



DUAL CREDIT PROGRAMMES

Course Descriptions

CAREER OPPORTUNITIES IN TRADE AND TECHNOLOGY (COTT)

Introduction to Industrial Trades

Students are introduced to a variety of machining techniques applicable to the machining and tooling manufacturing sectors such as Tool and Die Maker; Tooling tool Maker; General Machinist; Machine Tool Builder and Integrator; Pattern Maker. Students practice the safe setup and operation of different types of machine tools including: Engine Lathes; Milling Machines; Drill Presses; Pedestal Grinders. Students are taught safe lifting techniques, as well as rigging and hoisting. Students also learn to assemble and disassemble mechanical equipment such as motors, gear boxes etc. Students are exposed to the basic fundamentals of oxy-fuel cutting, brazing and welding, plasma cutting, as well as shielded metal arc welding. Students will be exposed to a variety of different trade discipline experiences to help them to decide what type of trade environment they feel most comfortable with and perhaps would care to pursue as their future career.

Introduction to Construction Trades

Students are introduced to a variety of working techniques applicable to the construction industry such as: Carpentry, framing, dry walling, taping and finishing. They are involved in the building of structures, the installation of wire items including lights, electrical receptacles and switches etc. Students also experience the basic fundamentals of installing plumbing fixtures. Students will be exposed to a variety of different trade discipline experiences to help them to decide what type of trade environment they feel most comfortable with and perhaps would care to pursue as their future career.

Wireless Devices & Mobile Internet

The goal of this course is to orient the student to the broader Information technology community. Students gain a hands-on perspective of the ever changing computer industry, by researching various topics. The research topics are relevant to industry, business, and social communications. Through case studies, presentations, in-class labs and other media, students investigate a variety of current and leading edge topics as they relate to the growth and change in Information Technology. Conducted in a seminar/lab format, students learn from various subject matter experts and also pursue some of their own research in areas of interest.

Electromechanical Engineering

Students study and apply basic concepts and theories in physics and engineering such as thermodynamics, energy, friction, pressure, reflection and refraction. Students are also introduced to lenses, fibre optics and robotics. The course is very practical, with an emphasis on problem solving and hands-on on lab exercises.

Chemical/Environmental Engineering

Students will be exposed to major environmental problems in modern society and potential solutions gained through chemistry. Students study the importance of chemistry in the modern world, the basics of chemical nomenclature, atomic structure, units of measurement, physical and chemical changes, balancing chemical reactions, percent composition, the mole concept reaction stoichiometry. Students also gain introduction to and hands-on knowledge of current environmental and energy issues in society, ecology and the pollution of water, air and land. The course is supported with hand-on labs which are completed on the up to date equipment.

Mechanical/Architecture Drafting

Students learn the language of technical drawings including symbols and types of lines. Students learn about pictorial drawings, for example oblique and isometric. In addition they examine the standard form for orthographic projection, including how to interpret detail engineering drawings. Following these requirements students apply the various types of engineering views coupled with the orthographic projection. Students develop and refine the skills necessary to create free hand sketches and produce accurate scale drawings.

TRADES AND TECHNOLOGY OPPORTUNITIES AND PATHWAYS (TTOP)

WELDING

Manufacturing Trade Safety

Students learn how to work safely in a potentially dangerous environment. Specifically they learn how to identify hazardous conditions and how to prevent work place accidents. Personal, work place machines tools, power tools and welding machinery/equipment safety are emphasized throughout the course. Students learn how to research safety related issues (i.e.: legislation and regulations) using the internet. Students participate in interactive lectures, discussions, demonstrations and role plays. Successful completion of the first aid and CPR training leads to a St. John's Ambulance First Aid Standard plus Level A CPR certification.

Blue Print Reading for Welders

Students learn how to interpret a variety of drawings and schematics typically found in a welding and fabricating environment. Emphasis is placed on drawing interpretation, basic drafting, sketching, and common welding symbols. Specifically, students learn the language of technical drawings including symbols, types of lines and welding symbols. They examine the standard form for orthographic projection, including how to interpret detailed engineering drawings. Students apply the various types of engineering views coupled with the orthographic projection to practical assignments. Students develop and refine the skills necessary to create free hand sketches and produce accurate scale drawings.

Welding and Cutting Processes

Students are introduced to the principles and fundamental processes of arc welding, oxy-fuel cutting, power units and their controls. Emphasis is placed on the safe setup and operation of oxy-fuel welding and cutting equipment. In the labs, students practice with oxy-fuel cutting/welding equipment.

ELECTRICAL

Electrician Pre-Trades Safety 1

Students are taught how to stay safe in a potentially dangerous environment. Students will learn about the common causes of work place accidents, how to foresee and prevent them from happening. Personal and work place safety including: Lifts, ladders, harnesses and explosive tools.

Residential Prints & Standards

In this course students learn to interpret electrical codes, regulations and residential construction drawings. This skill and knowledge will enable them to plan and layout the electrical installation of a typical home. Students are taught how to search for and find the information required to independently complete a material list necessary in the electrical construction of a residential service and the associated branch circuits.

Electrical Construction Skills Training 1

During this course the student will learn to interpret the symbols on schematic diagrams and electrical layout diagrams and match these to typical real world devices. Time spent in the workshop area allows students to develop the skills required for safe and correct electrical connections. This skill and knowledge enables students to plan, layout and build electrical installations found in a typical home. Students develop electrical skills required to enable them to work safely and competently with basic building materials and tools common in residential construction.

PLUMBING

Manufacturing Trade Safety

Students learn how to work safely in a potentially dangerous environment. Specifically they learn how to identify hazardous conditions and how to prevent work place accidents. Personal, work place machines tools, power tools and welding machinery/equipment safety are emphasized throughout the course. Students learn how to research safety related issues (i.e.: legislation and regulations) using the internet. Students participate in interactive lectures, discussions, demonstrations and role plays. Successful completion of the first aid and CPR training leads to a St. John's Ambulance First Aid Standard plus Level A CPR certification.

Mechanical Drafting Fundamentals

This course is designed to help students develop the skills necessary for the interpretation of blue prints. Emphasis will be placed on drawing interpretation, basic drafting and sketching. Students learn the language of technical drawings including symbols and types of lines. Students learn about pictorial drawings, for example oblique and isometric. In addition they examine the standard form for orthographic projection, including how to interpret detail engineering drawings. Following these requirements students apply the various types of engineering views coupled with the orthographic projection. Students develop and refine the skills necessary to create free hand sketches and produce accurate scale drawings.

Plumbing Trade Practice I

Students are introduced to the plumbing practical environment where they become skilled at identifying, selecting, and using various tools and instruments and materials. Students practice preparation/jointing techniques for ferrous/non-ferrous, non-metallic pipes and fittings. In addition, they practice installation techniques. Practical hands-on experience is emphasized; after viewing in-person or video demonstrations, students apply the techniques themselves in a workshop environment.

PRECISION MACHINING

Manufacturing Trade Safety

Students learn how to work safely in a potentially dangerous environment. Specifically they learn how to identify hazardous conditions and how to prevent work place accidents. Personal, work place machines tools, power tools and welding machinery/equipment safety are emphasized throughout the course. Students learn how to research safety related issues (i.e.: legislation and regulations) using the internet. Students participate in interactive lectures, discussions, demonstrations and role plays. Successful completion of the first aid and CPR training leads to a St. John's Ambulance First Aid Standard plus Level A CPR certification.

Mechanical Drafting Fundamentals

Students learn the language of technical drawings including symbols and types of lines. Students learn about pictorial drawings, for example oblique and isometric. In addition they examine the standard form for orthographic projection, including how to interpret detail engineering drawings. Following these requirements students apply the various types of engineering views coupled with the orthographic projection. Students develop and refine the skills necessary to create free hand sketches and produce accurate scale drawings.

Precision Machining Shop Practices

Students are introduced to the applications of machine tools, specifically engine lathes and milling machines, the types of cutting tools and hand tools employed to set-up and safely perform machining operations. In addition, precision measuring techniques and machining processes will be demonstrated. Students will learn to use machine shop/tool room equipment in a safe and efficient manner. Machine tool operations including lathe and milling machines, precision measurement and metal cutting techniques using pedestal grinders; drill presses; hand tools and bench tools are learned to create a variety of metal projects.