

# BURLINGTON TECHNICAL CENTER OFFERINGS



The **Burlington Technical Center** offers high school students the opportunity to develop the technical, academic and employability skills needed to start careers either through employment after high school or by continuing on to college. BTC partners with area businesses and organizations to provide career exploration and develop technical and employability skills through job shadows, internships or paid work experiences.

Students attend the Burlington Technical Center for 2 hours and 15 minutes, either in the morning or the afternoon, and may earn a total of 3 credits each year toward graduation. They are able to return to their home schools for other academic courses needed for high school graduation and/or college admissions. BTC programs are designed to be completed in two years, although some students attend for one year to begin an introduction to a career field. Many programs offer transcribed college credits through dual enrollment programs at Community College of Vermont and Vermont Technical College. Visit the BTC web site at [www.burlingtontech.info](http://www.burlingtontech.info) for additional information and consult your school counselor to see how a BTC program can fit into your schedule.

Students enter BTC programs in their junior year of high school and it is expected that they are performing at grade level and have Basic Academic Proficiencies with a minimum of 10 credits. A profile of a successful student will have 2 English credits, 2 Math credits (1 of which must be Algebra I), 2 Social Studies credits, 2 Science credits and 2 Additional credits. Students should also have basic computer skills.

## **BURLINGTON TECHNICAL CENTER PROGRAMS**

### Business & Technology

Computer Systems

### Health & Services

Criminal Justice

Culinary/Professional Foods

Human Development and Education

Medical and Sports Sciences

### Media & The Arts

Design and Illustration

Electronic Recording Arts

### Industrial Technology

Auto Body and Collision Repair

Aviation Technology

Automotive Science & Technology

Welding/Metal Fabrication

## **COURSES OF STUDY**

All courses are 3.0 credits unless otherwise noted.

### **BTC-826 Auto Body and Collision Repair I**

### **BTC-827 Auto Body and Collision Repair II [SC]**

In this two year program students have the opportunity to prepare for continued studies in the auto body field as they gain entry level employment skills in vehicle body repair and alignment, refinishing, welding techniques, frame and chassis repairs and estimating and management procedures. There is an emphasis on technical skills and knowledge that is associated with auto body craftsmanship. Course work and class experience provide the knowledge needed to grow with the latest technological changes in the auto body field. There is a wide variety of employment possibilities when you have gained the experience this program has to offer. The curriculum utilizes ASE (Automotive Service Excellence) certified instructional materials, a symbol of quality in this industry.

In the first year of the program students gain a broad understanding of the scientific and mathematical principles associated with the use of tools, processes and chemicals used in the field. The curriculum in the second year builds upon knowledge accrued in Auto Body and Collision Repair I. Qualified second-year students may be placed in Co-op jobs at local auto body shops upon approval of the instructor. Students are also encouraged to take part in national competitions through SkillsUSA. Travel and scholarship opportunities are part of the SkillsUSA experience. Qualified students may earn advanced standing at the Baran Institute of Technology and Nashville Auto-Diesel College.

**BTC-822 Automotive Science & Technology I**  
**BTC-823 Automotive Science & Technology II [SC]**

Automotive Science and Technology's rigorous curriculum is designed to prepare students for college and/or career opportunities. Students study scientific principles as they are applied to the design, operation and service of a modern automobile. While a large percentage of graduates pursue further education and careers associated with the automotive industry, others have utilized the electro-mechanical knowledge and skills acquired in the program to begin successful careers in related areas such as; electrical/mechanical engineering, heating/ventilating, plumbing, industrial refrigeration and heavy equipment to list just a few.

In the first year of the program students gain a broad understanding of the scientific principles associated with the mechanical, electrical and hydraulic systems found in the modern automobile. The curriculum includes the following:

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| <b>543</b> Basic auto service maintenance | <b>547</b> Brake service                     |
| <b>544</b> Fuel system analysis           | <b>548</b> Automotive electricity            |
| <b>545</b> Electronic ignition operation  | <b>549</b> Principles of internal combustion |
| <b>546</b> Cooling system repair          | <b>550</b> Basic vehicle service procedures  |

The curriculum in the second year builds upon knowledge accrued in Automotive Science and Technology I including:

- Engine troubleshooting
- Analysis of electrical systems
- Inspection procedures
- Automotive business management

Program policies are geared to prepare students for college and career level expectations: long range assignments; technical writing assignments; comprehensive written tests; public speaking; lab practicals; and collaborative group activities. In addition to program level formative and summative assessments, in order to be considered a program completer the student must pass the State of Vermont's General Service Technician Exam (GST).

Qualified students can earn guaranteed admission status and up to six college credits in the General Motors-Automotive Associates Degree Program at New Hampshire Technical College (Laconia), six college credits at University of Northwestern Ohio, and advanced standing and four credits at New England Institute of Technology.

**BTC-834 Aviation Technology I**  
**BTC-835 Aviation Technology II [SC] [MA]**

High salaries and extremely challenging jobs make Aviation Technology a very attractive career. If you enjoy subjects such as aerodynamics, are fascinated by complex machinery and love aircraft, this is an excellent choice for you. The use of specialized tools to work on aircraft components in the laboratory, and observation in local aviation companies provide the opportunity to become a certified aircraft technician. All training received in this program is FAA approved and is applied to **Airframe and Powerplant (A&P) Certification**. Students who successfully complete the Aviation program at BTC may enroll for additional training in Airframe and Powerplant systems on a tuition basis, which is also available at our facility at the airport. We not only have training sites for Airframe and Powerplant, but also have a maintenance examiner on staff for complete A&P certification and written testing.

This two-year program is designed to provide instruction in a wide variety of skills and knowledge related to the aviation technology field. These areas include basic aircraft maintenance, principles of aerodynamics, flight electronics, troubleshooting, drawing, metallurgy, sheet metal fabrication, physics of flight and trends and careers in the aviation industry. This program exceeds the requirements for Federal Aviation Regulations (FAR) part 147 under certificate number VMQT049K.

Qualified students earn twelve college credits at Embry Riddle Aeronautical University through an articulated agreement or advanced placement at any other FAR part 147 school.

**BTC-760 Computer Systems I**  
**BTC-762 Computer Systems II [SC]**

The first year of the program focuses on PC Hardware and Software Skills, which include Personal computers, Safe lab procedures, Troubleshooting, Operating systems, Laptop computers, Printers and scanners, Networks, Security, Communication skills. After successful completion of Computer Systems I, students are prepared to take the CompTIA A+ Essentials Exam. The curriculum includes the following: The latest hardware and software technologies, Information security skills, Safety and environmental issues, Soft skills for career development, Advanced troubleshooting skills, Preparation for CompTIA certification exams, and Advanced installation of computers, peripheral devices, networks and security components.

The second year of the program is the Cisco Networking Academy. Cisco Networking is designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer-networking field. After successful completion of Computer

Systems II, students are prepared to take the CCENT (Cisco Certified Entry Networking Technician) exam. The Computer Systems II curriculum includes, but is not limited to, the following: Networking terminology and protocols, network standards, cabling, routers, topology, and IP addressing, The use of decision making and problem-solving techniques in applying science, mathematics, communication and social studies concepts to solve networking problems, Proper care and maintenance and use of networking software, tools and equipment, and Local, state and federal safety, building and environmental codes and regulations.

Qualified students can earn a total of 8 credits from Community College of Vermont.

### **BTC-770 Cooperative Education (CO-OP)**

Cooperative Education (CO-OP) is an extension of our technical programs, which enables students to develop both their technical and general employability skills through supervised, planned work experiences with area employers. These work based learning experiences include Career Work Experiences (unpaid short-term internships), Job Shadows, Informational Interviews and Cooperative Career Employment (long term salaried positions).

Our newest and highest level of work-based learning is Student Apprenticeship. This program requires an employment/training commitment of at least one year between the student and the employer and leads to a Certificate approved by the State Board of Education. It can also be linked to a nationally recognized Registered Apprenticeship program and/or a college or other post secondary educational program. These CO-OP services provide our students with invaluable experience and references for college admission or employment, as well as opportunities for career exploration and decision-making. They may also result in permanent, full time employment.

Cooperative education services are individual and flexible. The work experience is planned according to the needs and career goals of the student, the structure of the technical program and the opportunities available in the community. CO-OP may be paid or unpaid, during class or after school, limited or long term. However, all students are evaluated. The CO-OP Evaluation and Learning Plan are used to determine and measure learning and skill development.

Academic credit is given for Cooperative Education experiences based on the length of time students participate in the work experience in addition to their time in class. Typically, students earn 1/2 credit per semester, with a possible maximum of 2 credits. All students who are enrolled in a Technical Program are eligible for CO-OP services. It is our belief that they are an integral part of every program and our goal to provide every student with at least one of these opportunities for work based learning. For more information about Cooperative Education contact Jane Donahue-Holt, Cooperative Education Coordinator at 846-8427.

### **BTC-850 Criminal Justice I**

### **BTC-851 Criminal Justice II [SS]**

The Criminal Justice Program is a college preparatory program that explores careers in Criminal Justice through classroom instruction, pertinent labs, field trips and job shadows. Units of study will include the history of law enforcement, the court system, juvenile law, ethics, criminal law, criminal procedures, interview and interrogation, criminal investigation, and corrections. Practical experiences are provided that enhance classroom learning. Field trips, guest speakers, and use of industry-specific equipment and supplies are an integral part of the curriculum.

Year two focuses on forensics and investigation, to include evidence identification, collection, and analysis. Crime scene investigations involving guest experts and simulated crime scenes allow the students to study modern techniques and procedures in real world scenarios using actual equipment.

Students will have the opportunity to earn valuable certifications, embedded academic credit and college credit. Credentials may include Medical First Responder, Incident Command, CPR and AED, Boater Safety, Firearms, and Hazardous Materials Awareness. Through curriculum instruction and activities students will develop college-level skills in critical thinking, writing, articulation, problem solving and use of the scientific method.

Dual enrollment options at area colleges that provide transcribed college credits are being developed.

### **BTC-772 Culinary/Professional Foods I**

### **BTC-773 Culinary/Professional Foods II [SC]**

Culinary/Professional Foods is designed to introduce students to all aspects of the restaurant and institutional food service industry. Emphasis is on quality food preparation. Instruction includes sanitation, safety, use and care of equipment, basic meal preparation, and front of the house service. Foods prepared are salads, meats, poultry, fish, soups, sandwiches, vegetables, breads and desserts. Students take part in a Career Experience Rotating Co-op program to observe and participate in varied aspects of food service in the school and community. Students are introduced to the world of work including such areas as self-appraisal, finding a job, applications, resumes, interviews, employee evaluation and responsibilities.

**BTC-750 Design and Illustration I**  
**BTC-752 Design and Illustration II [FA]**

If you have creative talent and want to explore careers that will help you use your skills, this course will give you the opportunity. You will enhance your abilities in drawing, photography, and graphic design in a welcoming and encouraging, challenging, and fun environment. This program will help you to:

- Express your creativity
- Practice observational drawing— still life, landscape, and figure
- Build your visual vocabulary, including the Principles and Elements of Design
- Develop computer skills to aid design, using programs such as the Adobe Creative Suite (Photoshop, Illustrator, InDesign)
- Learn how to take photographs based on a specific theme or concept
- Keep a visual journal using a variety of subjects and media
- Develop a critical eye and participate in critiques
- Build a portfolio for further education
- Discover which field of design or illustration is right for you

In addition to the AP Studio Art credits available to all students, qualified students can earn three transcribed college credits through dual enrollment programs with Community College of Vermont.

Prerequisite: Interview and Portfolio Presentation.

**BTC-842 Pre Tech Electronic Recording Arts**

Electronic Recording Arts is offered to 9th and 10<sup>th</sup> grade students during second block and homeroom on either blue or white days. Students will be introduced to all of the technology in the Electronic Recording Arts program with an emphasis on studio production and the daily broadcast of “BHS Today”, the in house news and entertainment show at BHS. Post production using Final Cut Pro will be used to create stories for the “BHS Today” show and other productions.

Prerequisite: Ninth or Tenth Grade standing.....Credit: 1/year

**BTC-840 Electronic Recording Arts I**  
**BTC-841 Electronic Recording Arts II [SC]**

The mission of Electronic Recording Arts is to teach students through teamwork and collaboration to produce a variety of electronic media programs using industry production standards and to acquire the knowledge, skills, and character necessary to become productive members of the workforce and to engage in further education and training. ERA introduces students to non-print media such as television, audio, film and multimedia presentations. Students create numerous projects using the equipment in the ERA Digital Media Lab including Apple iMac computers; digital video editing suites including Final Cut Pro 7; Network Video Toaster; Photoshop; Apple Motion; Lightwave 3D; field and studio cameras and equipment by Canon, Sony, and JVC.

In the first year students are introduced to the following topics: Introduction to Video Production; Ethical, Legal Implications of Video Technology; Video Equipment; Camera Techniques; for Video; Lighting; Computer Graphics; Script Writing; Interview Techniques; Producing; Editing; Animation; and Audio Production-Field and Studio. Students in the second year of the program are able to expand their knowledge through the development and execution of independent projects based on self-interest and the needs of clients from the school and community. Internships with local area producers can be arranged.

Qualified Students are eligible to earn 3 college credits per year through a dual enrollment program with Burlington College.

**BTC-776 Human Development and Education I**  
**BTC-777 Human Development and Education II [SS]**

Human Development and Education is a two-year college preparatory program that meets for just over two hours per day, five days per week. The extensive curriculum prepares students to pursue further education towards careers in education, social work or psychology or to fill entry-level positions requiring understanding of human development and behavior, communication, teamwork and workplace skills. This is a good introductory course for students wishing to pursue a career in education, psychology, social work, childcare or elder care. Students completing this course with a concentration in early childhood education meet state requirements for mid-level positions in that field. Prerequisites for this class include strong computer skills and good written and verbal communication skills.

Students learn many valuable skills in addition to the core curriculum of human development and the exploration of careers in the Human Services field. Many of the assignments are long term and require students to be self-directed, organized and to plan time thoughtfully.

During their first year in the program, opportunities for students include:

- Studying human development
- Teaching in our state licensed, on-site preschool program
- Learning about the Human Services professional
- Applying learned knowledge and observational skills in the assessment of children
- Creating materials used in the profession
- Researching related topics
- Becoming CPR and First Aid certified
- Participation in leadership organizations such as SkillsUSA Vermont

During their second year of the program, students choose an area of concentration in the Human Services field. Those continuing in the study of education continue to work in the on-site preschool program. Students indicating the desire and aptitude are promoted to assistant teachers, eventually leading a team of trainees through daily preschool operations and weekly lesson planning meetings. Those wishing to explore other careers in the field participate in internships in the community. Additionally, all first year requirements continue in the second year.

Qualified students may earn up to nine credits from Community College of Vermont through dual enrollment.

**BTC-780 Medical and Sports Sciences I**  
**BTC-782 Medical and Sports Sciences II [SC]**

The Medical and Sports Sciences Program is a two-year college preparatory program. The rigorous curriculum prepares students to pursue further education towards a career in either the medical or sports sciences.

The two years of the program correlate with a complete Anatomy and Physiology (A & P) course (i.e. Year I covers A & P I, Year II covers A & P II). As we progress through Anatomy and Physiology we will be covering the associated medical terminology, associated diseases (pathologies) as well as evaluation and treatment procedures specific to the body system being covered. Students will participate in laboratory experiences including microscopic analysis, dissection, phlebotomy (blood drawing), massage, microbiology and wound care. Students will also be orientated to medical instruments (i.e. reflex hammers, hot and cold packs, blood pressure cuffs, EKG's, and spirometers,...). Life-like, computerized manikins are used to simulate patients and introduce students to normal and abnormal patient findings. The first year curriculum also includes the study of Human Growth and Development (exploring physical, cognitive and social-emotional development through the life span). Study strategies (including note-taking, textbook reading, studying, test-taking,...) are taught in the early part of the first year and reinforced throughout the duration of the two-year program. Students spend time during the first year program exploring various medical and sports related fields in order to fully understand the details of each of these positions. Students then have the opportunity to observe different medical professionals through clinical observations, in order to identify their own area of interest. In the second year, in addition to the continued study of Anatomy and Physiology, the curriculum also includes an in-depth study of nutrition, including nutritional considerations for the athlete. Students in the second year program are placed in clinical observations in their identified area of interest, allowing them to further opportunity to interact with patients as well as medical/sports professionals.

Because the instructors of the Medical and Sports Sciences Program are adjunct faculty at local colleges, qualified students may earn up to seventeen transcribed college credits (seven credits in the first year and ten credits in the second year) through dual enrollment programs at Vermont Technical College and the Community College of Vermont. Former students have successfully transferred these credits to the colleges and universities they have attended.

**Prerequisite: Biology or Instructor Approval.**

**BTC-832 Welding/Metal Fabrication I**  
**BTC-833 Welding/Metal Fabrication II [MA]**

The welding industry today presents continually growing opportunities for skilled workers. Skilled welders will find jobs in many areas such as transportation, in the building of steel structures, manufacturing and in the construction of earth moving equipment. The first year of the program introduces the student to the fundamentals of SMAW, GTAW and GMAW along with many other welding processes. Instruction also includes print reading, Solid Works and the safe use of small hand and power tools in the field of metal fabrication.

In the second year of the program students learn about metallurgy and gain more in depth knowledge in all welding processes.

Qualified students will have the opportunity to take a test for welding certifications and participate in co-op placements with instructor approval. There are plenty of job opportunities with excellent pay and benefits awaiting the qualified welder.