estimator      Small Engine Repair*



## **CARPENTRY (Architecture & Construction Pathway)**

10, 11, 12

Credit: 2

The BTEC Carpentry program is National Center for Construction Education and Research (NCCER) certified. Instructors are NCCER certified.

Is buying your own home one of your lifetime goals? Do you like working with your hands? Do you like designing and building? The BTEC Carpentry program provides great opportunities for the student interested in the DIY/construction industry or for the independent "Mr. or Ms. Fix it!" "Don't spend money paying someone else to fix a problem in your house. In this hands-on, project based course, you will learn the skills necessary to become an entry-level residential carpenter/designer. This course will primarily focus on areas of home building, design, and home improvement. This includes paint, rough carpentry, wood framing, light electrical, plumbing, walls, roofs, soffits, fascia, windows, and doors. You will learn the proper methods for laying-out and installing sills, joists studs plates, trusses rafters, and sheathing. Essential skills such as construction-related math, blueprint reading, and estimating will be taught and utilized throughout this course. Each student will have the opportunity to design several home projects while also developing great leadership and teamwork skills. Students will have the opportunity to obtain NCCER and OSHA certifications.

### **Counseling notes:**

1. Course fee: \$40.00
2. Additional supplies include:
  - a. Safety toed shoes/boots
  - b. Safety glasses
  - c. Basic hard hat for field trip and on the job exercises.

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE CARPENTRY PROGRAM:**

*Construction Management*

*Carpenter*

*Architect*

*Surveyor*

*Home Maintenance and Repair*

*Interior Designer*

*Building Inspector*

*Engineering*

**COMPUTER INTEGRATED MANUFACTURING - Project Lead the Way® (STEM Pathway)**

**(Robotics and Automation)**

11, 12

Credit: 1

How are things made? What processes go into creating products? How has automation changed manufacturing? You will be presented with design problems that require the use of SolidWorks to develop solutions. Students will learn to use CNC (Computer Numeric Control) machinery to produce your design and learn to program the robot to produce your product in quantity. Utilizes project/problem base learning. Students will design, create, and program robotic devices. Four new software applications are learned in this course. The following are expected outcomes:

- Learn how things are made.
- Program Robots & Robotic Arms
- Programmable Micro-Computers
- Solid Works Engineering Modeling Software
- Automated Machining (CNC Mill)
- Learn to speak the language of Machines

**Counseling Notes:**

1. This course is recommended for students interested in design and engineering
2. Students registering for CIM should have successfully completed or currently be enrolled in Contemporary Math II
3. Course fee: \$20.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE COMPUTER INTEGRATED MANUFACTURING PROGRAM:**

*Manufacturing*

*Mechanical Engineer*

*Industrial Engineer*

*Project Management*

**CYBERSECURITY (STEM, & Computer Science Pathway)**

11, 12

Credit: 1

In this one-year course students increase their cyber awareness which helps to develop a more educated cyber workforce. Students will get hands on experience securing vulnerabilities on a Windows Server, a Linux machine and a Windows machine. Students will also be exploring the following topics:

**Law** explores the differences between a criminal offense and a moral wrong, protection of intellectual property, the functions and uses of permanent electronic records, and the role of laws in addressing social challenges.

**Politics** inspects how cyberspace, and specifically social media, influences the political climate around the world as well as the ways hacking affects those same politics.

**Terrorism** analyzes the motivations behind, desired outcomes of, and consequences of acts of terrorism and discusses appropriate counter attacks or counter measures.

**Networking and Security (NS)** showcases the structure of networks as well as the vulnerabilities. The need for security is heavily emphasized through man-in-the-middle attacks, cryptography, and steganography.

**Ethics** examines ethical implications of extensive technology use such as conceptions of friendships, privacy, personality, and the harms inherent in new technologies.

**Communities** investigates the necessity of a networked society, crowdsourcing information, technology used in communication, virtual collaboration, and team dynamics.

**Business** demonstrates the collection, storage, usage, and protection of data; cybersecurity attacks and threats; and technology to improve information security.

**Artificial Intelligence** introduces a definition of "smart" technology, examines the concept of intelligence, and explores the current, and potential future, roles of AI around the globe.

**Counseling Notes:**

1. Prerequisite: AP Computer Science or AP Computer Science Principles
2. Course fee: \$20.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN CYBER SECURITY:**

*Cyber Crime Investigator      Cybersecurity Consultant      IT Auditor      Software Development  
Cybersecurity Engineer*

**DIESEL AUTOMOTIVE TECHNOLOGY I (Transportation, Distribution, & Logistics Pathway)**

10, 11, 12

Credit: 2

The Diesel Automotive Technology course is a one year program designed to train entry level diesel mechanics to enter the workforce at the apprentice level. Students are trained in shop safety, preventive maintenance, engine theory and rebuild, electrical and electronic theory, troubleshooting, hydraulic theory, design and troubleshooting, powertrain theory, performance, operation and component rebuild. All courses will follow ASE, N.A.T.E.F. standards. Students will be working on live-units with real-world problems to diagnose/repair and to gain the hands-on experience they need to become successful technicians. Students will have the opportunity to obtain student ASE certifications in the automotive field and complete a job shadow experience.

**Counseling Notes:**

1. Safety glasses, shop shirt or coveralls, and appropriate shoes are required
2. Course fee: \$40.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE DIESEL TECHNOLOGY PROGRAM:**

*Auto Shop Owner/Manager      Diesel Mechanic      Master Auto Technician      Repair Service Estimator*



## **DIESEL AUTOMOTIVE TECHNOLOGY II (Transportation, Distribution, & Logistics Pathway)**

11, 12

Credit: 2



The Diesel Automotive Technology II course is a one year program designed to train diesel mechanics to enter the workforce at the apprentice level. Diesel Technology II students must demonstrate a strong interest in the diesel technology industry. Students will have the opportunity to obtain student ASE certifications and a job shadow experience. It is expected that students will enroll in the AYES program.

Students are trained in:

- Advanced Transmission & Engine Rebuilding
- Advanced Computer Diagnostic & Engine Performance – Gas and Diesel Engines
- Advanced Driveline Repair
- DOT Inspection Procedures
- Air-Conditioning
- Advanced Electrical Diagnostic & Repair
- Advanced Suspension & Repair

All courses will follow ASE, N.A.T.E.F. standards. Students will be working on live-units with real-world problems to diagnose/repair and to gain the hands-on experience they need to become successful technicians. Instructor is Advanced/Master ASE Certified.

### **Counseling Notes:**

1. Students must have instructor recommendation to register for this course
2. Safety glasses, shop shirts or coveralls, and appropriate shoes are required
3. Course fee: \$40.00

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE DIESEL TECHNOLOGY PROGRAM:**

*Auto Shop Owner/Manager      Diesel Mechanic      Master Auto Technician      Repair Service Estimator*

## **ENGINEERING DESIGN & DEVELOPMENT - Project Lead the Way® (STEM Pathway)**

11, 12

Credit: 1

In this capstone course, students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel.

### **Counseling Notes:**

1. Prerequisite: Successful completion of Principles of Engineering or instructor approval
2. Course fee: \$20.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN ENGINEERING DESIGN AND DEVELOPMENT:**

*Engineering*

*Project Manager*

*Machining*

*Manufacturing*

**GRAPHIC DESIGN I (Arts, A/V Technology, & Communication Pathway)**

10, 11, 12

Credit: 2

Graphic Design I students learn the fundamental elements and principles of design; using the creative process through to post-production. Graphic Design students must learn to speak a global, visual language and develop awareness of the meanings, power of symbols, images and words. Course work and projects are developed to give each student a well-rounded understanding along with the skills needed to become a proficient designer. Projects are designed to increase student's artistic abilities, give a variety of perspectives for visual problem solving and expand critical and creative thinking skills. Using a variety of industry standard practices, mediums, methods, and techniques students will conduct research, generate and execute ideas, study form and media, and learn to analyze their own work and that of others. They will also become competent with the graphic design process. Medium includes television, magazines, books, street signs, movies, CD covers, logos/branding, packaging, communication design, typography, digital illustration, photo manipulation, page layout, computer games, mobile devices, banners, and billboards or the internet. Students will work with Macintosh computers and Adobe software.

**Counseling Notes:**

1. Supplies required:
  - Sketch book or journal
  - 4 GB or greater flash drive
  - Portfolio (Hobby Lobby \$3-\$7)
  - 3-ring binder and 1 ream (500 sheets) copy paper
  - Refillable or disposable artist inking pen
2. Course fee: \$40.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE GRAPHIC DESIGN PROGRAM:**

*Advertising/Marketing*

*Animator/Illustrator*

*Artist*

*Industrial Designer*

*CD/Book Jacket Designer*

*Packaging Designer*

*Production Artist*

*Layout Artist*

*Art Director*

*Web Designer*

*Publication Design*

*Entertainment Media*

**GRAPHIC DESIGN II (Arts, A/V Technology, & Communication Pathway)**

11, 12

Credit: 2



Graphic Design II students learn advanced skills and techniques in all areas of the creative process: communication arts; production; post production; print, and web medias, development; visual problem solving; critical thinking; artistic fundamentals; team building, and "real world" employability skills. Students will further expand their knowledge of speaking a global, visual language and developing awareness of the power of symbols, meanings, images and words.

Course work and projects are developed to give each student skills sets needed to become a competent, efficient designer who uses the technology as well as the psychology and marketing aspects of industry. Projects are designed to increase student's artistic abilities, give a variety perspectives for visual problem solving, expand critical and creative thinking skills, and develop skills in working within a team in a studio setting. Students will also become competent with designing CD covers, logos/branding, packaging, communication design, typography, digital illustration, photo manipulation, page layout, computer games, mobile devices, banners and billboards. Students will produce a quality and diverse portfolio, along with a website that can be used for employment and college interviews. Graphic Design II students may also complete a job shadow or internship with professional graphic designers.

**Counseling Notes:**

1. Successful completion of Graphic Design I and instructor recommendation are required.
2. Supplies required:
  - Sketch book or journal
  - 4 GB or larger flash drive
  - Portfolio
  - 3-ring binder/ and 1 ream (500 sheets) copy paper
  - Refillable or disposable artist inking pen
3. Course fee: \$40.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE GRAPHIC DESIGN PROGRAM:**

*Advertising/Marketing*

*Animator/Illustrator*

*Artist*

*CD/Book Jacket Designer*

*Packaging Designer*

*Art Director*

**HOME IMPROVEMENT & REPAIR (Architecture & Construction Pathway)**

11, 12

Credit: 2



The BTEC Home Improvement program is National Center for Construction Education and Research (NCCER) certified. Instructors are NCCER certified.

Home Improvement and Repair is the most advanced construction trades course offered at BTEC. This project-based course covers a broad range of topics within the construction and home repair fields. Students complete units in the areas of concrete, siding, roofing, insulation, drywall, interior trim, flooring, and finish carpentry. More advanced than carpentry, the course will also train students in the electrical and plumbing trades. Students learn the proper methods to complete jobs in all construction divisions. Applicable math concepts such as estimating, geometry, and angles are taught and utilized throughout. At the end of this course, students have the confidence and knowledge to tackle many home improvement related projects which would normally require a paid professional. Students will have the opportunity to obtain NCCER and OSHA certifications.

**Counseling notes:**

1. Prerequisite: Successful completion of BTEC Carpentry course and/or instructor approval.
2. Course fee: \$40.00
3. Additional supplies include:
  - a. Safety toed shoes/boots
  - b. Safety glasses
  - c. Basic hard hat for field trip and on the job exercises.

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE HOME IMPROVEMENT & REPAIR PROGRAM:**

*Construction Management  
Maintenance and Repair  
HVAC repair*

*Home Inspector  
Interior Designer*

*Architect  
Electrician*

*Engineering Home  
Plumber*

**INTRODUCTION TO COMPUTER SCIENCE (STEM and Computer Science Pathway)**

10, 11, 12

Credit: 1

This is a one-year introductory course to computer science. In this course students will learn the fundamentals of programming using processing, a Java-based, visually-oriented language. Students will write programs that will draw pictures, run animations, create basic algorithms, simulate basic 2D games/applications, and learn language for expressing computations-JAVA. Topics to be covered in this course include variables, conditionals, loops, arrays, and classes. Students will also learn how to use computational tools to help model and understand data.

Prerequisites: CMIC I

**Counseling Notes:**

3. This course is a recommended pre-requisite to AP Computer Science A.
4. Course fee: \$20.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN INTRODUCTION TO COMPUTER SCIENCE:**

*Computer Programmer  
IT Specialist*

*Computer Engineer  
Network Technician*

*Web Designer*

*Video Game Designer*

**INTRODUCTION TO ENGINEERING – Project Lead the Way® (STEM Pathway)**

10, 11, 12 (9, 10, 11, or 12 for Thornton H.S. students only)

Credit: 1

The major focus of Introduction to Engineering is the design process and its application. Through hands-on projects, students apply engineering standards and document their work. Students expand their knowledge of major engineering concepts such as design, optimization, technology-society interaction, and ethics. Particular topics often include applied engineering graphic systems, engineering design principles, research and development processes, and manufacturing techniques and systems. Students use industry-standard 3D modeling software to help them design solutions to solve proposed problems, document their work using an engineer's notebook, and communicate solutions to peers and members of the professional community.

**Counseling Notes:**

1. Students should have a good understanding of basic algebra
2. This course is recommended for students interested in design and engineering
3. Course fee: \$20.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN INTRODUCTION TO ENGINEERING PROGRAM:**

*Mechanical Engineer    Electrical Engineer    Structural Engineer    Alternative/Renewable Energy Technician*

**MEDICAL SCIENCES I (Health Science and STEM Pathways)**

11, 12

Credit: 2

1 Science - CP Anatomy and Physiology

1 Practical Arts/Elective

The Medical Sciences I program is designed for students who are interested in pursuing careers in the health care field. This course is also recommended for students who plan to apply for Medical Sciences II in their senior year. The core curriculum is based on National Health Care Standards and is focused on the following:

- CP Anatomy & Physiology
- Health care career exploration
- Workplace skills including problem-solving and teamwork
- Medical terminology
- Medical math
- Cultural diversity
- Law, and Ethics in Health Care
- Students may receive training and test for certification in First Aid and CPR

Students are encouraged to participate in HOSA (Health Occupations Students of America) and may participate in fundraising activities to help pay costs for:

- HOSA Leadership Conferences
- Cadaver field trip
- First Aid and CPR certification
- Other field trips

**Counseling Notes:**

1. Students registering for this course will be required to complete an application, consisting of a short essay and teacher/counselor recommendations
2. Course fee: \$40.00

**POSSIBLE FUTURE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN MEDICAL SCIENCES 1:**

<i>Nurse</i>	<i>Athletic Trainer</i>	<i>CNA</i>	<i>EMR/EMT/Paramedic</i>
<i>Doctor</i>	<i>Dental Hygienist</i>	<i>Vet Tech</i>	<i>Massage Therapist</i>
<i>Physical Therapist</i>	<i>Dentist</i>	<i>Veterinarian</i>	<i>Psychiatrist</i>

**MEDICAL SCIENCES II CNA-Certified Nurse Aide (Health Science and STEM Pathways)**

12

Credit: 2.5

**Semester 1**



.5 Science-Pathophysiology  
.5 Fine Practical Arts/Elective

**Semester 2**

.5 Science-Pathophysiology  
.5 Fine Practical Arts/Elective

**In addition, please select one of the following options:**

.5 Fine Practical Arts/Elective  
Or .5 Health (if Health credit is needed)  
Or .5 P.E. (if P.E. credit is needed)

**(Only one ½ credit of the above non-academic courses can be applied to meet graduation requirements.)**

The Medical Sciences II CNA program is designed for the mature, responsible student wishing to investigate health related careers. Students interested in registering for this program should have a serious interest and long-term goal of employment in the medical field. A strong commitment to the program is necessary to be successful in this class. This program emphasizes character building, honesty, integrity, and professionalism. The core of the curriculum is focused on the following curriculum: medical terminology, pathophysiology, medical math, career exploration, safety practices, ethics, and human relations. All are delivered through classroom, laboratory, and clinical situations. **Students completing this course will receive their CPR/First Aid Certification. They will also be eligible for certification as nursing assistants.** Students are encouraged to participate in HOSA (Health Occupations Students of America) and may participate in fundraising activities for conferences and competitions.

Required immunizations which must be current prior to the first day of school:

- MMR (Measles, mumps, rubella)
- TD (tetanus)
- Hepatitis B (3-shot series)
- PPD (tuberculin) test that is current for the academic school year

**Prerequisites:**

1. Successful completion of Medical Sciences I, CP/AP Anatomy & Physiology, or other CP or AP science course in the 11<sup>th</sup> grade year
2. Excellent attendance
3. Teacher recommendation (Science, Math, or Medical Science I instructor only)

**Class Format:**

**Semester 1:**

This course is offered in a two-hour block that includes classroom work, labs, field trips, and guest speakers.

**Semester 2:**

This course is offered in a three-hour block to include clinical experiences working with patients in a hospital, nursing home, and/or internship site settings. Students must provide their own transportation for clinical experiences. Students enrolled in the 6/7/8 block must provide their own transportation after 8<sup>th</sup> hour second semester.

**Student Requirements:**

1. Students must have 75% or higher in the course curriculum standards and teacher recommendation to continue in this class second semester
2. Business attire is required for presentations, HOSA, and off-site locations. Uniforms are required for clinicals
3. Students are required to have the following items for clinical and internship experiences:
  - a. Wristwatch with second hand
  - b. Black scrub pants (no sweats, leggings, or jeans) and burgundy scrub top
  - c. White or black tennis shoes
  - d. White or black socks
  - e. Plain white shirt to be worn under smock (no print on shirt)

- f. Tattoos must not be visible during clinicals
- g. Appropriate hair color is required during clinicals
- Students are required to complete 50 hours of service learning work in a health care or other approved setting in the community. Students should begin accruing these hours in the **SUMMER** prior to the start of school. (Students accruing 60 hours or more in this time period will be eligible to receive an additional .5 elective credit.)
- Clinical facilities require a criminal background check on each student prior to allowing them to participate in clinical experiences at their facilities. It is the student's responsibility to obtain this background check by an Adams 12 approved agency prior to December 1, 2018. The fee charged by the agency conducting the background check is also the student's responsibility
- Course fee: \$50.00

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE MEDICAL SCIENCES II-CNA:**

*Pharmacist      Physician/Surgeon      Psychologist      Registered Nurse      Veterinarian*

**MEDICAL SCIENCES II EMT-Emergency Medical Technician (Health Science and STEM Pathways)**

12

Credit: 2.0

1 Science-Pathophysiology

1 Fine Practical Arts/Elective

The Medical Sciences II EMT program is designed for the mature, responsible student wishing to investigate health-related careers. Students interested in registering for this program should have a serious interest and long-term goal of employment in the medical field. A strong commitment to the program is necessary to be successful in this class. This program emphasizes character building, strength, honesty, integrity, excellence, leadership, dedication, and service. Course topics include medical terminology, pathophysiology, career exploration, safety practices, ethics, and human relations. All are delivered through classroom, laboratory, and simulated clinical situations. The Medical Sciences II EMT program will provide the foundation for professional opportunities in the medical field, e.g. nursing, athletic trainer, physician, dental, medical records, pharmacy, and emergency medical services. Medical Sciences II EMT provides students with general workplace skills and specific health industry knowledge that can assist them in attaining employment in a variety of entry-level positions within the health care setting, or continue their education at the post-secondary level. This course is exciting, yet not for everyone. It is centered for those students who choose to excel in the field of medically assisting others in the emergency setting. Some class instruction will include rather graphic exercises which include animal organs and their accompanying fluids.

Students are encouraged to participate in HOSA (Health Occupations Students of America), and in fundraising activities for conferences and competitions.

**Prerequisites:**

1. Successful completion of Medical Sciences I, CP/AP Anatomy & Physiology, or other CP or AP science courses in the 11<sup>th</sup> grade year
2. Excellent attendance
3. Teacher recommendation (Science, Math, or Medical Sciences I instructor only)

**Student Requirements:**

- Class uniform (Navy blue cotton slacks or EMS/tactical pants, class issued EMT shirt, black shoes or boots, and dark belt) is required in class and off-site locations

- Students are required to complete 50 hours of service learning work in a health care or other approved setting in the community. Students should begin accruing these hours in the **SUMMER** prior to the start of school. (Students accruing 60 hours or more in this time period will be eligible to receive an additional .5 elective credit.)
- Course fee: \$50.00

**Students in this program will learn the following skills:**

- Demonstrate an understanding of the roles and responsibilities of the EMT
- Demonstrate an understanding of the medical legal aspects
- Determine and record vital signs of a sick or injured person
- Use medical identification devices
- Conduct a primary assessment of problems that are a threat to life if not corrected immediately
- Demonstrate Healthcare Professional BLS (Basic Life Support) procedures
- Recognize and control bleeding
- Recognize and control shock
- Identify and use mechanical aids to breathing
- Provide a secondary assessment of the patient
- Identify musculoskeletal injuries and treat them accordingly and effectively
- Identify the potential for a spinal injury
- Provide emergency evacuation and transfer of a sick and/or injured patient
- Identify and care for patients who need specialized care
- Provide triage to victims of mass casualty incidents
- Recognize life-threatening situations
- Recognize entrapment situations
- Assist with emergency child birth
- Identify critical incident stressors and techniques to effectively deal with them
- Communicate patient information to appropriate authorities
- Effectively communicate, both verbally and non-verbally, with patients of all ages

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE MEDICAL SCIENCES II - EMT BASIC:**

*EMT                  Firefighter                  ER Physician                  Psychologist                  Registered Nurse*  
*Paramedic*

**PRINCIPLES OF ENGINEERING – Project Lead the Way® (STEM Pathway)**

10, 11, 12

Credit: 1

This survey course exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Topics include mechanisms, hydraulics, pneumatics, computer, interfacing, robotics, computer-aided design, electronics, energy, statics, materials, and kinematics. Students develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, document their work, and communicate solutions.

**Counseling Notes:**

1. Students should have a good understanding of basic algebra
2. This course is recommended for students interested in design and engineering
3. Completion of Intro to Engineering is recommended but not required
4. Course fee: \$20.00



## POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN PRINCIPLES OF ENGINEERING PROGRAM:

*Mechanical Engineer    Electrical Engineer    Structural Engineer    Alternative/Renewable Energy Technician*

### **PROSTART (Hospitality, and Business/Public Administration Pathways)**

11, 12

Credit: 2

(Business Management/Culinary Arts/Hospitality/Lodging Related Curriculum)



Do you want to run your own business? Are you a Food Network addict? Do you want a career that allows you to travel the world and learn about new cultures? Do you want to pursue a great job and a successful career in the restaurant, hospitality, or lodging industry? If your answers are yes, then ProStart may be for you.

ProStart is a nationally certified college-prep business management program focusing on the hospitality industry. The ProStart curriculum is a competency based study of business management principles, culinary arts, sanitation, and customer service coupled with industry mentored paid work internships in a broad spectrum of operations.

#### **Content covered in this program:**

- Restaurant and Foodservice Industry History
- Food Safety and Sanitation
- Workplace Safety
- Kitchen Essentials – Professionalism
- Kitchen Essentials – Equipment and Techniques
- Stocks, Sauces, Soups
- Communication
- Management Essentials
- Fruits and Vegetables
- Potatoes and Grains
- Building a Successful Career
- Industry Field Experiences
- Breakfast Foods and Sandwiches
- Nutrition
- Cost Control
- Salads and Garnishes
- Purchasing and Inventory
- Meat, Poultry and Seafood
- Marketing
- Desserts and Baked Goods
- Sustainability in the Foodservice Industry
- Global Cuisine – The Americas
- Global Cuisine – Europe, Mediterranean, Asia, and the Middle East

#### **Counseling Notes:**

1. ProStart is a college-prep program designed to prepare students for college, apprenticeships and careers in the industry. Students may be eligible to receive college credits.
2. An interest in business management, culinary arts, a strong academic background and leadership skills are recommended.
3. ProStart is a BTEC program taught at the Educational Support Center (Ad Bldg) 128<sup>th</sup> & Claude Ct.
4. District transportation is available for HHS, LHS, MRHS, NGHS, THS and Vantage Point students.
5. All students who register for this course will be asked to complete an application that includes a teacher/counselor recommendation, a self-assessment, and an essay. Students may be interviewed.
6. Required:
  - a. Class fee: \$40.00
  - b. Student knife kit: approximately \$35.00
  - c. Personalized chef coat \$15.00
7. Optional:
  - a. FCCLA membership dues \$25.00 and conference costs

**SOME CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE PROSTART PROGRAM:**

<i>Caterer</i>	<i>Chef/Pastry Chef</i>	<i>Executive Chef</i>	<i>Food/Beverage Director</i>
<i>Sous Chef</i>	<i>Event Planner</i>	<i>Hotel General Manager</i>	<i>Restaurant Owner/Manager</i>

**TEACHER CADET I (Human Services & Education Pathway)**

**(Introduction to Teaching)**

11, 12

Credit: 2

1 Fine Practical Arts/Elective

1 English

Teacher Cadet is a college prep program designed for students who have an interest in the field of education and a career objective that includes obtaining a college degree in education or a related field. College credit may be available to students successfully completing the course. The course introduces high school juniors and seniors to the teaching profession. Students will explore how people learn, how schools operate, and what it's like to be a teacher. Teacher Cadets learn through hands-on activities, guest speakers, field trips, classroom observations, research, and job shadowing. Second semester includes student teaching experience. Excellent attendance is critical for success in this course.

**Classroom Learning and Field Experience:**

First semester, the Cadets are in the classroom and school community learning about the teaching profession. Second semester, the Cadets participate in an extended field experience (similar to student teaching). The Cadets work in an elementary or middle-school classroom, according to their expressed interests. The field experience provides an opportunity to observe as well as step into the role of the teacher by assisting the teacher with classroom duties, working with students, and teaching lessons. Cadets develop a professional portfolio that gives them a head-start on college.

All students participate in Family, Career and Community Leaders of America (FCCLA). FCCLA is a national student organization that helps young men and women become leaders and addresses important issues of society today. Students will have the opportunity to develop leadership skills through class and community projects, participate in competitions, and attend conferences.

**Counseling Notes:**

1. Students must have 75% or higher and instructor recommendation to continue second semester. Attendance is an important part of the instructor recommendation.
2. Academic credit for English will be awarded on successful completion of each semester.
3. All students registering for this course are required to complete an application which includes teacher recommendations and a short essay.
4. Students will be responsible for providing their own transportation to some school visits and to the student teaching internships second semester.
5. Course fee: \$40.00.
6. Cadets will also need to purchase the official Cadet shirt - estimated \$15-\$20.
7. Membership fee of \$15.00 for state and national FCCLA.

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE TEACHER CADET PROGRAM:**

<i>Child Care Teacher/Director</i>	<i>Counselor</i>	<i>Elementary/Secondary Teacher</i>
<i>School Administrator</i>	<i>Social Worker/Psychologist</i>	<i>Librarian</i>
<i>Special Education Teacher</i>	<i>Child Advocate</i>	<i>Speech/Language Pathologist</i>
<i>Private Industry Trainer</i>		

## **TEACHER CADET II – Teaching Internship (Human Services, & Education Pathway)**

12

Credit: 2

1 Fine Practical Arts/Elective

1 English

Teacher Cadet II is designed to provide additional field experience, along with in-class activities and support, for those students who have completed Teacher Cadet I. For students who know they want to enter the education profession, this field experience will enhance their experience and understanding of classroom instruction and the challenges facing educators today. The field experience will include seminars and a minimum of 80 hours per semester of classroom time working with a mentor teacher. Field experience placement will consist of two sites, one each semester, to provide a variety of experiences which will be documented in a culminating portfolio.

### **Counseling Notes:**

1. Students must have a minimum of 75% or higher in Teacher Cadet I and instructor recommendation to register for Teacher Cadet II. Attendance is an important part of the instructor recommendation.
2. Course fee: \$40.00
3. Membership fee of \$15.00 for state and national FCCLA.

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE TEACHER CADET PROGRAM:**

*Child Care Teacher/Director*

*Counselor*

*Elementary/Secondary Teacher*

*School Administrator*

*Social Worker/Psychologist*

*Librarian*

*Special Education Teacher*

*Child Advocate*

*Speech/Language Pathologist*

## **VIDEO PRODUCTION I (Arts, A/V Technology, & Communication Pathway)**

10, 11, 12

Credit: 2

This course is an introduction to television, video, and film production. Students are actively involved in creating dynamic video projects using a variety of industry standard software and equipment. To be successful in the course, students are challenged to participate daily in both individual and group projects while maintaining a high level of professionalism. Students learn how to create video and films, and also how to analyze and incorporate all types of techniques into a variety of projects. Students leave with an understanding of how and why media messages are constructed and for what purposes. The following are the expected outcomes:

- Key concepts, principles, and techniques of audio, video, and film production
- Use of equipment, tools, and techniques associated with video production
- Demonstrate and apply the planning process effectively
- Project implementation for television, video, and film
- Investigate career opportunities
- Cultivate necessary workplace skills

### **Counseling Notes:**

1. Knowledge of/or successful completion of classes in Word, PowerPoint, and Excel
2. Course fee: \$40.00

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE VIDEO PRODUCTION PROGRAM:**

*Video Editor*

*Production Designer*

*Video Director*

*Television Production Manager*

## **VIDEO PRODUCTION II (Arts, A/V Technology, & Communication Pathway)**

11, 12

Credit: 2



Advanced video provides the students with real world experience in the field. Each student will be expected to create productions with real clients and situations. This course will focus on advancing the students skills obtained in the Video Production 1 class. The experience gained in this course will match the format and experience of a college course. Advanced techniques will give the student the head start needed to be career ready and employable.

### **Some of the following will be expected:**

- Advanced techniques in videography and cinematography
- Video editing skills will be expected to be near expert/career ready level.
- Projects assigned will be in line with industry expectations and topics
- Pursue industry internship and job opportunities
- Budget, write, produce, and edit complete projects in the commercial, film, corporate, and documentary genres

### **Counseling Notes:**

- 1.) Student will need the pre-requisite of Video Production I and the approval of the Video Production teacher.
- 2.) In-depth knowledge of Adobe Premier Pro/Apple Final Cut Pro, DSLR camera functions and composition, knowledge of Microsoft Office products
- 3.) Course Fee: \$40.00

### **POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE VIDEO PRODUCTION PROGRAM:**

*Video Editor*

*Videographer/Cinematographer/Photographer*

*Scriptwriter*

*Storyboard creator/artist*

*Video producer/director*

## **WELDING TECHNOLOGY I (Manufacturing Pathway)**

10, 11, 12

Credit: 2

This course will provide students with entry-level welding skills. The Welding Technology program provides training in welding safety, oxyacetylene welding and cutting, plasma arc cutting, brazing, soldering, stick welding (SMAW), and MIG welding (GMAW). Students learn to read and make weld prints and sketches. Basic fabrication skills, including the safe use of shop tools, will be learned in conjunction with class projects and personal projects.

### **Counseling Notes:**

1. Course fee: \$40.00
2. Additional supplies include:
  - a. Welding helmet
  - b. Safety glasses
  - c. Welding gloves
  - d. Welding jacket
  - e. Steel-toed boots

**(Specific information about supplies will be provided at the pre-acceptance meeting.)**

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE WELDING PROGRAM:**

*Architect*                      *Auto-Body Specialist*                      *Engineer*                      *Iron Worker*  
*Sheet-Metal Worker*                      *Sculptor*                      *Pipefitter*                      *Machinist*

**WELDING TECHNOLOGY II (Manufacturing Pathway)**



11, 12  
Credit: 2

This course is for students who have demonstrated a strong interest in pursuing a career as a welder. This class will provide students with advanced instruction in Welding Technology including welding safety, oxyacetylene welding/cutting, plasma arc cutting, carbon arc cutting, exothermic cutting, stick welding (SMAW), flux-cored arc welding (FCAW), MIG welding (GMAW), and TIG welding (GTAW). Students will acquire improved skills in print reading and other technical information. Students successfully completing Welding Technology II may acquire an entry-level Welder’s Certification from the American Welding Society.

**Counseling Notes:**

- 1. Welding instructor recommendation is required
- 2. Course fee: \$40.00
- 3. Required safety equipment is the same as Welding Technology I

**POSSIBLE CAREER OPPORTUNITIES FOR STUDENTS ENROLLED IN THE WELDING PROGRAM:**

*Architect*                      *Auto-Body Specialist*                      *Engineer*                      *Iron Worker*  
*Sheet-Metal Worker*                      *Sculptor*                      *Pipefitter*                      *Machinist*

**AFROTC**

9,10,11,12  
Credit: 1

Air Force Junior ROTC is available through a cooperative agreement with Westminster Public Schools (formerly School District 50). Classes are held at Westminster High School. Students are responsible for their own transportation to and from class and there is a \$30 course fee. Interested students should contact the BTEC registrar, at 720-972-5827 for more information or Lt. Col. John Durnford at 303-487-2462.

This course teaches both aerospace studies and leadership/life skills education. Air Force topics include the heritage and development of the Air Force, including its structure, operations, customs, intercommunication skills, drill, and military ceremonies and courtesies. Aerospace topics include the development, history, and impact of flight; aircraft and spacecraft; the environment in which these crafts operate; science of flight, space technology and exploration; national defense systems; and knowledge of aviation, propulsion, and navigation. Global Studies curriculum is also included once every fourth year. This course may be repeated for credit.  
may be repeated for credit.

**Transportation for ROTC is NOT provided by Adams 12.**

## **ACADEMIC COURSE OFFERINGS**

Students **must** be enrolled in a BTEC career and technical program to be eligible for enrollment in BTEC academic courses.

<i>English 11 – American Lit/Comp</i>
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<i>English 12 – Lit/Comp</i>
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***(BTEC English courses meet district graduation requirements.)***

**Please consult with your counselor to verify which courses meet the NCAA Clearinghouse requirements before making final course selections.**

### **ENGLISH COURSES**

#### **ENGLISH 11 (American Lit/Comp)**

11

Credit: 1

This course will focus on the development of literary theme and structure across the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries in the United States in order for students to understand the thematic progression of American literature. Students will participate in a variety of inquiry-based learning activities and verbal activities as well as write narrative, comparative analysis, informative, and persuasive pieces.

#### **Major units of study include:**

- Argument and Inquiry
- Study of Satire
- Thematic Development and Authorial Choices
- Interpretation of Drama: Genre Study
- Comparative Analysis

#### **Counseling Notes:**

1. This course is available only to 11<sup>th</sup> grade students
2. This course meets the district English graduation requirements

#### **ENGLISH 12 (Lit/Comp)**

12

Credit: 1

Students will engage in the study of literary movements to determine how various views affect the interpretation and understanding of literature, including pieces of classical and foundational world literature. They will also understand how works of literature are influenced by the time period in which the author lived and how that influence is reflected in the

work. Students will participate in independent inquiry in which they reflect upon how their choices and actions affect how they are perceived in the world as well as how they are influenced by the time in which they live.

**Major units of study include:**

- Self-Directed Inquiry Project (all-year)
- Introspective and unconventional Lenses
- Historical Lenses
- Critical Lenses

**Counseling Notes:**

1. This course is available only to 12<sup>th</sup> grade students
2. This course meets the district English graduation requirements

***Classes will be offered if there is sufficient enrollment***