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Career and Technology Centre

2026-27 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 journeyman 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 Apprentice 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). Students in the introductory courses take single block classes.



Exploring Alberta with Energy and Environmental Innovation

Intermediate

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

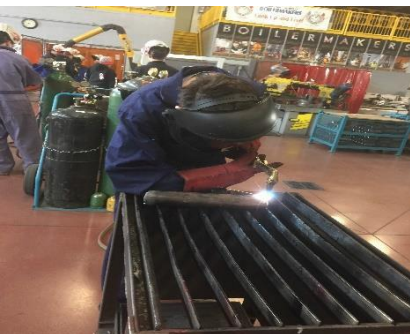
Advanced

Students enrolled in the advanced level will receive 30 level CTS credits and may also include certifications or an AP level course. An example is the Esthetics Certification, AP Computer Science and AP Environmental Sciences.

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 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.



Learning from the journeymen teachers in Welding and Fabrication

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 | Design Thinking
| Electrotechnology

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 | Film and Documentary Journalism
| Audio/Video Production
| Animation
| Graphic Design





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, and 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, and repairs to student vehicles or projects. Students may be supported by post-secondary instruction and training for the 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 only



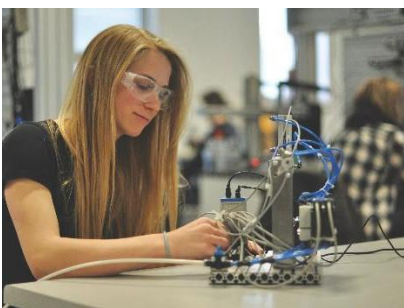
Welding/Fabrication | Welder Apprenticeship & Pre-Apprenticeship

Students in Welding will study metal technologies and learn the fine art of design and metal fabrication. Explore and pre-apprentice 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

Design thinking, Automation, Robotics, Engineering principles

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. After completion of a safety credit, students choose which project areas they would like to explore in design and engineering principles using various technologies such as robotics, CAD, rapid prototyping (3D printing, CNC, laser cutting, design challenges), fluid dynamics, electrical, solar, wind, automation (relays, arduino and PLC control), 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, mechanical, software, structural and environmental. Throughout the term, students will apply the design process to various small design challenges to build capacity in brainstorming, prototyping, collaboration and reflection skills. The term ends with a masters engineering project which moves from the initial design phase to prototype in small collaborative groups. In the intermediate and advanced levels, students can continue to build their expertise in one area (ex automation) or continue to explore different areas to gain a breadth of cross-disciplinary engineering/design thinking skills.

This course has a lot of student choice based on their interests and availability of materials. 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 (26 credits in the program), double block only
- Intermediate (10 credits toward Credential program) double block only
- Credentialed Hairstylist (completion of the 46 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. Typically, these apprenticeship programs take 2 semesters.

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.

Classes and detailed information:

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

IT Essentials

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

Classes and detailed information:

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





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.

Classes and detailed information:

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

Environmental Science 35AP

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.

Classes and detailed information:

- AP Level (5 credits) single block, **Pre-requisite** Bio 20 & Math 20-1 or 20-2



Media, Design & Communication Arts



Media, Design and Communication |

Audio/Video Production, Animation, Film & Documentary Journalism, Photography & Graphic Design

The Media Arts Program is a hands-on, project-based high school course for students interested in film and video production, animation, photography, graphic design, and media arts. This course combines creativity and technical skills to help students learn how stories are told through images, sound, and design in today's media-driven world.

Students build both basic and advanced skills in filmmaking, including camera use, lighting, framing, editing, audio recording, and post-production. Through interactive projects, they explore animation, character design, visual effects and motion graphics, learning how stories are created for film, advertising, and digital media. Photography and graphic design units focus on visual communication and design principles used in fine arts, marketing, journalism, and creative careers.

Students work with professional tools and software, including Adobe Creative Suite, 2D and 3D animation programs, and audio editing software. The class takes place in industry-style spaces such as a professional lighting studio, green screen stage, editing lab, sound mixing rooms, and a recording booth. Students receive hands-on training with professional cameras, microphones, lighting equipment, and a wide range of grip production tools.

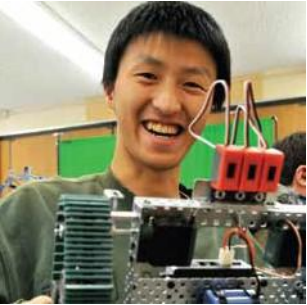
The program emphasizes creativity, teamwork, and critical thinking, reflecting how media is created in professional settings. Students work independently and in groups to plan, create, revise, and present original projects such as short films, commercials, animations, photo essays, and digital portfolios. By the end of the course, students gain strong storytelling and media production skills that prepare them for advanced classes, college programs, or future careers in film, design, animation, motion graphics, journalism, and other media-related fields.

Classes and detailed information:

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



Your pathway to success



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.



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