

cbe.ab.ca

Career and Technology Centre

2025-26 Course Guide



Explore



Achieve



Programs at the Career and Technology Centre are available and open for all students, in all CBE high schools. Contact your school counsellor to add CTC courses to your timetable.

Program Overview

All CBE students may choose to attend the Career & Technology Centre (CTC), regardless of which high school they attend. The CTC provides continuous access to academic, industry-standard programs, certificated journeyperson instructors, facilities and equipment for students seeking credentials in skilled occupations. As part of their high school timetable, students may choose to access explore, specialize or credential-level programs.



Learning from the experts in Culinary Apprenticeship Training

Introductory

Students enrolled at the introductory level complete exploratory or 10 level courses in a variety of clusters that include: Trades, Manufacturing and Transportation, Pre-Engineering, (TMT), Health and Human Resources (HRH), Natural Resources (NAT), and Media, Design and Communication (MDC), and Business, Administration, Finance (BIT).

Intermediate

Students enrolled at the intermediate level complete 20 level CTS courses associated with local credentials and certifications. Examples of this include: Food Safety, Infection Control and Workplace Safety.

Advanced

Students enrolled in the advanced level will receive 30 level CTS credits and may also include certifications. An example is the Esthetics Certification.



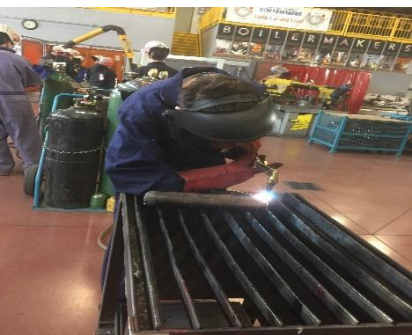
Exploring Alberta with Energy and Environmental Innovation

Credential and Post-Secondary

Students enrolled at the credential level complete first-period technical training courses in support of the journeyman certification in Welding, Hairstyling, Auto Body, Cooking, and Baking. Students are encouraged to challenge the first- period technical exams when their technical training here is complete. The exams are managed and certified by Alberta Industry and Training (AIT).

Students in the introductory courses take single block classes.

Students wishing to register for the Credential programs must fill out and submit the Credential application available via the teacher for that program. Students will be notified of their acceptance into the program.



The CTC's programs are organized around the following Career Clusters:

Trades, Manufacturing & Transportation

- Auto Body | Auto Body Apprentice
- Welding/Fabrication | Welder Apprentice
- Pre-Engineering

Health, Recreation & Human Services

- Cosmetology | Hairstylist Apprentice
| Esthetics Certification
- Culinary Arts | Cook Apprentice
| Baking Apprentice

Business, Administration & Finance

- Business Fundamentals
- Computer Science
- IT Essentials

Natural Resources

- Energy & Environmental Innovation | Environmental Stewardship
| Agriculture
| Energy Resources
| Environmental Science

Media, Design & Communication Arts

- Media, Design & Communication | Broadcast Journalism and Communication
| Film/Video Production
| Audio Production
| Animation





Trades, Manufacturing & Transportation

Auto Body | Auto Body Apprenticeship & Pre-Apprenticeship

If you have a passion for cars or trucks, this is the place for you! Whether you want to learn how to fix a car body for a hobby or as a career, you will have the opportunity to learn how to fix dents, apply body fillers, sand panels, and prep and paint a vehicle. You will start with the basics on your own personal panel that you get to keep at the end of the course! Come back to the intermediate and advanced courses to advance your skills as you work on customer vehicles. Students will learn more advanced repair techniques to prepare for customer service using the following skills: Estimation, Damage Analysis, Repair of multiple panels, Prime/Refinish, Frame Straightening, Plastic Bumpers, Professional Painting. At the Credential level students prepare to write the first year auto body apprenticeship exam. Students learn the following skills: Structural integrity, Damage analysis, Glass, Heavy damage repair, Structural welding, Metal shaping, Repairs to student vehicles or projects, Supported by post-secondary instruction, Training for provincial skills competition. Solid study techniques and self-motivation are required at the Credential level.

Classes and detailed information:

- Introductory (5 credits) single block
- Intermediate (5-10 credits) single or double block
- Advanced (5-10 credits) single or double block
- Credentialed (14 credits) double block



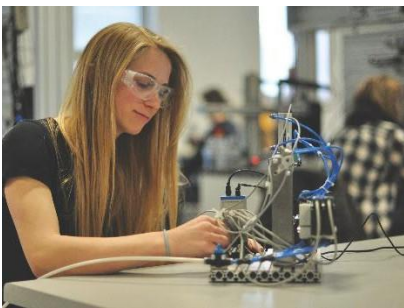
Welding/Fabrication | Welder Apprenticeship & Pre-Apprenticeship

Students in Welding will study metal technologies and learn the fine art of design and metal fabrication. Explore and pre-apprenticeship students learn the knowledge and skills related to the unique techniques of: oxy-fuel welding and cutting, gas metal arc welding, flux core arc welding and shielded metal arc welding. Advanced students will be encouraged to engage in pre-apprenticeship courses that will prepare them to challenge the 1st year apprenticeship theory and practical exams.

Classes and detailed information:

- Introductory (5 credits) single block
- Intermediate (5 credits) single block
- Advanced (5 credits) single block
- Credentialed (15 credits) double block only





Pre-Engineering

Students in Pre-Engineering access a dynamic, state-of-the-art program that provides practical hands-on experiences supported by a range of digital resources. Pre-Engineering involves exploring design and engineering principles through various technologies such as robotics, CAD, rapid prototyping (3D printing, CNC), fluid dynamics, electrical, solar, wind, heat transfer, automation, and/or other technologies. Students will be able to apply their knowledge and skills to solve authentic problems in various fields of engineering such as electrical, chemical, structural and environmental. At the end of the term, students will complete a masters engineering project from initial design phase to prototype in small collaborative groups. The program is delivered by dual credentialed teachers/engineers.

Classes and detailed information:

- Introductory (5 credits) single block
- Intermediate (5 credits) single block, double block with teacher consult
- Advanced (5 credits) single block, double block with teacher consult



Health, Recreation & Human Services

Cosmetology | Hairstylist Apprentice & Esthetics Certification



Students will develop skills and knowledge in a dynamic, full-service salon/spa customer service center. Students will progress through the Introductory, Intermediate and Credential programs that are personalized to the individual student's desired results. Cosmetology is an excellent introduction to many careers that include hairstylist, esthetician, educator, instructor, sales representative, platform artist, and entrepreneur.

Students will explore all aspects of the professional beauty industry including hairstyling, hair color, extensions, competitions, hair cutting/styling, fades, tapers, straight razor shaves, facials, makeup, waxing, lash lifts/tints, brow laminations, brow tints, body therapy, pedicures, manicures, nail art, and gel gloss nails.

At the introductory level, students discover their specific area of interest and examine the opportunity to take a full Hairstylist Program and/or Esthetics Specialization.

Classes and detailed information:

- Introductory (10 credits), single block
- Esthetics Certificate Program (38 credits in the program), double block only
- Intermediate (10 credits toward Credential program) double block only
- Credentialed Hairstylist (completion of the 48 Credential credits) via first and second period apprenticeship, double block only





Culinary Arts | Cook Apprentice & Pre-Apprentice | Baking Apprentice & Pre-Apprentice

Students will have access to an industry-grade food service production and service outlet facility (Edibles Market Café) at the CTC, led by journey-person cooks and teachers. Culinary Arts is a competency-based program of studies to help students explore the Hospitality Industry in a live-action setting including: front of house (customer service at school cafés, marketing assignments and in-house event management) and back of house (food production, inventory and specialized labs). Regular attendance is necessary for success in culinary arts.

Introductory students will work with the Foods program of studies as an introduction to the kitchen, while intermediate students can work on a blended program of Foods, Cook Apprentice and Baker Apprentice modules. All food production will be based on classical cooking principles influenced by current trends in food style and flavours. Students rotate through four main areas of preparation and production; hot foods, cold foods, bakeshop, butchery and hospitality. All students are required to complete customer service hours which may occur outside regularly scheduled class time.

Students who choose to move beyond the core culinary program and start an official apprenticeship will need to apply for a position at the CTC and sign a contract with Alberta Apprenticeship and Industry Training (AIT). Cook Apprentice and Baker Apprentice students need to complete 16 credits for the formal training component of the program, acquire a blue book for industry hours and sign up for the first term exam at the AIT office.

Classes and detailed information:

- Introductory (5-10 credits), single or double block
- Intermediate (5-10 credits), single or double block
- Advanced (5-10 credits), single or double block recommended
- Credentialed (16 credits, as directed by AIT), double block only



Business, Administration & Finance

Business Fundamentals

Build your entrepreneurial skills & knowledge of the business world, by learning to start, manage, and market your very own business venture, providing you



with valuable skills & knowledge to succeed in a competitive market.

Introductory students will develop basic managerial & marketing strategies to analyze businesses and create or improve their value. They will be able to recognize various business goals & targets and apply strategies to achieve them. Students will learn basic financial literacy and accounting practices, to manage the financials of a business. Students will work to turn ideas into reality by planning a personal business venture and learning how to sell (pitch) that business to potential investors.

Intermediate and advanced students will build a more in depth understanding of quality managing, marketing, and financial management strategies, in order to move from the venture planning stage to the implementation stage. (Run the business)

Classes and detailed information:

- Introductory (5 credits) single block
- Introductory (5 credits) single block
- Advanced (5 credits) single block



Computer Science

Students will focus on developing solutions to problems using computers. They will gain skills in developing algorithms, writing programs (in languages such as C or Java) and trouble-shooting their solutions.

The introductory level will focus on structured programming, procedural programming and basic computer science fundamentals in C language. Students will build an understanding of quality coding structure, and use the skills learned to develop a small game to conclude the semester.

The intermediate level will develop skills around data structures, file handling and introduce object-oriented programming while learning more advanced computer science fundamentals in JAVA. Students will use the skills learned to find solutions to real world problems.

The advanced level will further investigate object-oriented programming with the addition of interfaces, inheritance and polymorphism. Students will also explore both iterative and recursive algorithms and apply the skills learned to real world problems.

AP Computer Science resources and assignments will be available at the advanced level, for students who wish to enrich and expand their understanding further, to take the AP exam externally from Central Memorial.

Classes and detailed information:

- Introductory (5 credits) single block
- Intermediate (5 credits) single block
- Advanced (5 credits) single block

IT Essentials 10 & 20 ***New 2025-26***

Credits: 5 CTS Modules

Prerequisite: None

IT Essentials will take place in the newly renovated lab space at the CTC, where students will learn about hardware assembly and disassembly, software installation, computer operations (i.e. building and securing networks), and diagnostics (i.e. exploring PC, network, and database vulnerabilities). This course aims to give students a head-start in a high-demand and high-paying field that offers many specialization and advancement opportunities.

The IT Essentials course focuses on the following topics:

- Computer Systems: Developmental history, Systems Architecture, Hardware, Software, Operating Systems (Windows/Linux)
- Computer Networks: Types of networks (LAN, WAN) Topologies, Standards (Ethernet, Wi-Fi, Bluetooth), Protocols (TCP/IP, HTTPS)
- Cybersecurity: Threats, Network Security, Ethical Hacking
- Databases: Flat-file Databases, Relational Databases, SQL
- Web Development





Natural Resources

Energy and Environmental Innovation

Climate Change, Petroleum Exploration, Sustainability, Farm-to-Table

Students will learn how to become innovative change-makers in both their community and their future industries. Students will be exposed to a range of issues, skills and technologies in fields related to:

- Oil and gas development in Alberta
- Transitions to alternative and renewable energies
- Climate change
- Local food and urban agriculture production
- Community development and urban planning
- Wildlife and biodiversity habitat conservation
- Stewardship of protected lands
- Sustainable architecture
- Water and waste management



The course is designed to be experiential for students. Each semester there are several field-study trips offered where students will travel to work with industry experts in the fields mentioned above. Students will experience the outdoors as a key component to the class.

The rest of the course takes place within an interactive lab setting. Students take care of various gardens, living walls and fish tanks while also working on habitat construction, water, soil and core-rock testing and building design processes.

Once students have been immersed in this broad range of topics, they will have the opportunity to innovate new technology, policies, educational programs or designs meant to improve our society economically, socially and environmentally.



Energy and Environmental Innovation (EEI)

- Introductory (5 credits), single block
 - Intermediate (5 credits) individual path chosen by student, single block
 - Advanced (5 credits) individual path chosen by student, single block

Environmental Social 10: Globalization

- Grade 10 Environmental Social Studies explores multiple perspectives on the origins of globalization and the local, national and international impacts of globalization on identity, lands, cultures, economies, human rights and quality of life. **This dynamic course provides**



an emphasis on globalization's effects on the environment. Students will have the opportunity to earn additional CTS credits related to environmental leadership while working in an interactive lab setting and participating in offsite excursions. The infusion of multiple perspectives will allow students to examine the effects of globalization on peoples in Canada and throughout the world, including impact on Aboriginal and Francophone communities.

Environmental Science 35AP (fees apply) ***New 2025-26***

Credits: 5

Pre-requisite: Bio 20 & Math 20-1 or 20-2

The topics covered in this course will include population dynamics, land and water use (related to agriculture, forestry, mining, fishing, urban development, and global economics), earth sciences and soil sciences, ecosystems, energy resources and consumption, global change, and pollution. Students considering this course should demonstrate an interest in environmental sciences, a willingness to research, collaborate, and participate in fieldwork (outdoors), and the ability to work independently when necessary.



Media, Design & Communication Arts



Media, Design and Communication |

Broadcast Journalism and Communication,
Film/Video Production,
Audio Production

Students of the Film, Audio, and Television Production Program at the CTC have the opportunity to explore media production in a purpose-built studio and editing lab that supports multi-track, multi-camera collaborative production, as well as field production opportunities, including live events.

Students will plan, capture and produce film, video, animation and photojournalism assets using advanced equipment, techniques, and software that are the current standard for post-secondary and commercial facilities. While doing this they will have the opportunity to consult and receive feedback from industry professionals and become aware of related career opportunities in their media of choice.

Areas of specialization are offered and include Broadcast Journalism and Communication, and Film/Video Production. Audio Production can also be pursued within either of these programs, or as a specialized evening option, subject to interest and availability.



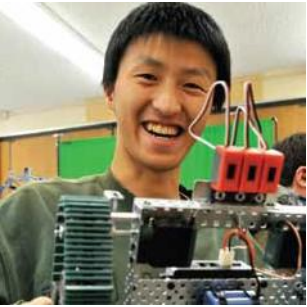
Collaboration on real-world projects is a priority, and student work has appeared on networks such as SHAW Cable.

Classes and detailed information:

- Introductory (5 credits available) single block
- Intermediate (15 credits available) single block
- Advanced (15 credits available) single block



Your pathway to success



Experience

Discover



Career and Technology Studies help students discover their interests and abilities in practical and purposeful ways. CTS is for all students. Whether the goal is to explore different options or pursue more advanced training in a particular field, CTS courses offer students flexibility to expand their career goals and interests.

The Career and Technology Centre (CTC) at Central Memorial High School is a state-of-the-art facility designed to provide our high school students with a wide range of CTS opportunities. The CTC is another way the Calgary Board of Education personalizes learning to help students understand who they are as learners, realize their passions and gifts, and effectively prepare them for life, work and continued learning.



**Calgary Board
of Education**

The Career & Technology Centre
at Central Memorial High School
2336 - 53 Avenue SW
Calgary, AB T3E 1L2
t | 403-
243-4500



Calgary Board
of Education

Career and
Centre