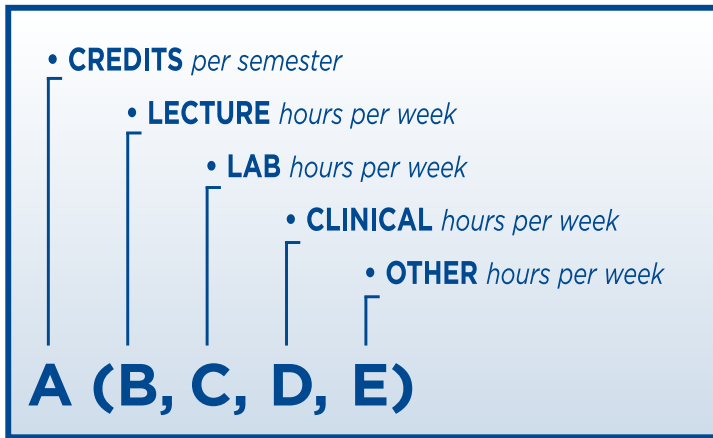


COURSE DESCRIPTIONS

The following course descriptions are intended to briefly describe the nature of each of the courses. For more complete information, departments or faculty can provide specific course syllabuses.

The numbers in the right side of each description define the credits and average weekly contact hours the student will spend in formal classes during a 16 week semester. Classes scheduled for other than a 16 week semester will have the contact hours adjusted accordingly.

- A** – defines the number of semester credits
- B** – average number of lecture hours per week
- C** – average number of laboratory hours per week
- D** – average number of clinical hours per week
- E** – average number of other formal instructional hours per week



In addition to these hours, students are expected to complete homework assignments on their own time. These assignments may include library research, computer utilization, field trips, cultural performances, and other instructional activities.

EXAMPLE

ENG 101 Composition I 3 (3,0,0,0)
3 credits
3 lecture hours
0 laboratory hours
0 clinical hours
0 other hours

APPRENTICESHIP

Environmental and Construction Workers

**APP 102B Introduction to
Apprentice Craft 4 (3,2,0,0)**

Skills in building, utility, heavy highway and environmental fields. Job site safety, first aid/CPR aid, hazard communication, OSHA awareness and human relations. Graded Pass/Fail.

APP 104B General Construction 4 (4,1,0,0)

Job preparation, planning, site and soils preparation. Material handling, storage, vertical/horizontal measuring techniques, transfer of grade points and safety topics. Graded Pass/Fail.

APP 105B Concrete Flat Work 2 (1,2,0,0)

This course covers mathematics, soil preparation and placement/consolidation procedures. Additional topics include set-up/stripping of forms and finishing of horizontal concrete placements. Graded Pass/Fail.

**APP 107B Concrete Walls
and Columns Work 2 (1,2,0,0)**

This course covers mathematics, soil preparation and placement/consolidation procedures for vertical walls and columns. Additional topics include concrete equipment safety and proper hand signals. Graded Pass/Fail.

**APP 108B Body Mechanics
and Fall Protection 1 (1,0,0,0)**

Proper lifting and prying techniques to minimize physical injuries. OSHA subpart M: fall protection standards. Graded Pass/Fail.

**APP 109B Bobcat
Operation and Safety 1.5 (1,0.66,0,0)**

This course will cover the proper and safe operation of a Bobcat using either the front end loader or the backhoe attachment. Graded Pass/Fail.

APP 120B Confined Space Awareness 2 (2,0,0,0)

Definition and recognition of potential hazards involved with working in confined spaces. Air monitoring, protective equipment, evacuation and rescue techniques, OSHA standards and proper documentation. Graded Pass/Fail.

APP 121B Line and Grade 4 (3,2,0,0)

Maintaining elevation/alignment control of heavy highway/civil construction activities. Measurement systems, slope expressions, curb/gutter elevations and quantity calculations. Graded Pass/Fail.

APP 122B Oxyfuel Gas Cutting 4 (3,2,0,0)

Proper and safe use of oxygen and acetylene cutting torches. Various techniques in the construction and demolition field. Graded Pass/Fail.



APP 123B Blueprint Reading for Laborers 3 (3,0,0,0)

Plan reading skills in civil, architectural, structural/mechanical and electrical drawings. Graded Pass/Fail.

APP 127B Rigging and Signaling 2 (2,1,0,0)

Hoisting and signaling procedures, emphasis on load weights, distribution techniques, sling angles and ratios. Graded Pass/Fail.

APP 128B Asphalt 2 (2,1,0,0)

Placement, spreading and compaction of asphaltic materials. Repairing and patching techniques. Graded Pass/Fail.

APP 130B Hazardous Waste Handling for Laborers 4 (3,2,0,0)

Hazard recognition, identification, health effects, decontamination, protective equipment, material handling, storage and sampling techniques. Graded Pass/Fail.

APP 132B Radiation 1 (1,1,0,0)

Properties of radiation, sources of exposure, health effects, and detection instruments. Graded Pass/Fail.

APP 133B Lead Renovator 1 (1,0,0,0)

This course will focus on the approved procedures for identifying lead based paint hazards and minimizing lead dust generation and soil contamination during weatherization, maintenance, renovation and remodeling activities conducted on pre-1978 private housing and public use facilities. Graded Pass/Fail.

APP 134B Lead Abatement 2 (2,1,0,0)

Safe removal procedures for various materials containing lead. Health effects, work practices, disposal procedures, and protective equipment. Graded Pass/Fail.

APP 135B Asbestos Supervisor 2 (2,0,0,0)

This mandatory course meets all OSHA requirements for all workers involved in Class I and Class II asbestos abatement work. The course exceeds EPA's 32 hour minimum course requirements stipulated under 40 CFR Part 763. Graded Pass/Fail.

APP 136B Asbestos Abatement 2 (2,1,0,0)

Hazards, health effects, abatement techniques, safe work practices, protective equipment and regulations pertaining to asbestos removal. Graded Pass/Fail.

APP 137B Pipe Laying (Gravity Flow) 2 (1,2,0,0)

This course covers trenching, shoring and soil types. Additional topics include worker protective systems and confined space entry requirements. Graded Pass/Fail.

APP 139B Pipe Laying (Pressurized) 2 (1,2,0,0)

This course covers installing, joining and testing of pressurized piping systems. Additional topics include worker protective systems, confined space entry requirements and safety inspections. Graded Pass/Fail.

APP 140B Scaffold Building 2 (1,2,0,0)

Basic scaffold assembly in a variety of situations. OSHA standards for scaffolds and ladders. Graded Pass/Fail.

APP 142B Forklift Operations and Awareness 1 (1,0,0,0)

Instruction on forklift operations with emphasis on the rough terrain forklift. Proper operation and maintenance procedures along with OSHA regulations and standards. Graded Pass/Fail.

APP 144B Operation of Motor Driven Power Equipment 1 (1,0,0,0)

This course covers the operation and safety requirements of powered equipment. The OSHA requirements for personal protective equipment and inspection are also covered. Graded Pass/Fail.

APP 146B Operation of Concrete Core Drilling, Saw Cutting and Compaction Equipment 1 (1,0,0,0)

This course covers the operation and safety requirements of powered cutting, core drilling and compaction equipment. Additional topics include OSHA regulations regarding hazardous equipment. Graded Pass/Fail.

APP 150B Mason Tending (Trowel) 2 (1,2,0,0)

This course covers the safety requirements for operator hand signals, vehicle operation and material handling. Additional topics include tool/material identification and tube/coupler scaffolding. Graded Pass/Fail.

APP 152B Plaster Tending (Mixing) 2 (1,2,0,0)

Safety hazards associated with plaster tending and material data sheets are presented. OSHA safety standards for mixing plaster, clean up of plaster mortar, synthetic plaster and additives are covered. Graded Pass/Fail.

APP 160B Miners Preparedness and Awareness 4 (3,2,0,0)

Awareness of hazards and working conditions stressed for workers in mines and tunnel shaft reinforcement techniques. Graded Pass/Fail.

APP 161B Underground Electric Conduit Installation 1 (0,2,0,0)

Terms and definitions. Soil characteristics for type A, B and C soils. Trenching, shoring and excavations. Back-fill compaction techniques. Proper bedding procedures. Graded Pass/Fail.



APP 162B Drilling and Blasting 4 (3,2,0,0)

Operation and safe use of drilling equipment. Explosive blasting agents, caps and layout methods. Graded Pass/Fail.

APP 163B Tunnel and Shaft 3 (2,2,0,0)

The recognition of underground construction hazards and the action following safety standards taken to eliminate them or control them. Graded Pass/Fail.

APP 164B Pneumatic Air Tool Handling 2 (0,4,0,0)

Operation, storage, maintenance and protective equipment relating to air tools common to construction sites. Graded Pass/Fail.

APP 165B Rock and Water 1 (0,2,0,0)

Mixing of plaster mixes and application to semi-structural and structural fabricated wire mesh. Use of latex molds and installation of prefabricated artificial rock sections. Graded Pass/Fail.

APP 166B Mine Rescue 1 (1,0,0,0)

Mine safety and proper techniques for first responder. First aid and rescue procedures for mine and tunnel shaft workers. Graded Pass/Fail.

APP 167B Drywall Stocking 1 (0,2,0,0)

Calculating square footage by reading the blueprint as to the amount of drywall needed in a particular room and stocking it there. Graded Pass/Fail.

APP 168B Microbial Remediation 1 (1,0,0,0)

Safe abatement procedures for bacterial growth in walls and framework of buildings. Graded Pass/Fail.

APP 169B Landscaping 1 (0,2,0,0)

Proper use of hand tools and machinery related to sprinkler trenching. Techniques in using solvents and solvent cements as it applies to sprinkler installation. Graded Pass/Fail.

APP 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Laborers trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

APP 200B OSHA for Laborers 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Laborers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders and scaffolding. Graded Pass/Fail.

APP 212B Foreman Preparedness 2 (2,0,0,0)

This course provides prospective foreman the human relations skills and leadership techniques needed in the construction industry. Topics include communication, project organization and problem solving. Graded Pass/Fail.

APP 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Laborers trade. Graded Pass/Fail.

APP 263B Weatherization Installation Technician 5 (4,2,0,0)

Building Science is detailed. Sealing the building envelope is demonstrated. Insulating and sealing ductwork is displayed. Installing insulation is illustrated. Graded Pass/Fail.

APP 266B Weatherization Supervisor 3 (3,0,0,0)

Inspecting and monitoring the job site is detailed. Diagnostic testing procedures are demonstrated. How to conduct and interpret combustion appliance safety and efficiency tests is illustrated. Graded Pass/Fail. Prerequisite: APP 263B.

APP 269B Weatherization Energy Auditor 3 (3,0,0,0)

This course covers the selection, use and operation of diagnostic equipment for energy efficiency. Job planning, material selection and interpreting diagnostic results are also covered. Graded Pass/Fail. Prerequisites: APP 263B, and APP 266B.

Heat and Frost Insulators

ASB 101B Asbestos Worker I 4 (3,2,0,0)

Understanding and competency in applied math for insulators, labor history and fundamental insulation for piping.

ASB 102B Asbestos Worker II 3 (3,0,0,0)

Understanding and competency in vapor barriers and construction safety.

ASB 111B Asbestos Worker III 3 (3,0,0,0)

Understanding and competency on a higher level in construction safety and applied math for insulators.

ASB 112B Asbestos Worker IV 5 (4,2,0,0)

Understanding and competency in fundamental insulation of equipment.

ASB 120B Asbestos Worker V 4 (3,2,0,0)

Understanding and competency in advanced metal jacketing for piping.

ASB 121B Asbestos Worker VI 4 (3,2,0,0)

Understanding and competency in advanced metal jacketing for equipment.

ASB 150B Environmental Survey 2 (1,2,0,0)

This course introduces the student to the operation and analysis of thermal images produced by an Infrared Thermal Camera. Topics include software used and report analysis created by the system. Graded Pass/Fail.



ASB 160B Environmental Survey II 2 (1,2,0,0)

This course focuses on advanced facility inspections and infrared images to collect data and create Energy Insulation Survey reports. Prerequisite: ASB 150B. Graded Pass/Fail.

ASB 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Heat and Frost Insulators trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

ASB 201B Asbestos Worker VII 6 (5,2,0,0)

Understanding and competency in removable insulation design, blueprint codes and specifications.

ASB 202B Asbestos Worker VIII 6 (5,2,0,0)

Understanding effective supervision and all aspects of construction safety.

ASB 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Heat and Frost Insulators trade. Graded Pass/Fail.

Bricklayers

BRL 101B Bricklayers' Apprentice I 4 (2,4,0,0)

Labor/management relations, math, safety, clothing and tools. Materials and equipment. Basic tool/mortar manipulation for spreading, buttering and mason tending. Overhand and veneer bricklaying.

BRL 102B Bricklayers' Apprentice IB 4 (2,4,0,0)

Laying 8"x4", 4"x8", and 8"x8"x16" block. Working masonry veneer with 4"x4"x16", 4"x8"x16" block and brick. Math and safety.

BRL 105B OSHA/First Aid/CPR for Bricklayers 3 (3,0,0,0)

Standards pertaining to construction. Techniques of administering first aid and cardiopulmonary resuscitation. Graded Pass/Fail.

BRL 151B Bricklayers' Apprentice II 4 (2,4,0,0)

Erecting brick masonry veneer. Working the brick and block leads, corners and piers. Math and safety.

BRL 152B Bricklayers' Apprentice IIB 4 (2,4,0,0)

Working the masonry wall with 4" brick and brick/block cavity. Working the mechanical wall using 4" brick/block and 8"x8"x16" block. Math and safety.

BRL 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Bricklayers' trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

BRL 201B Bricklayers' Apprentice III 4 (2,4,0,0)

Laying pavers using the one and two step method. Building regular and heat form fireplaces. Masonry arch construction using basic block. Math and safety.

BRL 202B Bricklayers' Apprentice IIIB 4 (2,4,0,0)

Masonry arch construction using basic block. Rake wall/chimney off methods for masonry veneering. Radius wall method using glass block or brick. Math and safety.

BRL 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Bricklayers' trade. Graded Pass/Fail.

Cement Masons

CMA 111B Cement Mason Apprentice I 4 (3,2,0,0)

Identify and employ proficiency using various hand tools for repairing concrete surface defects or finishing concrete. OSHA 10 is presented along with safety procedures while operating on scaffolds, scissor and/or boom lifts.

CMA 112B Cement Mason Apprentice IB 3 (2,2,0,0)

Identify and demonstrate treatment methods in repairing concrete surface defects. First aid/CPR are demonstrated and practiced. Sexual Harassment Prevention I and Respirator Fit are presented.

CMA 141B Cement Mason Apprentice II 3 (2,2,0,0)

Using levels and transits to determine site layout to include drives, approaches, curbs, and gutters are demonstrated and practiced. Calculate and apply measurements in forming steps to specifications.

CMA 142B Cement Mason Apprentice IIB 4 (3,2,0,0)

Fundamental math, estimating, measuring, and blueprint reading are presented and practiced. Proficiency in first aid/CPR is repeated. Sexual Harassment Prevention II is presented. Hard troweled floors and decorative saw cutting are demonstrated.

CMA 201B Cement Mason Apprentice III 3 (2,2,0,0)

Structural repairs including epoxy injection and the use of power screeds are demonstrated and practiced. Various floor finishes including stenciling and imprinting designs on concrete are demonstrated and practiced.

CMA 202B Cement Mason Apprentice IIIB 4 (2,4,0,0)

Application of chemical staining/sealants, along with operating a troweling machine and rough terrain forklift are demonstrated and practiced. Pervious and other concrete finishes are demonstrated and practiced. Proficiency in first aid/CPR is repeated.



CMA 251B Cement Mason Apprentice IV 3 (2,2,0,0)

Demonstrate curing and other protection methods of wet concrete. Develop working knowledge of shotcrete, abrasive blasting, epoxy floors and special coatings. Tilt-up panels and underlayment/overlayment processes are also discussed.

CMA 252B Cement Mason Apprentice IVB 4 (3,2,0,0)

OSHA 30 is presented along with safety procedures while working on scaffolds, scissor, and/or boom lifts. Develop working knowledge of soil conditions and sub-grade preparation. Certify ACI Flatwork Finisher and Technician.

Carpenters

CPT 102B Orientation 2 (2,0.66,0,0)

This course provides an overview of the construction industry, safety, and green building awareness. Successful students will receive OSHA 10 certification and UBC qualification cards.

CPT 104B Safety and Health Certifications 2 (2,0.66,0,0)

This course covers the safe and appropriate use of scaffolds, aerial lift equipment, and emergency response procedures. Successful students will receive First Aid and CPR certification and UBC qualification cards.

CPT 105B Basic Wall Framing 1.5 (1.33,1.33,0,0)

This course presents the theory, methods, and procedures required to frame basic walls. Hands-on practice using proper tool techniques and appropriate materials will enhance fundamental skill development.

CPT 107B Print Reading 2 (2,0.66,0,0)

This course introduces basic visualization skills needed for reading and interpreting construction prints. Views, elevations and the role of specifications as they relate to prints will be discussed.

CPT 109B Basic Roof Framing 1.5 (1.33,1.33,0,0)

This course provides an introduction to basic gable roof framing, terminology and construction characteristics. Students will interpret print views and drawing elevations for job planning, and to determine rafter systems and layout details.

CPT 111B Wall Forming 1.5 (1.33,1.33,0,0)

This course provides forming methods for reinforced concrete walls. Blueprint reading, estimating, introduction to form design, and hands-on single and double-waler forming projects are included in training.

CPT 113B Doors and Door Frames 1.5 (1.33,1.33,0,0)

This course covers the installation process from constructing rough openings to hanging and adjusting doors. An emphasis will be placed on print interpretation, door schedules, symbols, and hardware recognition.

CPT 115B Transit Level/Laser 2 (2,0.66,0,0)

This course covers the terminology, optical principles, and operating procedures for the transit and laser levels. Students will set up levels, determine benchmarks, take and record elevation readings.

CPT 117B Foundations and Flatwork 1.5 (1.33,1.33,0,0)

This course covers the design and function of several types of foundations and concrete flatwork. The methods, techniques and procedures for formwork layout, elevation, and construction will be presented.

CPT 119B Bridge Construction 1.5 (1.33,1.33,0,0)

This course provides students with an overview of basic bridge construction. Descriptions for exterior and interior girders, edge forms, bulkheads and hinge forms will be presented.

CPT 121B Stair and Ramp Forming 1.5 (1.33,1.33,0,0)

This course provides the students with the methods, procedures and practices used to form stair and ramp structures. State and Federal building codes pertaining to stairs and ramps will be covered in this class.

CPT 123B Beam and Deck Forming 1.5 (1.33,1.33,0,0)

This course will introduce the use of various woods, and patented forming systems for construction of concrete beams and decks. Students will identify formwork types and installation techniques including calculating materials and setting beam and deck forms.

CPT 125B Cabinet Millwork and Assembly 1.5 (1.33,1.33,0,0)

This course details cabinetry fabrication from design and function, through the complete production process. An emphasis will be placed on print interpretation, job planning and proper construction sequence.

CPT 127B Commercial Floor Framing 1.5 (1.33,1.33,0,0)

This course covers floor joist construction and the various installation techniques used within the commercial industry. Students will interpret floor plans for job planning, interpretation of the applicable floor joist system and to calculate material take offs.



CPT 129B Advanced Print Reading 2 (2,0.66,0,0)

In this course, students will analyze multi-view drawings to determine construction type, locate benchmark, find building element and review codes, references, and perform calculations for construction purposes.

CPT 131B Cabinet Installation 2 (2,0.66,0,0)

This comprehensive course covers cabinet installation from establishing the design layout to attaching countertops. An emphasis will be placed on print interpretation, job planning, and proper installation sequence.

CPT 133B Moldings and Trim 1.5 (1.33,1.33,0,0)

This course covers how moldings and trims are utilized to finish exterior and interior construction design features. The tools and techniques for cutting, coping and installing various molding and trim types are presented.

**CPT 135B Tilt-Up
Panel Construction 1.5 (1.33,1.33,0,0)**

This class will cover layout techniques on a typical tilt-up panel and the importance of layout methods in squaring a panel. Identifying specific openings and the location of finish floor lines and roof lines through blueprint reading will be included.

CPT 137B Rigging 2 (2,0.66,0,0)

This course presents both lifting theory and practical rigging methods and procedures. Rigging attachment procedures, lifting equipment, limits of operation and communication practices will be covered. Successful students will receive UBC rigging qualification cards. Graded Pass/Fail.

CPT 139B Solar Installer I 1.5 (1.33,1.33,0,0)

This course covers the design and function of several types of solar installation. The methods, sequences and procedures for mounting layout, elevation/positioning, and assembly for solar construction will be presented.

CPT 141B Basic Metal Framing 1.5 (1.33,1.33,0,0)

This course provides an overview of residential metal framing theory and construction techniques. Students will interpret prints for job planning and to estimate materials.

**CPT 143B Doors and
Door Hardware 1.5 (1.33,1.33,0,0)**

This course covers the installation process for several types of security and exit door hardware. Discussion of electrical and card reader systems will be included. An emphasis will be placed on print interpretation, codes, door schedules, symbols, and hardware recognition.

**CPT 145B Scaffold Erector
Qualification 2 (2,0.66,0,0)**

This course will cover the basic techniques and procedures associated with frame, system, and tube/clamp scaffold components. Successful students will receive UBC qualification card.

CPT 147B Trade Show 1.5 (1.33,1.33,0,0)

This course will introduce technical installation and social skills pertaining to the trade show industry. Students will identify configurations and install components for selected types of booths.

CPT 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Carpenters trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

CPT 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Carpenters trade. Graded Pass/Fail.

CPT 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Carpentry trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

Drywall Applicator

DWA 101B Orientation 2 (2,0.66,0,0)

This course provides an overview of the construction industry, safety and green building awareness. Successful students will receive tool certification and UBC qualification cards.

**DWA 103B Safety and
Health Certifications 2 (2,0.66,0,0)**

This course will provide safety and health training that meets the needs of the interior systems industry. The content of the course will include certification in Power Industrial Trucks, Aerial Lift, American Red Cross First Aid/CPR/AED and OSHA 10.

DWA 105B Basic Metal Framing 1.5 (1.33,1.33,0,0)

Designed to familiarize students with light gage steel products used in the interior systems industry, this course identifies safe tool use, framing materials, various trims and installation techniques.

DWA 107B Print Reading 2 (2,0.66,0,0)

This course introduces basic visualization skills needed for reading and interpreting construction prints. Views, elevations and dimension calculations will be used to complete basic layout for various types of commercial projects.



DWA 109B Basic Lathing 1.5 (1.33,1.33,0,0)

This course introduces basic lathing materials and tools used in the industry for exterior/interior installations. Tool safety, waterproofing, lath and trim application procedures will be explained and demonstrated.

DWA 111B Drywall Application 1.5 (1.33,1.33,0,0)

This course will focus on the needed skills to properly handle and install drywall used in specialized applications including fire resistance and sound control.

**DWA 113B Drywall Installation/
Finish Trims 1.5 (1.33,1.33,0,0)**

This course will introduce drywall handling methods, applications and recommended levels of drywall finish to achieve the desired esthetics. An emphasis will be placed on trim attachment and finishing techniques.

**DWA 115B Framing
Ceilings and Soffits 1.5 (1.33,1.33,0,0)**

This course identifies various applications and materials used for fire rated walls, ceilings and soffits. Methods and procedures used for layout and template development, drywall and trim attachment are covered.

**DWA 117B Framing
Curves and Arches 1.5 (1.33,1.33,0,0)**

This course provides instruction in framing methods for curves and arches and their related structural limitations. Identify the various wall and ceiling types, layout principles and materials used for each. Lath applications and trim are also presented.

**DWA 119B Framing
Suspended Ceilings 1.5 (1.33,1.33,0,0)**

This course identifies the materials used for various types of suspended ceilings and drywall grid systems. The principles of suspension layout, suspension methods and attachment procedures will be presented.

**DWA 121B Advanced
Metal Framing 1.5 (1.33,1.33,0,0)**

This course will begin with a quick review of basic metal framing followed by detailed procedures for framing curved, serpentine and elliptical non-load bearing partitions.

DWA 123B Advanced Lathing 1.5 (1.33,1.33,0,0)

This course presents advanced methods and application techniques for lath and trim products used on exterior/interior metal framing.

**DWA 125B Drywall/
Acoustical Ceilings 1.5 (1.33,1.33,0,0)**

This course identifies the materials and methods used for the installation of acoustical ceilings. Seismic codes, materials and requirements are covered along with installation procedures for various grid systems.

DWA 127B Advanced Print Reading 2 (2,0.66,0,0)

This course will provide in-depth training for on-the-job print reading scenarios. The role of specifications and the importance of codes and regulations will be presented.

DWA 129B Free-Form Lathing 2 (2,0.66,0,0)

This course provides a comprehensive study of the theory and techniques used for the development of free-form lathing projects, including design and cage work development.

**DWA 131B Light Gage
Welding - AWS 2 (2,0.66,0,0)**

The content of this course will focus on written and performance test requirements. Test plates for AWS performance testing will be produced. Successful students will receive AWS D1.3 Light Gage Certification.

**DWA 133B Firestop/Fireproofing
Procedures 2 (2,0.66,0,0)**

This course will focus on the correct methods, technical skills and fireproofing materials required in the work place today. Strict building codes mandate the importance of certified training.

**DWA 135B Reinforced
Substrate Installations 1.5 (1.33,1.33,0,0)**

This course will present the applications, techniques and product considerations typical of reinforced substrate installations. The training will focus on Glass Fiber Reinforced Gypsum (GFRG) and Glass Fiber Reinforced Concrete (GFRC) products.

**DWA 137B Scaffold Erector
Qualification 2 (2,0.66,0,0)**

This course will cover the basic techniques and procedures associated with frame, system and tube/clamp scaffold components. Successful students will receive UBC qualification card. Graded Pass/Fail.

**DWA 139B Light Gage
Welding - AWS A 1.5 (1.33,1.33,0,0)**

This course covers AWS light gage welding methods, codes and techniques. Hands-on experience will reinforce proper use of the welding procedures.

**DWA 141B Exterior Insulation
Finish Systems - EIFS 1.5 (1.33,1.33,0,0)**

This course is an introduction to exterior insulation finish systems including terminology, definitions and specifications. Reinforcing mesh, insulation board installation and application methods for primers and finishes will be covered.

**DWA 143B Door and
Door Frames 1.5 (1.33,1.33,0,0)**

Designed as an introduction to the doors and door frames used in the interior systems industry, the course discussions will incorporate applicable regulation governing door openings and door selection.



DWA 145B Transit Level/Laser 2 (2,0,0.66,0,0)

This course covers the terminology, optical principles and operating procedure for transit and laser levels. Students will set up levels, determine benchmarks and take and record elevation readings.

DWA 147B Basic Hand Finishing 1.5 (1.33,1.33,0,0)

This course develops basic hand finishing skills using the correct tools and materials. The training will include a description of finishing levels, hand tool manipulation, material identification, selection and mixture preparation.

Drywall Finishers

DWF 101B Orientation 1.5 (1.33,1.33,0,0)

This course provides an overview of the construction industry, safety and green building awareness. Successful students will receive tool certification and UBC qualification cards.

DWF 103B Safety and Health Certifications 1.5 (1.33,1.33,0,0)

This course will provide safety and health training that meets the needs of the interior systems industry. The content of the course will include certification in Power Industrial Trucks, Aerial Lift, American Red Cross First Aid/CPR/AED and OSHA 10.

DWF 105B Basic Hand Finishing 1.5 (1.33,1.33,0,0)

This course develops basic hand finishing skills using the correct tools and materials. The training will include a description of finishing levels, materials and mixture preparation.

DWF 107B Print Reading 1.5 (1.33,1.33,0,0)

This course introduces basic visualization skills needed for reading and interpreting construction prints. View, elevations and dimension calculations will be used to complete basic layout for various types of commercial projects.

DWF 109B Automatic Finishing Tools 1.5 (1.33,1.33,0,0)

This course will present basic automatic tool techniques and introduce finish schedule interpretation. Hands-on instruction with machine tools and the importance of proper use, assembly and breakdown will be included.

DWF 111B Finishing Trims 1.5 (1.33,1.33,0,0)

In this course an emphasis will be placed on trim attachment and finishing techniques. Local sources and waste reduction will be discussed.

DWF 113B Advanced Hand Finishing 1.5 (1.33,1.33,0,0)

This course will focus on advanced methods and applications using hand tool techniques. Emphasis on proper sequence of operation, phases and materials to be used in order to produce a higher level finished product to industry standards.

DWF 115B Ceiling and Soffit Finishing 1.5 (1.33,1.33,0,0)

This course is designed to provide an advanced level of finishing skill for applications with architecturally detailed ceilings and soffits.

DWF 117B Advanced Automatic Finishing Tools 1.5 (1.33,1.33,0,0)

This course will advance the methods, applications and sequences of the bazooka, skim boxes, nail spotters, angle boxes and emphasis ergonomics.

DWF 119B Decorative Trims 1.5 (1.33,1.33,0,0)

This course provides advanced hand and automatic tool finishing techniques used to apply decorative trims. Special attention will be given to specialty trim installation sequence and waste reduction.

DWF 121B Wet Wall Finishes 1.5 (1.33,1.33,0,0)

This course will present the industry application methods and product mediums typically used for wet wall finishes. Selection and use of painting equipment and low VOC coatings will be included in the training.

DWF 123B Machine and Hand Applied Textures 1.55 (1.33,1.33,0,0)

This training includes product information for texturing materials and application techniques. Special attention will be given to exploring environmentally safe products and materials.

DWF 125B Drywall Application and Scaffold Safety 1.5 (1.33,1.33,0,0)

This course will focus on environmentally safe materials and the needed skills to properly handle and install drywall. Scaffold set up and safe use will be emphasized in the hands-on activity.

DWF 133B Firestop/Fireproofing Procedures 1.5 (1.33,1.33,0,0)

This course will focus on the correct methods, technical skills and fireproofing materials required in the work place today. Strict building codes mandate the importance of certified training.

Electrical

ELEC 111B Electrical Apprentice I 4 (3,3,0,0)

History and structure of the I.B.E.W. Introduction to mathematics, tools and materials. Fundamentals of electron theory and job-site safety requirements are also discussed.

ELEC 112B Electrical Apprentice II 4 (3,3,0,0)

Introduction to basic electrical circuits. AC and DC current generation systems are discussed. Fundamentals of single phase and multiphase circuit wiring are introduced.



ELEC 115B Residential Apprentice I 4 (4,0,0,0)

Trade history, safety, identification of tools, equipment, materials, knot tying and the National Electrical Code. Mathematical electron theory, Ohm's Law, circuits, switches, receptacles, fasteners and conduit bending.

ELEC 116B Residential Apprentice II 4 (4,0,0,0)

Resistance in DC series, parallel and combination circuits. Current reactions, voltage functions and power calculations. Wire sizing, insulation properties, switches, multiple wire and phase systems.

ELEC 117B Residential Apprentice III 4 (4,0,0,0)

Job costing and drawing structured wiring systems. Comparing DC and AC, AC resistance, inductance and capacitance. Transformer principles, electromagnetism, and generators. Branch and appliance circuits.

ELEC 118B Residential Apprentice IV 4 (4,0,0,0)

Wiring methods, cable assemblies. Identifying boxes, fillings, panel boards, bending, grounding, watt-hour meters. Motor circuit calculations. AC/heating thermostats, furnace controls and wiring systems.

ELEC 119B Residential Apprentice V 4 (3,3,0,0)

Over current protection using fuses/circuit breakers. Electrical load calculation. Telephone systems, circuitry, wiring, ISDN connections and cabling. Sound systems, air conditioning/refrigeration and motors.

ELEC 120B Residential Apprentice VI 4 (3,3,0,0)

Home automation including pools and fountains. Security systems and alarm sensors. Solar power generation. Fire alarms and smoke detectors. Fiber optic installation.

ELEC 121B Electrical Apprentice III 4 (3,3,0,0)

National Electrical Code, mathematics of AC circuits, branch circuits, electrical testing, general lighting (incandescent and fluorescent), inductance, rectifiers and industrial safety.

ELEC 122B Electrical Apprentice IV 4 (3,3,0,0)

Introduction to transformer theories and applications. Principles of motor control and fire alarm systems are discussed. Safety topics and rigging requirements are covered.

ELEC 127B Mobile Equipment Safety 1 (1,0,0,0)

Mobile equipment safety procedures pertaining to work platforms, lift trucks and aerial boom lifts. Graded Pass/Fail.

ELEC 131B Electrical Apprentice V 4 (3,3,0,0)

Wiring systems, power factors, AC motors, control circuits, protective devices and safety.

ELEC 132B Electrical Apprentice VI 4 (3,3,0,0)

Three phase voltage and current relationships, Class I, II and III installations, circuit analysis, troubleshooting, fluorescent lighting and ballasts, National Electrical Code, first aid and safety.

ELEC 137B OSHA 30 2 (2,0,0,0)

OSHA policy and procedures pertaining to fall protection, electrical safety, materials handling, excavations, confined space, ladders, stairways, scaffolding, personal protective equipment and hazard communication. Graded Pass/Fail.

ELEC 141B Electrical Apprentice VII 4 (3,3,0,0)

The National Electrical Code is discussed. Additional topics include basic electronic circuit components, emergency lighting circuits and leadership development.

ELEC 142B Electrical Apprentice VIII 4 (3,3,0,0)

Special transistor circuits, static control logic circuits, instrumentation (electricity, temperature and pressure), static control circuit analysis.

ELEC 150B Electrical Apprentice IX 4 (3,3,0,0)

Human relations, low voltage, process control, telecommunication and high voltage testing.

ELEC 152B Electrical Apprentice X 4 (4,0,0,0)

Air conditioning/refrigeration, cable faults, UPS and programmable logic controllers.

ELEC 161B Installer/Technician Apprentice I 4 (3,3,0,0)

Math covering fractions, decimals, metric system, powers of ten and algebra. The structure of matter, electron theory, Ohm's Law, resistance/current/voltage/power in series circuits.

ELEC 162B Installer/Technician Apprentice II 4 (3,3,0,0)

Voltage resistance, current, power in parallel circuits, wire properties, conductor insulation, cabling and transmission, unshielded/shielded twisted pair cables and coaxial cabling systems. Fiber optics.

ELEC 163B Installer/Technician Apprentice III 4 (3,3,0,0)

DC combination circuits, voltage polarity and drops. DC comparison to AC. Three phase systems, magnetism and electromagnetism. Telephone circuitry/cabling and analog vs. digital signals.

ELEC 164B Installer/Technician Apprentice IV 4 (3,3,0,0)

Horizontal and backbone cabling. Grounding and banding. Network cabling and terminal-to-host computer networks. Servers, hubs, routers and bridges. Paging systems and telephone system interface.



ELEC 165B Installer/Technician Apprentice V 4 (3,3,0,0)

Inductive capacitive reactance, Kirchoff's Law, Thevenin's/Norton's theorems. Semiconductor diodes. Transistors, oscillators, integrated circuits, radio receivers, CCTV security systems. Video signal transmission, monitors, and recorders.

ELEC 166B Installer/Technician Apprentice VI 4 (3,3,0,0)

Camera pan/tilt mechanisms and housings. Video motion detectors and electronic image splitting. Doors, gates, turnstiles and electric locks. Home automation and nurse call systems.

ELEC 171B Sign Apprentice I 4 (4,0,0,0)

History, safety, identifying tools and equipment, knot tying and hoisting loads, sheet metal types. Fractions and trigonometric functions, conduit, neon tube types, voltage polarity and drops bending.

ELEC 172B Sign Apprentice II 4 (4,0,0,0)

Energized circuits and potential hazards. Electrical magnetism, aluminum conductors, overcurrent protection devices and ground fault interrupters. Arc and oxyacetylene welding. National Electric Code and blueprint reading.

ELEC 173B Sign Apprentice III 4 (4,0,0,0)

Three phase systems, circuit calculations and generators. Electrical test instruments including multimeters and oscilloscopes. Capacitors, divider and rectifiers. Vectors, RL circuits and LCR circuits.

ELEC 174B Sign Apprentice IV 4 (4,0,0,0)

Designing the sign. Glass bending, pumping systems, bombarding filling, testing and aging the complete luminous-tube sign. Neon sign chemistry. Production of fluorescent tubes.

ELEC 175B Sign Apprentice V 4 (4,0,0,0)

Kirchoff's Laws, Thevenin's and Norton's Theorems. Semiconductors and Zener diodes. Power supplies, transducers, transistors, switching and basing techniques. SCRs, triacs, diacs, UJTs, amplifiers, JFETs and MOSFETs.

ELEC 176B Sign Apprentice VI 4 (4,0,0,0)

Grounding, calculation of ground fault currents. Methods used for earth testing. Brazing and welding aluminum. Transformer overcurrent protection. Fuses, circuit breakers and short circuit calculations.

ELEC 177B Sign Apprentice VII 4 (4,0,0,0)

Lightning protection systems. AC, DC, repulsion, universal and polyphase motors. High voltage and insulation testing. Manual starters, magnetic coils, overload and phase failure relays.

ELEC 178B Sign Apprentice VIII 4 (4,0,0,0)

AC motor starters, stepping motors, wound-rotor and synchronous motor controls. Remote control and power limited circuits. Determining conductor ampacity. Calculating raceway fill. Fiber optics.

ELEC 230B Fire Alarm Systems - Level I 2 (2,0,0,0)

This course provides a detailed discussion on the topics associated with the installation of fire alarm systems.

ELEC 235 Fire Alarm Systems - Level II 1 (1,0,0,0)

This course is a continuation of ELEC 230B. The student will be preparing and testing for the State of Nevada F Card certification.

ELEC 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Electrical trade. Graded Pass/Fail.

ELEC 250B Photovoltaic Systems 5 (5,0,0,0)

The course format includes both classroom instruction and hands-on participation, along with the complete process of designing, installing and commissioning photovoltaic systems.

ELEC 260B Photovoltaic Systems II 3 (3,0,0,0)

This course format includes both classroom instruction and hands-on participation dealing with photovoltaic net-metering systems, hybrid, and battery based (off grid) system designs.

ELEC 270B Instrumentation - Level I 4 (3,2,0,0)

This course will be the introduction to the fundamentals of instrumentation and process control.

ELEC 275B Instrumentation - Level II 4 (4,0,0,0)

This course is a continuation of ELEC 270B. The student will be preparing for the EPRI/ISA written exam.

ELEC 280B SMAW - Shielded Metal Arc Welding 4 (3,2,0,0)

This course will aid the student in developing the welding skills and techniques necessary in the industry through theory and practical application in a welding lab.

Floor Coverers

FLCV 100B Introduction to the Union and Construction Trade 1 (1,0,0,0)

The socioeconomic history of Unions as well as employability skills are the primary topics in this class.

FLCV 111B Introduction to the Flooring Trade 3 (3,0,0,0)

Resilient floor coverings, trim products, adhesives, underlayments, tools and equipment, as the basic materials needed by the floor coverer, are presented.



FLCV 121B Floor Installation Process 5 (3,4,0,0)

Procedures for the preparation of different surfaces are discussed. Installation of sheet goods, laminate and floor tile is also covered.

FLCV 131B Carpet Installation Process 5 (3,4,0,0)

Different types of carpeting and installation methods are discussed. Techniques for seaming, pattern match and woven installation are also covered.

FLCV 141B Special Floors and Finishes 3 (2,2,0,0)

Procedures for the installation of safety flooring is discussed. Purpose and maintenance of specialty flooring is also discussed.

FLCV 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Floor Coverers trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

FLCV 200B Math for Floor Coverers 2 (2,0,0,0)

The mathematical concepts from arithmetic, algebra and Pythagorean Theorem are covered. Measuring and estimating job costs are also covered.

FLCV 211B Drawings (Blueprints) for Floor Coverers 2 (2,0,0,0)

Aspects of blueprints including terminology, symbols and specifications are discussed. Additional topics include contract documents and construction methods.

FLCV 221B Safety Awareness 4 (4,0,0,0)

First aid, CPR and OSHA regulations are discussed in detail. Additional topics include hazardous materials, ergonomics and personal protective equipment.

FLCV 231B Leadership 2 (2,0,0,0)

Effective leadership skills including organization, planning and job scheduling are discussed. Recognizing personality types and communication methods are also covered.

FLCV 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Floor Coverers trade. Graded Pass/Fail.

FLCV 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Floor Coverers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

Glaziers

GLZR 111B Glazier I 5 (4,2,0,0)

Covers the history of the trade, mathematics, hand tools, glass fabrication, power tool safety and sealants.

GLZR 112B Glazier II 3 (2,2,0,0)

Covers installing glass replacements, setting blocks, mirror mounting, communication, safety, rigging and hoisting.

GLZR 121B Glazier III 4 (3,2,0,0)

Covers glazing codes, sealants, mathematics, shop drawings, transits and leveling.

GLZR 122B Glazier IV 3 (3,0,0,0)

Covers aluminum entrances, locks, hinges, shower doors, security glazing, insulated and high performance glass.

GLZR 131B Glazier V 5 (4,2,0,0)

Covers panic hardware, hoisting signals, mathematics, swing stage, curtain wall, high-rise, ribbon wall and pressure wall.

GLZR 132B Glazier VI 5 (4,2,0,0)

Covers structural glazing, skylights, spandrel systems, leveling instruments, brake metal, mathematics and history.

GLZR 141B Glazier VII 5 (5,0,0,0)

Covers improving communications, sketching, drawing, blueprints, estimating, storefronts, revolving doors, seamless mullions, history, foreman and superintendent training.

GLZR 142B Glazier VIII 3 (1,4,0,0)

Covers safe workplaces, proper techniques, skill development and proficiency of Shielded Metal Arc Welding (SMAW). Welding and cutting of mild steels, in flat, horizontal, vertical and overhead positions.

GLZR 152B Lift and Swing Stage Safety 1.5 (1.5,0,0,0)

This comprehensive course covers the safety guidelines of lift and swing stage equipment. Topics covered include the use of hooks and cables to suspend the staging, and the proper use of different lift equipment – rough terrain forklift, scissor lift and boom lift. State, federal and local regulations of swing stage usage are discussed.

GLZR 153B Master Sealant 1 (1,0,0,0)

This comprehensive course covers sealant terminology, sealant selection, classifications of sealants, sealant properties, as well as the advantages and disadvantages of different types of sealants.

GLZR 154B Hoisting and Rigging 1 (1,0,0,0)

This comprehensive course covers basic knot, loop and hitches, as well as safe rigging methods and hoisting procedures. Glazing applications involve a crane and various rigging hardware.



GLZR 155B Equipment Safety 1.5 (1.5,0,0,0)

This comprehensive course covers the safety guidelines and proper use of scaffolds. A review in the proper use of swing stages, fork-lifts, scissor lifts and boom lifts will be conducted. OSHA standards and pertinent industry regulations will also be covered.

GLZR 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Glaziers trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

GLZR 200B Math for Glaziers 2 (2,0,0,0)

The mathematical concepts of arithmetic, algebra and Pythagorean Theorem are covered. Measuring and estimating job costs are also covered.

GLZR 211B Drawings (Blueprints) for Glaziers 2 (2,0,0,0)

Aspects of blueprints including terminology, symbols and specifications are discussed. Additional topics include contract documents and construction methods.

GLZR 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Glaziers trade. Graded Pass/Fail.

GLZR 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Glaziers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

Iron Workers

IRW 110B Introduction to Ironworking 3 (2,2,0,0)

Overview of ironworking including rigging, structural steel, welding, burning and reinforcing iron.

IRW 111B Introduction to Major Work Areas 2 (0,4,0,0)

A continuation in a laboratory setting of the five segments introduced in IRW 110B.

IRW 112B Metal Buildings 1 (1,0,0,0)

This class provides the apprentice with hands-on experience in erecting a pre-engineered metal building. Emphasis is placed on interpreting charts and tables as well as safe work practices.

IRW 113B Ironworker History/ C.O.M.E.T. 3 (3,0,0,0)

This course discusses the history of the union, from the factors leading to the birth of the union to the major historic events that have occurred since.

IRW 114B Mixed Base for Ironworkers 3 (3,0,0,0)

Safety (OSHA) blueprint reading and mathematics as it applies to ironworkers.

IRW 116B Reinforcing Iron I 3 (3,0,0,0)

Understanding the forces when iron and concrete are combined as a building material. Techniques/procedures for fabrication and placing the iron. Use of special tools.

IRW 118B Mathematics for Ironworkers 1.5 (1.5,0,0,0)

This course covers basic numerical processes as well as an introduction to geometry, trigonometry, and metric measurement as they apply to ironworker applications.

IRW 120B Blueprint Reading 1.5 (1.5,0,0,0)

This course will cover construction blueprints commonly used in the industry. Students will be introduced to symbols, terms and application with an emphasis on function and interpretation.

IRW 134B Lead Hazard Awareness 2 (2,0,0,0)

This course will cover the health effects caused by lead exposure, OSHA regulations, sampling methods, legal rights of workers, the proper use of personal protective equipment and work methods.

IRW 150B Rigging for Ironworkers 3 (3,0,0,0)

Use of fiberline steel cable and chain in tackle/lever combinations for raising, transporting and storing of heavy loads. Use of access structures such as scaffolds.

IRW 152B Welding I for Ironworkers 2 (1,2,0,0)

This course introduces students to the structure of ferrous metals and their reaction to heat. Topics include the equipment and materials used in metal-shielded arc, gas-shielded arc and oxy-acetylene welding.

IRW 153B Structural Steel I 2 (2,1,0,0)

This course covers structural steel erection topics including history, safety, tools and equipment, drawings, handling materials, erecting structural members, plumbing and aligning structural steel, bolting up, and making connections.

IRW 154B Reinforcing Iron II 3 (3,0,0,0)

Understanding reinforcing iron placed under carefully controlled stresses in concrete being permanently imposed upon the product.

IRW 156B Welding II for Ironworkers 2 (1,2,0,0)

This course is a continuation of IRW 152B. Further study of the structure of ferrous metals and their reaction to heat as well as the equipment and materials used in various types of cutting and welding.



IRW 160B Post Tension I 2 (2,0,0,0)

This course covers principles and theories, safety practices, tools and equipment, unloading, handling, storage, installation, stressing, and finishing for all types of single-strand unbonded post tensioning systems.

IRW 162B Post Tension II 2 (2,0,0,0)

This course is a continuation of IRW 160B. Topics are reviewed and the student will be prepared to take the Post Tension Institute (PTI) Level 1&2 Unbonded Post Tension Ironworker Certification test.

IRW 164B Post Tension III 2 (2,0,0,0)

This course covers bonded post tensioning systems, as well as bar and multi-strand systems.

IRW 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Iron Workers trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

IRW 202B Welding III for Ironworkers 2 (1,2,0,0)

This course is a continuation of IRW 156B. Emphasis on skill development in both processes of ferrous and nonferrous metals in the flat, vertical and overhead positions, and for all types of joints.

IRW 203B Structural Steel II 2 (2,1,0,0)

The course is a continuation of IRW 153B. Topics include installation of metal decking and sheeting, erecting bridges, towers, wind turbines, clear span and amusement park structures. Also, the use of composite materials and reading of structural drawings.

IRW 204B Detailing I for Reinforcing Iron 3 (3,0,0,0)

Reading and interpreting the details of reinforcing iron, placing drawings, bar lists/schedules for the shop fabrication and field placement. Mathematical computations.

IRW 206B Detailing II for Reinforcing Iron 3 (3,0,0,0)

Analysis and interpretation of placing patterns and practices in the erection of a wide variety of reinforced concrete structures.

IRW 207B Structural Steel III/Cranes 2 (2,1,0,0)

This course provides training in how to safely erect and dismantle mobile cranes. Crane operation procedures and the responsibility of crane setup is emphasized.

IRW 208B Foreman Training for Ironworkers 3 (3,0,0,0)

Understanding the duties and responsibilities of personnel in a supervisory position. Human relations are emphasized along with employee needs, training employees and economics of supervision.

IRW 211B Architectural I 2 (1,2,0,0)

This course introduces the procedures and practices used in architectural and ornamental ironworking. Topics include the various tools used as well as anchors and fasteners.

IRW 212B Architectural II 2 (1,2,0,0)

This course will teach the apprentice how to erect a wide variety of doors, stairs, handrails, ladders, toilet partitions, vanity supports, relief angles, flagpoles and how to install chain link fences.

IRW 215B Precast Concrete 1 (1,0,0,0)

This course covers the erection of precast concrete buildings. Emphasis will be on proper rigging, handling and installing techniques of the precast concrete members.

IRW 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Iron Workers trade. Graded Pass/Fail.

IRW 250B Scaffold User/Erector/Dismantler 0.5 (0.66,0,0,0)

This course is designed to provide the apprentice with training in scaffold erection, use and dismantling. Graded Pass/Fail.

IRW 255B Qualified Riggers for Ironworkers 1 (1,0,0,0)

This course will develop skilled Ironworker qualified riggers. The training meets qualification requirements under OSHA Subpart CC. Graded Pass/Fail.

IRW 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Iron Workers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

Millwrights

MWA 101B Orientation 2 (2,0.66,0,0)

This course provides an overview of the construction industry for millwrights, 16-hour safety and green building awareness. Successful students will receive OSHA 10 certification and UBC qualification cards.

MWA 103B Safety and Health Certifications 2 (2,0.66,0,0)

This course covers the safe and appropriate use of forklift and aerial lift equipment in industrial setting, and emergency response procedures. Successful students will receive First Aid and CPR certification and UBC qualification cards.



**MWA 105B Millwright
General Skills A 1.5 (1.33,1.33,0,0)**

Students will identify and use hand and power tools, machining equipment and precision instruments at a fundamental level. Students will complete various bench layout tasks using shop drawings.

**MWA 107B Millwright
General Skills B 1.5 (1.33,1.33,0,0)**

Building on basic machine shop skills, students will use hand and power tools, shop equipment and precision instruments to complete various machining operations.

MWA 109B Cutting and Burning 1.5 (1.33,1.33,0,0)

This course provides safety instruction, equipment operation and basic skills needed for successful layout and fabrication of metal parts using an oxy-acetylene torch.

**MWA 111B Welding
Fabrication A 1.5 (1.33,1.33,0,0)**

This course is designed as an introduction to layout and fabrication. The students will be introduced to the basic skills of measuring, torch set-up and cutting, shaping, grinding, welding, filing, heating and bending of metal parts.

**MWA 113B Optics and
Machinery Alignment 1.5 (1.33,1.33,0,0)**

This course covers the terms, characteristics and operating principles for the transit and laser levels. Procedures for establishing machinery and equipment elevation and alignment will be demonstrated and practiced.

**MWA 115B Machinery
Shaft Alignment 1.5 (1.33,1.33,0,0)**

This course covers the terms, characteristics and methods for aligning machine shafts. Conventional dial indicator and computer aided methods will be included in the training.

**MWA 117B Structural
Welding - AWS A 1.5 (1.33,1.33,0,0)**

This course is designed to prepare the student to obtain an AWS structural welding certificate per AWS D1.1 Structural Welding Code, the welding of plates that are 1/8" to unlimited thickness.

**MWA 119B Structural
Welding - AWS B 1.5 (1.33,1.33,0,0)**

This course is designed to prepare the student to obtain an AWS structural welding certification per AWS D1.1 Structural Welding Code, the welding of plates that are 1/8" to unlimited thickness.

**MWA 121B Turbine
Familiarization 1.5 (1.33,1.33,0,0)**

Students will explore the machines and auxiliary equipment used in the power production industry. This course will highlight the function and performance of a typical gas turbine and will include hydraulic bolting procedures.

MWA 123B Rigging 2 (2,0.66,0,0)

This course presents both lifting theory and practical rigging methods and procedures. Rigging attachment procedures, lifting equipment, limits of operation and communication practices will be covered. Successful students will receive UBC rigging qualification cards. Graded Pass/Fail.

MWA 125B Pumps 1.5 (1.33,1.33,0,0)

This course will cover the identification, application and installation skills for typical systems found in the petrochemical industry. Demonstrations and practice exercises will focus on pump types, gaskets, seals and fans.

MWA 127B Turbine Maintenance 1.5 (1.33,1.33,0,0)

Students will use machinery maintenance skills and techniques for disassembly and assembly of a typical gas turbine. Couplings, bearings and rotors will be inspected, and tolerances verified to complete on site hands-on tasks.

MWA 129B Conveyor Systems 1.5 (1.33,1.33,0,0)

This class will cover proper installation, alignment procedures, belt splicing and explain how improper installation affects the maintenance and lifespan of equipment and conveyor systems.

**MWA 131B Drives, Pulleys
and Belts 1.5 (1.33,1.33,0,0)**

This course will cover the identification, application and installation skills for typical power drive systems. Exercises will focus on the belt, chain and gear drives.

**MWA 133B Compressor Theory
and Maintenance 1.5 (1.33,1.33,0,0)**

This course will cover the compressor operating principles, safety, assembly and maintenance skills for industrial compressors. Exercises will focus on the disassembly, inspection and reassembly of compressor components.

**MWA 135B Machinery Installation
and Erection A 1.5 (1.33,1.33,0,0)**

As an introduction, students will explore the machinery used in the manufacturing and package handling industry. Component descriptions and machine drawings illustrate the complex details and important considerations for assembly and disassembly tasks.

**MWA 137B Machinery Installation
and Erection B 1.5 (1.33,1.33,0,0)**

This course will enhance machinery installation skills used in manufacturing applications. Exercises will focus on the importance of machine drawings to identify component tolerances, installation requirements and alignment of parts.

MWA 139B Print Reading 2 (2,0.66,0,0)

This course introduces basic visualization skills needed for reading and interpreting construction prints. Views, elevations and the role of specifications as they relate to prints will be discussed.



MWA 141B Wind Turbines 1.5 (1.33,1.33,0,0)

This course covers the design, function and installation of wind turbine equipment. The methods, sequences and procedures for housings, bolting, power, drive assembly and other components will be presented.

MWA 143B Solar Installer I 1.5 (1.33,1.33,0,0)

This course covers the design and function of several types of solar installation. The methods, sequences and procedures for mounting layout, elevation/positioning and assembly for solar construction will be presented.

Operating Engineers

OPE 101B Introduction to Apprenticeship/Operation and Maintenance 5 (4,2,0,0)

Tool identification, tool and equipment safety, hand signals for surveyors, grading, standards, surveyors, and crane operators. Basic stake markings and stringline usage. Human relation skills.

OPE 103B Plant Electricity 5 (5,0,0,0)

This course covers all aspects of setup and dismantling of portable cement and gravel plants. Topics include distribution equipment, motor controls, and preventative maintenance. Safety with electrical tools and systems is emphasized.

OPE 105B Machine Tools I 5 (3,4,0,0)

Basic hand tools and machine tools such as drills, files, taps, reamers, micrometers, vernier calipers, engine lathes, milling machines, drill presses, saws and pedestal grinders.

OPE 108B Hydraulics 5 (3,4,0,0)

Theoretical basis for hydraulic and pneumatic circuitry. Circuit components and how they work. Assembly, disassembly and troubleshooting.

OPE 110B Technical Sketching 5 (3,4,0,0)

Sketching of mechanical drawings, industrial pictorials and engineering forms.

OPE 111B Land Surveying 5 (3,4,0,0)

Introduction to rectangular land surveys. Record research and application.

OPE 116B Machinists/Surveyors Math 5 (5,0,0,0)

Basics of geometry and trigonometry. Introduction to modern computational equipment and calculators.

OPE 117B Applied Math for Surveyors 5 (5,0,0,0)

Application of math to field problems and advanced field use of equipment.

OPE 121B Boundary Surveys 5 (3,4,0,0)

Field search and monument recognition on boundary surveys.

OPE 122B Construction Surveys 5 (3,4,0,0)

Applying basics of topographic information to boundary and construction surveys.

OPE 124B Blueprint Reading for Welders/Machinists 5 (3,4,0,0)

Basic knowledge and practice in the reading of blueprints required by welders and machinists.

OPE 131B Introduction to Computer Aided Drafting 5 (3,4,0,0)

Introduction to the basic capabilities of CAD systems emphasizing AUTOCAD software.

OPE 132B Civil AutoCADD 4 (4,0,0,0)

This course is designed to increase the students' knowledge of the calculation and drawing of various projects in the civil engineering portion of the survey industry. Students will also gain skills in calculating project cost estimates.

OPE 153B Grade Checking I 5 (4,2,0,0)

Safety procedures, tool identification, measurements, grading signals and layouts. Information interpretation. Formulas to use with percentages and slope ratios. Standard observations and symbols.

OPE 155B Plan Reading/Grade Checking II 5 (3,4,0,0)

This course is a continuation of OPE 153B. Students will enhance their knowledge of reading and understanding blueprints, codes and calculations.

OPE 157B Specialized Equipment 5 (3,4,0,0)

This course is a continuation of OPE 155B. Students will enhance their skill level on the operation of various pieces of equipment used by the Operating Engineer.

OPE 159B Cranes 5 (3,4,0,0)

Components and terminology. Signaling, communication, mobile crane operation/setup, load charts, rigging/wire ropes and load movement indicators. Safety and accidents.

OPE 173B Drilling I 5 (3,4,0,0)

This course will introduce students to the proper operation of a drill rig in the field.

OPE 175B Drilling II 5 (3,4,0,0)

This course is a continuation of OPE 173B. Students will build on their knowledge of math calculations and well control.



OPE 177B Drilling III 5 (3,4,0,0)

Operations used in special drilling situations. Directional drilling, fishing, well control and optimization. Algebra calculations used for appropriate rig, procedures.

OPE 201B Hazardous Materials Handling Awareness 5 (3,4,0,0)

Hazard recognition, identification, health effects, decontamination, protective equipment, material handling, storage and sampling techniques.

OPE 202B Soils Inspection and Testing 5 (4,2,0,0)

This course covers all principles, procedures, and methods of soil testing. Topics include tool use, soil classification, and calibration of test equipment. Equipment calibration and daily inspection reports are also covered in detail.

OPE 204B Reinforced Concrete Inspector 5 (3,4,0,0)

This course covers all principles, procedures, and methods of reinforced concrete inspection. Topics include daily reports, concrete sampling, concrete placement and safety requirements. In-depth study on reading and interpreting structural plans is also covered.

OPE 206B Pre-Stressed Concrete Inspector 5 (5,0,0,0)

This course covers all principles, procedures and methods of pre-stressed concrete inspection. Topics include cable placement, post tensioned tendons, preparing stressing sheets, and daily reports. In-depth study on reading and interpreting structural plans is also covered.

OPE 208B Structural Masonry Inspector 5 (4,2,0,0)

This course covers all principles, procedures, and methods of structural masonry inspection. Topics include daily reports, reinforcing steel installation, grouting techniques, and safety requirements. In-depth study on reading and interpreting structural plans is also covered.

OPE 209B General Construction Inspector 5 (5,0,0,0)

This course will introduce future inspectors to the materials involved in general construction. Upon successful completion of course, the student will receive certification.

OPE 210B Diesel and High Compression Engines 5 (3,4,0,0)

Engine operations, diagnostics and tune-up. Use of testing equipment and special tools. Specific performance testing procedures. Proper use of an engine dynamometer.

OPE 211B Spray Applied Fire Proofing Inspector 5 (5,0,0,0)

This course will introduce future inspectors to the materials involved in spray applied fire proofing. Upon successful completion of course, the student will receive certification.

OPE 212B Welding 5 (3,4,0,0)

Shielded Metal Arc Welding (SMAW) and cutting of mild steel. Welding in flat, horizontal and vertical positions.

OPE 213B Structural Steel and Bolting Inspector 5 (4,2,0,0)

This course covers all principles, procedures, and methods of structural steel and bolting inspection. Topics include daily reports, bolting techniques, tensile strength, and bolt identification. In-depth study on bolting specifications is also covered.

OPE 214B Heavy Equipment Repair 5 (3,4,0,0)

Diesel injection troubleshooting and repair. Preventive maintenance of diesel power units. Servicing of transmissions and power trains. Starting and charging electrical system.

OPE 215B Machinist - Surfcam 5 (5,0,0,0)

This course will introduce the student to computerized numeric control (CNC) program fundamentals. The student must pass final exam to receive a certificate. Graded Pass/Fail.

OPE 216B Asbestos Training 2 (2,0,0,0)

This course will provide the student with a thorough knowledge of asbestos, the regulations concerning asbestos removal and the proper use of equipment and safety techniques. Satisfies AHERA and OSHA class IV. Student must pass final exam to receive certificate. Graded Pass/Fail. Prerequisites: OPE 101B and OPE 201B.

OPE 217B GPS Rover/CPS Equipment 5 (3,4,0,0)

In this course, the student will be instructed on the proper set up of a GPS system on equipment as well as a rover. Students must pass the final exam in order to receive a certificate. Graded Pass/Fail. Prerequisites: OPE 101B and OPE 153B.

OPE 218B Radiological Worker II 2 (2,0,0,0)

This course satisfies the requirements of 10 CFR 835 Part J radiation training. Students must pass final exam in order to receive a certificate. Graded Pass/Fail. Prerequisites: OPE 101B and OPE 201B.

OPE 219B Residential Inspector 5 (5,0,0,0)

This course covers the proper method of home inspection. Students must pass final exam to receive a certificate. Graded Pass/Fail. Prerequisite: OPE 101B.



OPE 220B Introduction to Survey Systems/ Residential and Applications 5 (5,0,0,0)

This course will provide an overview of how to read grading plans, building plans and underground utilities. Students must pass the final exam in order to receive a certificate. Graded Pass/Fail. Pre-requisite: OPE 101B.

OPE 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Operating Engineers trade. Graded Pass/Fail.

OPE 260B Machinists Handbook 5 (3,4,0,0)

Mathematics, mechanics, strength and testing of materials. Properties, treatment, dimensioning, gauging and measuring. Tooling, machining operations, manufacturing processes, fasteners, threading, gears, bearings, splines and cams.

OPE 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Operating Engineers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

OPE 283B Personnel Supervision 5 (5,0,0,0)

Understanding the duties and responsibilities of personnel in a supervisory position. Human relations is emphasized along with employee needs, training employees and economics of supervision.

Operating and Maintenance Engineers

OPME 102B Fundamentals of Electricity 3 (2,2,0,0)

Fundamentals of constructing electrical circuits, measuring their predictable parameters, using measuring instruments and material needed to maintain and repair electrical systems.

OPME 103B Introduction to the National Electrical Code 3 (3,0,0,0)

Based on the National Electrical Code (National Fire Protection Association) will provide an overview of the code book article format.

OPME 104B Introduction to the Uniform Plumbing Code 3 (3,0,0,0)

Uses the Uniform Plumbing Code (International Conference of Building Officials) for an overview of the principles of plumbing.

OPME 105B Domestic Refrigeration 2 (1,2,0,0)

The course covers sealed system components, defrost and electrical controls, mechanical servicing of domestic refrigerators, troubleshooting, ice makers, window air conditioners and window air conditioning repair.

OPME 106B Mechanical Power Transmission (Instrumentation) 3 (2,2,0,0)

Covers principles of transfer and use, hardware and maintenance of mechanical power. Shaft alignment, belt tension and alignment for optimal efficiency and energy use are discussed and practiced.

OPME 107B Low Pressure Steam 3 (2,2,0,0)

This course explains the fundamentals of low pressure boilers and heat exchangers, hardware, safeties, water treatment and procedures required to maintain and repair such equipment.

OPME 108B Fluid Power (Pneumatics, Hydraulics, Instrumentation) 3 (2,2,0,0)

This course covers principles of generation, transfer and use, hardware and maintenance of fluid power. Pump seals, packings, energy and efficiency, proper use of instrumentation and safeties will also be discussed and practiced.

OPME 109B High Pressure Steam 3 (2,2,0,0)

This course explains the fundamentals of high pressure boilers, hardware, safeties, water treatment and procedures required to maintain and repair such equipment.

OPME 110B Electrical Heating and Cooling 4 (2,4,0,0)

This course will teach single phase electric motor theory, advanced electrical circuit drawing, wiring of air conditioning units with strip heat using time delays, sequences, two speed fans, lockout systems and unit changing methods. Also included will be remote mounted thermostats.

OPME 111B Computer Basics for OPME 3 (3,0,0,0)

Computer terminology, components which make up the system (hardware) and the programs which operate the computers (software) are covered.

OPME 112B Backflow Prevention Certification 4 (3,3,0,0)

Covers the most recent prevention technology in preparation for AWWA Backflow Certification. Attendance in a minimum of forty hours of the total class hours is required to qualify for testing.

OPME 113B F-License 3 (3,0,0,0)

A code based class providing the information to understand installation, operation, maintenance and troubleshooting of fire systems. Terminology, basic fire systems operations and the requirements of the State of Nevada testing and inspection competency exam is covered.

OPME 114B Automated Manufacturing Control 3 (2,2,0,0)

Encompasses the requisition, ordering, expediting and stock control of materials. Principles of computer and sensor operated manufacturing are presented.



OPME 116B Carpet Maintenance 1 (1,0,0,0)

This course will cover the methods, materials and techniques used for carpet repair by the Maintenance Engineer. The student will be given the opportunity to practice and demonstrate such methods.

OPME 117B Tile Repair and Maintenance 1 (1,0,0,0)

This course will cover the methods, materials and techniques used for the repair of tile and grout by the Maintenance Engineer. The student will be given the opportunity to practice and demonstrate such methods.

**OPME 120B Electronics Theory
DC and AC 3 (3,1,0,0)**

Basic concepts of passive electronic circuits, including laws, measurements, calculations and electrical energy sources relating to direct and alternating current. Components and general purpose test equipment used in practical experimentation.

**OPME 122B Introduction to
Oxy-Acetylene Welding 3 (1,5,0,0)**

Basic lab and oxy-acetylene welding safety, preparation, symbols and oxy-acetylene and braze welding in the flat (downhand), vertical and horizontal positions.

**OPME 123B Blueprint Reading
for the Building Trades 3 (1,4,0,0)**

Stress is given to the reading and interpretation of representative construction blueprints.

OPME 130B Kitchen Equipment Repair 3 (3,0,0,0)

Operation of over twenty-five pieces of both electrical and gas kitchen equipment and new products are covered. Safety will be emphasized.

OPME 133B Air Conditioning Theory 6 (6,0,0,0)

Basic fundamentals of refrigeration cycle which includes compressors, condensers, receivers, evaporators, metering devices, basic cycle controls, accessories, refrigerants and piping of air conditioning systems.

OPME 138B Conduit Bending 1 (1,1,0,0)

Mathematical constants for bending three grades of pipe using formulas and Benfield methods are covered. Electric metallic tube, intermediate grade and rigid schedule forty are utilized on one half-inch through two inch pipe.

OPME 139B Hydraulic Conduit Bending 1 (1,1,0,0)

A continuation of OPME 138B, bending pipe from one and three quarter through six inches. Using different formulas for different sized pipe bends that are mastered include fifteen, thirty, forty-five, and ninety degrees offset as well as three bend saddle. Hydraulic benders used are Greenlee and Interpak.

OPME 143B NEC Code Update 1 (1,0,0,0)

Covers OSHA Electrical Safety and the recent changes in the National Electrical Code (NEC) preparing workers for renewal of their journeyman card.

OPME 144B Industrial Electricity 3 (2,2,0,0)

Emphasis placed on troubleshooting, fabrication, maintaining and repairing electrical systems encountered in industry.

OPME 149B Maintenance Plumbing 3 (3,0,0,0)

This course will cover various operations of plumbing maintenance, from fixture repair and replacement, to proper operation of a plumbing auger (snake).

**OPME 150B Plumbing Principles
and Methods 3 (2,3,0,0)**

Fabrication and erection of piping, layout methods, process piping, blueprint installations as well as testing of plumbing fixtures and appliances.

OPME 152B Chief Engineer 3 (3,0,0,0)

This course provides the aspiring Maintenance Engineer, prospective Chief Engineer, or current Chief Engineer, the necessary administrative and personnel skills to handle the daily operational and leadership challenges associated with the position and title of a Chief Engineer. Topics discussed will include budget preparation, planning, time management, scheduling and record keeping.

**OPME 153B Introduction to
Direct Digital Controls 3 (3,0,0,0)**

This course will cover the installation, maintenance and communications for direct digital control devices (DDC).

**OPME 154B Introduction to
CFC/EPA Section 608 1 (1,0,0,0)**

This course will introduce the student to the laws, standards and procedures associated with the handling and recycling of refrigerant. This course will help the student prepare to take the EPA Clean Air Act, section 608 certification test. Prerequisite: OPME 105B.

**OPME 155B Hazardous Waste Operations
and Emergency Response
(Hazwoper) 3 (3,0,0,0)**

This course will cover the standard (29 CFR 1910.120) and the safety requirements employers and public sector responders must meet in order to conduct clean-ups or emergency response operations.

**OPME 156B Certified
Pool Operator (CPO) 1 (1,0,0,0)**

This course will cover various operations of the pool operator. Clark County Health District (CCHD) regulations for the certified pool operator will also be covered. This course will help the student prepare to take the CCHD pool operator's exam.



OPME 157B Cable Terminations 1 (1,0,0,0)

This course will cover methods and techniques to terminate CAT-6, coaxial and fiber optic cables. Cable handling and interference will also be discussed. The student will be given the opportunity to practice and demonstrate such methods.

OPME 202B Ice Machines 3 (3,0,0,0)

Basic ice machine technology, sequential operation and troubleshooting are covered. Emphasis is on Vogt, Hoshizaki, Ice-O-Matic, Scotsman, Maitowac and Cornelius ice machines. Prerequisites: OPME 105B and OPME 110B and OPME 133B.

OPME 211B HVAC Control Systems 6 (6,0,0,0)

Technology updates on HVAC systems, control principles, pneumatics, electrical and electronic controls are emphasized. Building automation, direct digital controls and troubleshooting updates are also covered.

OPME 212 Welding I 3 (1,5,0,0)

Shielded Metal Arc Welding (SMAW) and cutting of mild steel, teaches students some skill in welding flat, horizontal and vertical positions.

**OPME 214B Advanced Fabrication
MIG and TIG Welding 6 (4,4,0,0)**

Advanced design, layout and assembly techniques are covered. Advanced MIG and TIG will be presented in depth.

**OPME 216B 6G Welding
Certification Preparation 6 (4,4,0,0)**

This course will cover the methods and techniques required to pass a 6G pipe welding certification. In addition: several other positions for structural and pipe welds will be discussed. This course will help the student prepare to take the AWS 6G pipe welding certification. The certification test will be available at the completion of the course. Prerequisite: OPME 212.

OPME 217B Welding III 3 (1,5,0,0)

Further student's skill into G.M.A.W. (MIG) on carbon steel and G.T.A.W. (TIG) on aluminum and carbon steel.

OPME 228B OSHA Safety 3 (3,0,0,0)

Fall protection and confined space is covered. Recognizing work environment hazards and how to mitigate them is emphasized. A ten-hour General Industry certification and a ten-hour Construction OSHA certification are provided upon completion. Graded Pass/Fail.

OPME 229B OSHA 10/10 1 (1,0,0,0)

This course will cover OSHA safety standards and code compliance for General Industry (29 CFR part 1910) and Construction (29 CFR part 1926). Upon completion, the student will receive an OSHA 10-hour General Industry card and an OSHA 10-hour Construction card. Graded Pass/Fail.

**OPME 243B Water Treatment
Plant Operation 1 (1,1,0,0)**

Basic knowledge for the safe operation of drinking water treatment plants. Topics include water resources, reservoir management, coagulation and flocculation, sedimentation, filtration, disinfection, corrosion control and taste and odor control.

OPME 244B Water Distribution I 3 (3,0,0,0)

Basic knowledge for the safe operation and maintenance of water distribution systems. Topics include storage facilities, distribution facilities, water quality considerations, disinfection and safety.

OPME 253B Indoor Air Quality 6 (6,0,0,0)

Organizing and operating a preventive maintenance program. Terminology, regulations and design problems. Chemical storage and handling. IAQ contaminants, related illness, air water sampling.

OPME 254B Air Balancing 6 (6,0,0,0)

Detailed information on fan laws, pump performance, piping practices, air handlers, dampers, airflow control devices, registers and grills.

OPME 291B Locksmithing 6 (6,0,0,0)

Key cutting, master keying and key types are introduced. Types of locking systems, access control systems, closure and panic hardware are covered.

OPME 292B Locksmithing II 6 (6,0,0,0)

Establishment and operation of a hotel lock shop is presented. Updated technical information including safe entry and electronic locks are covered. Prerequisite: OPME 291B.

Pile Drivers

PDA 101B Orientation 2 (2,0.66,0,0)

This course provides an overview of the construction industry for pile drivers, safety and green building awareness. Successful students will receive OSHA 10 certification and UBC qualification cards.

**PDA 103B Safety and
Health Certifications 2 (2,0.66,0,0)**

This course covers the safe and appropriate use of scaffolds, rough terrain lift truck equipment and emergency response procedures. Successful students will receive First Aid and CPR certification and UBC qualification cards.

PDA 105B Piles and Hammers A 1.5 (1.33,1.33,0,0)

This course provides an overview of the types of piles used in construction as load bearing support for commercial buildings, bridges and piers. The methods, techniques and pile hammers utilized in the installation process will be presented.



PDA 107B Piles and Hammers B 1.5 (1.33,1.33,0,0)

This course covers the safe operating techniques and utilization of pile hammers in the installation process. Students will use the proper procedures to install two wood sheet pile systems.

PDA 109B Pile Caps and Columns A 1.5 (1.33,1.33,0,0)

This course describes the purpose and function of pile caps and columns in the bridge anatomy. Structural and loading considerations and layout will be presented. Related safety, math and print reading will also be covered.

PDA 111B Pile Caps and Columns B 1.5 (1.33,1.33,0,0)

This course covers the sequence and installation procedures for selected types of pile caps and columns. The safe use of tools and equipment will be emphasized.

PDA 113B Falsework A 1.5 (1.33,1.33,0,0)

This course presents the basic layout and job planning needed to install a typical structure support system for concrete formwork. Related safety, math and print reading will also be covered.

PDA 115B Falsework B 1.5 (1.33,1.33,0,0)

This course presents the installation sequence and procedures used to install falsework support for concrete forms. The safe use of tools and equipment will be emphasized.

PDA 117B Abutments A 1.5 (1.33,1.33,0,0)

This course provides instruction in the detailing, layout and construction preparation for abutments used in the heavy highway industry.

PDA 119B Abutments B 1.5 (1.33,1.33,0,0)

This course provides instruction in the component assembly and construction for abutments used in the heavy highway industry.

PDA 121B Bridge Deck Forms A 1.5 (1.33,1.33,0,0)

This course provides students with an overview of basic bridge and deck construction layout and job planning. Related safety, math and print reading will be covered in the training.

PDA 123B Bridge Deck Forms B 1.5 (1.33,1.33,0,0)

This course provides students with basic bridge and deck construction sequence and procedures. Formwork project will include panel construction, assembly and hardware installation tasks.

Plasterers

PLA 111B Plasterers Apprentice I 4 (3,2,0,0)

Identify and demonstrate usage of various hand tools for mixing and applying 3-coat Portland cement to vertical walls. OSHA 10 is presented along with safety procedures while operating on scaffolds, scissor, and/or boom lifts.

PLA 112B Plasterers Apprentice IB 3 (2,2,0,0)

Identify and demonstrate treatment methods in repairing plaster surface defects. First aid/CPR are demonstrated and practiced. Sexual Harassment Prevention I and Respirator Fit are presented.

PLA 141B Plasterers Apprentice II 3 (2,2,0,0)

Mixing and applying 3-coat gypsum plaster are demonstrated and practiced. Identification and application of various fireproofing materials are demonstrated and practiced.

PLA 142B Plasterers Apprentice IIB 4 (3,2,0,0)

Fundamental math, estimating, measuring, and blueprint reading are presented and practiced. Proficiency in first aid/CPR is repeated. Sexual Harassment Prevention II is presented. Application of Level 5 finish is demonstrated.

PLA 201B Plasterers Apprentice III 3 (2,2,0,0)

Construction of boulders and rocks used in theme settings is demonstrated and practiced. Application of Venetian plaster finish is demonstrated and practiced.

PLA 202B Plasterers Apprentice IIIB 4 (2,4,0,0)

Application of specialty plaster finishes are demonstrated and practiced. Safe operation of rough terrain forklift is demonstrated and practiced. Complete Green Awareness for Construction Workers certification requirements.

PLA 251B Plasterers Apprentice IV 3 (2,2,0,0)

Identify components and demonstrate processes used to construct Exterior Insulation and Finishing Systems (EIFS). Demonstrate thorough knowledge of ornamental plaster procedures with various molds and cornices.

PLA 252B Plasterers Apprentice IVB 4 (3,2,0,0)

OSHA 30 is presented along with safety procedures while working on scaffolds, scissor, and/or boom lifts. Continue knowledge-based application of Exterior Insulation and Finishing Systems (EIFS). Certify as an AWCI-EIFS Mechanic.

Plasterers and Cement Masons

PLCM 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Plasterers and Cement Masons trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

PLCM 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Plasterers and Cement Masons trade. Graded Pass/Fail.



PLCM 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Plasterers and Cement Masons trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

Plumbers/Pipefitters

PPF 101B First Year Plumbers and Pipefitters Apprentice I 4 (4,0,0,0)

Job safety, use and care of tools, recognition of pipe and fittings, trade related math and science, rigging, drawing and blueprint reading, soldering, and brazing.

PPF 102B First Year Plumbers and Pipefitters Apprentice II 4 (4,0,0,0)

Continuation of PPF 101B.

PPF 116B Technical Math for Piping Trades 2 (2,0,0,0)

Measure pipe, fittings, and “take offs” enabling the use of the appropriate formulas for piping measurements. Graded Pass/Fail.

PPF 118B Uniform Plumbing Code Review 5 (5,0,0,0)

This course will review the 2009 Uniform Plumbing Code (UPC) and prepares the student to take the SNBOPE Plumbing Code Test. Strong math skills are needed for this course. Graded Pass/Fail.

PPF 119B Piping Math 2 (2,0,0,0)

This course will provide a review of the basic math formulas and calculations used in the field by Journeymen. This class is recommended for those that wish to take the Pipefitter exam. Graded Pass/Fail.

PPF 120B Blueprint Reading and Isometric Drawing 2 (2,0,0,0)

This course will review basic construction blueprint reading and provide an introduction to isometric drawing. Students will convert the piping systems from blueprints to isometric drawings.

PPF 121B Steam Systems 2 (2,0,0,0)

This course is designed to guide the student through the United Association Steam Systems textbook. Graded Pass/Fail.

PPF 122B Basic Electricity 1 (1,0,0,0)

This course is designed to guide the student through the United Association Basic Electricity Systems textbook. Graded Pass/Fail.

PPF 123B CFC Handling 1 (1,0,0,0)

This course will provide instruction in the safe handling of refrigerants and system testing. Pass/Fail.

PPF 124B Valve Repair Program 2 (2,0,0,0)

This course will cover the practices and techniques of valve repair, the safe handling of valves and repair or replacement of valves used in the piping industry. Graded Pass/Fail.

PPF 129B Pipe Layout 2 (1,1.5,0,0)

This course provides an introduction to pipe layout and the safe and proper use of an Oxygen/Acetylene cutting torch. Students must come dressed in work clothes and safety boots.

PPF 133B Basic Rigging 1 (1,0,0,0)

This course covers the proper rigging techniques and materials used for the piping industry. Graded Pass/Fail.

PPF 134B EPRI Industrial Rigging 3 (3,0,0,0)

This course will provide necessary information needed to assist in taking the EPRI Industrial Rigging examination. Certification exam given at the end of the course. Graded Pass/Fail.

PPF 137B Backflow Assembly Tester Certification 1.5 (1,1.5,0,0)

This course reviews backflow assembly systems and proper testing procedures. Students will take the certification exam at the end of this course. Graded Pass/Fail.

PPF 139B NCCCO Crane Signaling Certification 1.5 (1,1,0,0)

This course will cover the safe and proper signaling methods as approved by the National Commission for the Certification of Crane Operators (NCCCO) and as required by OSHA. Certification exam given at the end of the course. Graded Pass/Fail.

PPF 140B Green Awareness Certification 1.5 (1.5,0,0,0)

This course will introduce the students to the Green Technology movement in construction. Students will participate in an examination for certification at the end of the course. Graded Pass/Fail.

PPF 151B Second Year Plumbers and Pipefitters Apprentice I 4 (4,0,0,0)

Water supply, draining, plumbing fixtures and appliances, gas installations, drawing interpretation and plan reading, and use of the uniform plumbing code illustrated manual.

PPF 152B Second Year Plumbers and Pipefitters Apprentice II 4 (4,0,0,0)

Continuation of PPF 151B.

PPF 154B Weld Certification Preparation 1 (0,2,0,0)

Preparation and welding of steel pipe to pass the UA welding exam rigorous standards to gain UA certification.



PPF 165B Tube Bending 1.5 (0.5,1,0,0)

This course will provide students with the fundamentals of tube bending as used in industrial settings. Students should have a basic understanding of trade related math for this course.

PPF 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Plumber and Pipefitters trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

PPF 201B Third Year Plumbers and Pipefitters Apprentice I 4 (1,6,0,0)

Welding theory, basic metallurgy, safety, proper procedures, oxy-acetylene cutting, shielded metal arc welding (structural and pipe) including pipe preparation and pipe fit-up.

PPF 202B Third Year Plumbers and Pipefitters Apprentice II 4 (1,6,0,0)

Fabrications of piping intersections and offsets. Making of templates and their use, trade mathematics, laying out angles, offsets, and appropriate fittings.

PPF 203B Medical Gas Certification Preparation 2 (2,0,0,0)

Recognize components, layouts, brazed gas pipe and understand the National Fire Code Section 99C to pass the Medical Gas Installer/Brazer Certification test. Graded Pass/Fail.

PPF 210B UA-51 Brazing 0.5 (0.5,0,0,0)

This course prepares the student for completion of the UA-51 brazing certification as per section IX of the boiler and pressure vessel code.

PPF 220B CAD I 4 (4,0,0,0)

Covers basic CAD commands, introduction to CAD, and two dimensional drawings.

PPF 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Plumber and Pipefitters trade. Graded Pass/Fail.

PPF 251B Fourth Year Plumbers and Pipefitters Apprentice I 4 (4,0,0,0)

Principles of refrigeration and refrigerants, evaporators, compressors, condensers, various valves and fittings, and refrigerant piping. Installation of refrigeration equipment, refrigerant piping, various valves and fittings.

PPF 252B Fourth Year Plumbers and Pipefitters Apprentice II 4 (4,0,0,0)

Continuation of PPF 251B.

PPF 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Plumber and Pipefitters trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

PPF 291B Fifth Year Plumbers and Pipefitters Apprentice I 4 (4,0,0,0)

Advanced plumbing I, solvent system, independent study in any of the following areas: advanced plumbing, advanced layout, welding I, or refrigeration.

PPF 292B Fifth Year Plumbers and Pipefitters Apprentice II 4 (2,4,0,0)

Continuation of PPF 291B.

Painters

PTD 101B Painting/Decorating Apprentice I 4 (4,0,0,0)

History of painting, terms, math and human relations. Tools and equipment identification. Preparation and repair of surfaces. Color mixing/matching and lighting effects.

PTD 102B Painting/Decorating Apprentice IB 4 (3,2,0,0)

Application procedures. Understanding pigments. Paint failure remedies. Finishing problems and schedules. Wood and wood products as well as other material ratings. Ladders, scaffolding and rigging.

PTD 105B OSHA 10/First Aid/CPR 1 (1,0,0,0)

Painting Safety and Health Outreach program. Standards pertaining to 29 CFR 1926 construction standards. Techniques of administering first aid and cardiopulmonary resuscitation. Graded Pass/Fail.

PTD 110B Scissor Lift 1 (1,0,0,0)

Operational safety following required OSHA standards and operating techniques are demonstrated. Graded Pass/Fail.

PTD 145B Scaffold Erector 2 (2,0.66,0,0)

This course will cover the basic techniques and procedures associated with frame, system, and tube/clamp scaffold components.

PTD 151B Painting/Decorating Apprentice II 4 (4,0,0,0)

History of drywall finishing. Taping, texturing and finishing. Spray painting and equipment. Air, airless and specialized spray systems. Coatings, industry inspection and testing.



**PTD 152B Painting/Decorating
Apprentice IIB 4 (3,2,0,0)**

Abrasive blasting and equipment. Water blasting and equipment. Exposed aggregate finishes. Techniques and procedures for glazing, antiquing, wood graining, marbleizing, stippling, texturing, gilding and stenciling.

**PTD 153B Life and
Swing Stage Safety 1.5 (1.5,0,0,0)**

This comprehensive course covers the safety guidelines of lift and swing stage equipment. Topics covered include the use of hooks and cables to suspend the staging, the proper use of different lift equipment – rough terrain forklift, scissor lift and boom lift. State, federal and local regulations of swing stage usage are discussed.

PTD 155B Respirators/Lead Abatement 1 (1,0,0,0)

Acceptable safe respirators and proper procedures to ensure maximum protection. Safe removal procedures for various materials containing lead. Health effects.

PTD 200B Math for Painters 2 (2,0,0,0)

The mathematical concepts of arithmetic, algebra and Pythagorean Theorem are covered. Measuring and estimating job costs are also covered.

**PTD 201B Painting/Decorating
Apprentice III 4 (4,0,0,0)**

History of wallpapering. Surface preparation and tools/equipment used. Adhesive applications. Standards, ethics, and goals of the painting industry.

**PTD 202B Painting/Decorating
Apprentice IIIB 4 (3,2,0,0)**

Blueprint reading. Understanding lines, symbols, scales and dimensions used on blueprints. Understanding how to read architectural and engineering drawings.

PTD 205B Heavy Equipment Operation 1 (1,0,0,0)

This course covers the safe use of equipment that transports humans and materials up, down and across the side of buildings, such as, scissor lift, man lift, etc.

**PTD 211B Drawings (Blueprints)
for Painters 2 (2,0,0,0)**

Aspects of blueprints including terminology, symbols and specifications are discussed. Additional topics include contract documents and construction methods.

PTD 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Painters trade. Graded Pass/Fail.

PTD 255B COMET 1 (1,0,0,0)

History and organization of painters in the labor movement. Public relations tactics used by the painters union leaders.

PTD 260B Confined Space 1 (1,0,0,0)

The objective of this course is to develop the respect necessary for the potential hazards in permit and non-permit confined spaces. This course will instruct workers on comprehension and use of the safe entry procedures into confined space environments.

PTD 267B Spray Painting for Painters 2 (1,2,0,0)

This course introduces the operation and maintenance of spray machines used by the professional painter. Topics covered include the safety of workers and the public on the job site during spray applications as well as the different types of spray equipment used.

PTD 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Painters trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

PTD 271B Wall Covering I 2 (2,0,0,0)

This course will introduce the student to wall covering tools, terminology, planning and preparation. Topics discussed include the economics of wall covering materials and the development of good work habits for the wall covering professional.

PTD 272B Wall Covering II 2 (1,2,0,0)

This course is a continuation of PTD 271B. Topics covered include the introduction of new and exotic materials, such as papers, fabrics, foils, cork and carpet. The techniques for application of various products using the proper adhesives and paste will also be discussed.

PTD 273B Wall Covering III 2 (1,2,0,0)

This course is a continuation of PTD 272B. The course will reinforce all aspects concerning the proper preparation of old surfaces. Discussion will include how to rectify various problems encountered on the job site.

Rofer and Waterproofer

RFR 101B Roofers Apprentice I 4 (3,2,0,0)

The socioeconomic history of the Roofing trade and employability skills are the primary topics. Additional topics include OSHA safety regulations and introduction to various roofing methods, tools, and materials.

RFR 102B Roofers Apprentice I s 4 (2.5,3,0,0)

This course covers all aspects of built-up roofing. Additional topics include personal protective equipment, ladder safety, trade related mathematics, and blueprint reading.



RFR 151B Roofers Apprentice II 4 (2.5,3,0,0)

This course covers all aspects of single ply roofing, including tools, materials, and installation methods. Additional topics include maintenance/repair of existing roofs, and various water-proofing methods.

RFR 152B Roofers Apprentice II s 4 (2.5,3,0,0)

This course covers all aspects of steep slope roofing including the OSHA safety requirements regarding tools, equipment and hoisting. Also covered are various types of shingles and photovoltaic shingle installation.

RFR 201B Roofers Apprentice III 4 (2,4,0,0)

This course covers advanced roofing methods including damp proofing, surface preparation, and spray systems. Additional topics include membrane systems, chopped glass, rubberized asphalt and spray foam applications.

RFR 202B Roofers Apprentice III s 4 (2.5,3,0,0)

This course covers the advanced mathematics required in the roofing industry. Additional topics include supervisor training, advanced blueprint reading, and overall job site organization.

RFR 211B Safety 4 (3,2,0,0)

Industry statistics on accident frequency rates are studied. Understanding basic causes of accidents in the workplace are emphasized. Safe practices for each type of work is reviewed extensively. Graded Pass/Fail.

RFR 212B CPR, First Aid, and OSHA 10 4 (3,2,0,0)

This course covers first aid/CPR and OSHA 10 regulations as applied to the Roofing trade. Covered topics include work related injury prevention, health/safety on the job, and basic safety requirements. Graded Pass/Fail.

RFR 250B Photovoltaic Systems 5 (5,0,0,0)

The course format includes both classroom instruction and hands-on participation, along with the complete process of designing, installing, and commissioning Photovoltaic systems.

RFR 270B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Roofers and Waterproofers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

Scaffold Erector

SEA 101B Orientation 2 (2,0.66,0,0)

This course provides an overview of the construction industry, safety and green building awareness. Successful students will receive OSHA 10 certification and UBC qualification cards.

SEA 103B Safety and Health Certifications 2 (2,0.66,0,0)

This course covers the safe and appropriate use of scaffolds, aerial lift equipment and emergency response procedures. Successful students will receive First Aid and CPR certification and UBC qualification cards.

SEA 105B Basic Frame Scaffold 1.5 (1.33,1.33,0,0)

This course will cover the basic techniques and erection procedures associated with frame scaffold components. The terminology, components and installation sequence will be presented.

SEA 107B Print Reading 2 (2,0.66,0,0)

This course introduces basic visualization skills needed for reading and interpreting construction prints. Views, elevations and the role of specifications as they relate to prints will be discussed.

SEA 109B Basic System Scaffold 1.5 (1.33,1.33,0,0)

This course will cover the basic techniques and erection procedures associated with system scaffold components. Construction practices and safety considerations will be a major focus of the class.

SEA 111B Basic Suspended Scaffold 1.5 (1.33,1.33,0,0)

This course will cover the basic techniques and procedures associated with suspended scaffolds. The terminology and use of scaffold components in a cable suspended configuration will be the focus of this training.

SEA 113B Basic Tube and Clamp Scaffold 1.5 (1.33,1.33,0,0)

This course will cover the basic techniques and procedures associated with tube and clamp scaffold components and erecting methods. Students will identify custom configurations utilizing this type of scaffolding.

SEA 115B Intermediate Frame Scaffold 1.5 (1.33,1.33,0,0)

This course will enhance the student's basic frame scaffold erecting ability by incorporating variations of standard construction techniques and procedures to accommodate structural, equipment or overhead restrictions.

SEA 117B Intermediate System Scaffold 1.5 (1.33,1.33,0,0)

This course presents the techniques and procedures to build cantilevered platforms that extend beyond a typical scaffold base arrangement using system scaffold components.



**SEA 119B Advanced
Frame Scaffold 1.5 (1.33,1.33,0,0)**

This course will cover the advanced techniques and procedures associated with ground supported frame scaffold. The use of scaffold components for construction of various heavy-duty (industrial) elevated platforms will be the focus of this training.

**SEA 121B Advanced
System Scaffold 1.5 (1.33,1.33,0,0)**

This course will cover the advanced techniques and procedures required when constructing system scaffolds used in industrial boiler installation or repair applications. Students will identify surface obstacles and unique shapes indicative of this application.

**SEA 123B Advanced
Suspended Scaffold 1.5 (1.33,1.33,0,0)**

This course will cover the advanced techniques and procedures required when constructing suspended scaffolds supported by structural members. Students will identify the suitable structural components for this application type.

SEA 125B Scaffold Re-Shoring 2 (2,0.66,0,0)

This course will present students with the principles and techniques for the use of shoring equipment in a re-shore application. The importance of uniform loading and alignment of multi-tower/tandem tower configurations will be explained.

**SEA 127B Scaffold in
Confined Spaces 1.5 (1.33,1.33,0,0)**

This course covers both CAL-OSHA and Federal OSHA regulation for safe access, entry and monitoring for confined space work. Successful students will receive UBC qualification cards.

**SEA 129B Specialty
Scaffold Applications 2 (2,0.66,0,0)**

This course will include specialty scaffold applications focusing on ramps, chutes and mobile towers suitable for light and heavy duty use.

SEA 131B Advanced Print Reading 2 (2,0.66,0,0)

In this course, students will analyze multi-view drawings to determine construction type, locate benchmark, find building element and review codes, references and perform calculations for construction purposes.

[Sheet Metal Worker](#)

SMTL 111B First Aid/CPR I 0.5 (0.66,0,0,0)

Covers First Aid procedures for infants and adults, and the latest procedure of CPR. Certification will be issued upon completion. Graded Pass/Fail.

**SMTL 112B Job Site Safety
and Certification 1 (1,0,0,0)**

Covers safe work practices for shop and field along with forklift safety, welding safety, power actuated tools and aerial safety. Certifications are issued upon completion.

SMTL 113B Sheet Metal Drafting 4 (4,0,0,0)

Covers the use of drafting tools, lines, lettering, orthographic projections, layout, pictorial drawings, sketches, as well as pictorial, isometric, oblique, freehand and shop drawings.

SMTL 114B Layout/Fabrication I 4 (4,0,0,0)

Covers the use of hand tools, layout construction, layout on metal basics, parallel line layout, radial line layout, triangulation and basic shop equipment.

SMTL 115B Sheet Metal Apprentice I 3 (3,0,0,0)

Covers the trade history, responsibilities, people skills, service, shop equipment, seams, locks and edges. Will become familiar with trade related math including the areas of geometry, trigonometry and layout.

SMTL 121B OSHA 10 1 (1,0,0,0)

Upon completion of this safety class, students will receive an OSHA 10 certificate. Graded Pass/Fail.

**SMTL 122B Sheet Metal Plans
and Specifications 4 (4,0,0,0)**

Covers cut sheets, RFIs, man hours, equipment, rough BID, elevations, penetrations, clearance, equipment size, submittals, moisture controls and specifications.

SMTL 123B Layout/Fabrication II 4 (4,0,0,0)

Covers advanced parallel line development and advanced triangular development.

SMTL 124B Sheet Metal Apprentice II 4 (3,2,0,0)

Covers trade materials, properties of metals, alternative materials, hardware of the craft, shop procedures, field installation, introduction to refrigeration and more trigonometry.

SMTL 221B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Sheet Metal Workers trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

SMTL 230B First Aid/CPR II 0.5 (0.66,0,0,0)

Covers items for recertification of basic first aid and CPR. Certification will be issued upon completion of the class. Graded Pass/Fail.



SMTL 232B Shop Drawings/Takeoff 2 (1,2,0,0)

Covers Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards, local codes, shop drawings, cut sheets, along with architectural, structural, mechanical and electrical drawings.

SMTL 233B Introduction to Welding 2 (1,2,0,0)

Covers safety in metallurgy, oxyfuel, plasma cutting, electrical power fundamentals, and gas metal arc welding (GMAW).

SMTL 234B Architectural Sheet Metal I 4 (4,0,0,0)

Covers Architectural Sheet Metal materials, moisture control, expansion and contraction. Material handling, wall systems, project management and special Architectural Sheet Metal are also covered.

SMTL 236B Architectural Sheet Metal II 4 (4,0,0,0)

Covers flashing, seams, locks, edges, fastening, joining, measurements, field installation, shop layout and fabrication. Wall systems, supports, substrates, roofing drainage systems, louvers and ventilators will also be covered.

SMTL 240B CAD/Detailing I 4 (4,0,0,0)

Covers basic CAD commands, introduction to CAD, and two dimensional drawings.

SMTL 241B CAD/Detailing II 4 (4,0,0,0)

Covers introduction to 3D drawing, enabling the creating, drawing and printing of a basic duct system (required).

SMTL 242B TAB I 4 (4,0,0,0)

Covers air pressure, measuring rotational speed, electrical components as well as measurement, air distribution devices and fans.

SMTL 243B TAB II 4 (4,0,0,0)

Covers air balance test reports, air velocity reading instruments, temperature as well as humidity instruments and general procedure for balancing systems.

SMTL 244B Advanced Welding/Industrial I 4 (4,0,0,0)

Covers the Shielded Metal Arc Welding (SMAW) process and learning how to weld on multiple joints with different rods in all positions.

SMTL 245B Advanced Welding/Industrial II 4 (4,0,0,0)

Continue welding processes introduced in SMTL 244B. Exercises are designed for certifications in 18 gauge and 10 gauge.

SMTL 246B HVAC-R Equipment I 4 (4,0,0,0)

Includes understanding the refrigeration cycle, components, piping and start-up of HVAC-R equipment.

SMTL 247B HVAC-R Equipment II 4 (4,0,0,0)

Continuation of SMTL 246B and includes documentation, troubleshooting and diagnosing of refrigerant systems. Additional curriculum covers basic electricity, components, controls, diagrams, troubleshooting, and diagnosing of electrical systems.

SMTL 248B Food Service Equipment Fabrication/Installation I 4 (4,0,0,0)

Covers safety, metallurgy, local codes, materials along with application, and Gas Tungsten Arc Welding (GTAW).

SMTL 249B Food Service Equipment Fabrication/Installation II 4 (4,0,0,0)

Continuation of SMTL 248B including Carbon Arc Braze Welding. Will become competent in installation and modification of various pieces of kitchen/food service equipment.

SMTL 260B Foreman Training 2 (2,0,0,0)

Covers record keeping, legal documents and considerations along with the responsibilities of a foreman in the Sheet Metal industry.

SMTL 261B TAB III 4 (4,0,0,0)

Covers systems balancing, low pressure constant volume supply systems, return air and exhaust systems, variable air volume systems, leak testing, controllers and controlled devices.

SMTL 262B TAB IV 4 (4,0,0,0)

Covers pumps, water balance preparation, water system balance procedures and water chillers.

SMTL 263B Advanced Welding/Industrial III 4 (4,0,0,0)

Covers the Shielded Metal Arc Welding (SMAW) processes for structural welding.

SMTL 264B Advanced Welding/Industrial IV 4 (4,0,0,0)

Continuation of SMTL 263B. Preparation for certification in 3/8 inch plate and a variety of other welding processes.

SMTL 265B HVAC-R Equipment III 4 (4,0,0,0)

Greater detail given in the areas covered in SMTL 247B including refrigerant cycle, components, piping, start-up, commissioning, troubleshooting and diagnosing refrigeration systems.

SMTL 266B HVAC-R Equipment IV 4 (4,0,0,0)

Greater detail given in the areas covered in SMTL 265B including advanced electrical curriculum in components, controls, troubleshooting and diagnosing electrical systems.

SMTL 267B Food Service Equipment Fabrication/Installation III 4 (4,0,0,0)

Covers a variety of processes required to install, modify and repair food service equipment.



SMTL 268B Food Service Equipment Fabrication/Installation IV 4 (4,0,0,0)

Continuation of SMTL 267B. Various specialty items such as hand rails and wall coverings will also be covered.

SMTL 269B CAD/Detailing III 4 (4,0,0,0)

Covers 3D ductwork on architectural and mechanical building layout drawings.

SMTL 270B CAD/Detailing IV 4 (4,0,0,0)

Covers how to generate reports, shipping lists and drawings detailed enough to be utilized for manufacturing, installation, shipping, estimating and ordering.

SMTL 284B Architectural Sheet Metal III 4 (4,0,0,0)

This course is part of the Sheet Metal Local #88 Apprenticeship program and covers moisture control, single-ply roofing and built-up roofing.

SMTL 285B Architectural Sheet Metal IV 4 (4,0,0,0)

This course is part of the Sheet Metal Local #88 Apprenticeship program and is a continuation of SMTL 284B. Topics covered in this course include advanced moisture control, wind uplift, repair and maintenance.

SMTL 290B Journeyman Upgrade I 3 (2,2,0,0)

A review of trade related math skills, drafting, and basic layout skills for Building Trades Sheet Metal Journeymen.

SMTL 291B Journeyman Upgrade II 3 (2,2,0,0)

Covers advanced layout skills, fabrication techniques, and basic welding skills for Building Trades Sheet Metal Journeymen.

SMTL 292B Journeyman Upgrade III 3 (2,2,0,0)

Covers drafting and blueprint reading for Light Commercial Journeymen.

SMTL 293B Journeyman Upgrade IV 3 (2,2,0,0)

Covers foreman training, detailing and bidding for Light Commercial Journeymen.

Tile Setters

TLS 101B Tile Setter Apprentice I 4 (2,4,0,0)

Labor/Management relations and safety. Material and equipment identification. Wall preparation of paper/wire, sheetrock, masonry and wonderboard. Mortars, mixes and adhesive applications. Math ratios.

TLS 102B Tile Setter Apprentice IB 4 (2,4,0,0)

Float strips/floating walls and corners. Cutting materials and setting wall tile. Tub splash installation. Math, safety and human relations.

TLS 105B OSHA/First Aid/CPR for Tile Setters 3 (3,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Tile Setters trade. Additional topics include first aid and CPR. Graded Pass/Fail.

TLS 151B Tile Setter Apprentice II 4 (2,4,0,0)

Grouting with mixes and additives. Installation on walls, floors, countertops, back splash and showers. Math and safety.

TLS 152B Tile Setter Apprentice IIB 4 (2,4,0,0)

Tiling floors with the two-step method, quarry and ceramics. Setting beds by rodding and screening. Pullmans and continuation on countertops/backsplashes. Math and safety.

TLS 170B OSHA 10 0.5 (0.66,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Tile Setters trade. This course places emphasis on OSHA regulations and policies. Graded Pass/Fail.

TLS 201B Tile Setter Apprentice III 4 (2,4,0,0)

Tile tub splash and shower curb with the scratch and float method. Floating and tiling columns. Math and safety.

TLS 202B Tile Setter Apprentice IIIB 4 (2,4,0,0)

Tiling arches and steps with quarry and split brick. Math and Safety.

TLS 240B First Aid/CPR 0.5 (0.66,0,0,0)

This course provides CPR training and first aid instruction as applied to the Tile Setters trade. Graded Pass/Fail.

Teamsters

TMST 100B OSHA General Industry Class 1 (1,0,0,0)

An OSHA 10 approved General Industry class on safety in the workplace. Graded Pass/Fail.

TMST 105B OSHA 30 2 (2,0,0,0)

This course provides an overview into 29 CFR 1926 as applied to the Teamsters trade. This course places emphasis on areas considered hazardous including personal protective equipment, fall protection, hazard awareness, ladders, and scaffolding. Graded Pass/Fail.

TMST 120B Introduction to the Convention Industry 2 (2,0,0,0)

An overview of the convention industry designed to give apprentices knowledge of general information. Procedures for reporting to work, work attire and responsibilities to the industry are covered. Graded Pass/Fail.



TMST 130B Beginning Decorating 2 (2,0,0,0)

Symbols, usage codes, usage, and furniture are identified. Reading work orders and floor plans as they relate to decorating are covered. Customer service skills are emphasized. Graded Pass/Fail.

TMST 140B Beginning Systems 1 (1,0,0,0)

Systems blueprint reading is practiced. How to recognize packages is presented. The ability to identify all the parts and tools associated with the Systems is emphasized. Graded Pass/Fail.

TMST 150B Beginning Design and Repair 2 (2,0,0,0)

Modular Interlocking Systems (MIS) blueprint reading is practiced. How to recognize the different packages is presented. The ability to identify all the parts and tools associated with MIS is emphasized. Graded Pass/Fail.

TMST 160B Beginning Installation and Dismantle 2 (2,0,0,0)

This course introduces blueprint reading, booth construction and tool use. Additionally, basic mathematics and human relations skills are taught. Graded Pass/Fail.

TMST 170B Forklift Theory 3 (3,0,0,0)

Forklift safety following OSHA standards is covered as well as forklift maintenance. Different types of forklifts and their uses are presented. Propane safety is emphasized. Load capacities and proper centering techniques are detailed. Graded Pass/Fail.

TMST 200B Advanced Forklift 3 (3,0,0,0)

This course covers forklift operations including loading trailers, using loading ramps and docks. Logistics of forklift operations is also covered. Graded Pass/Fail.

TMST 220B Advanced Installation and Dismantle 3 (3,0,0,0)

This course covers advanced blueprint reading, custom floor work and graphics. Advanced mathematics and ongoing human relations are also covered. Graded Pass/Fail.

TMST 230B Lead Foreman Training 2 (2,0,0,0)

This course covers leadership skills, customer service and labor calls. Management responsibilities and filling out appropriate paperwork is also covered. Graded Pass/Fail.

TMST 240B First Aid/CPR 1 (1,0,0,0)

Red Cross First Aid/CPR standards and accepted procedures are demonstrated for certification. Graded Pass/Fail.

TMST 250B Condor Operating 3 (3,0,0,0)

Operational techniques and safety are stressed. Additional topics include equipment inspection, hand signals and proper rigging. Graded Pass/Fail.

TMST 260B Rigging 1 (1,0,0,0)

Standard rigging hand signals and acceptable rigging techniques are detailed. Graded Pass/Fail.

TMST 265B Heavy Duty Rigging 1 (1,0,0,0)

In this course, the student will learn heavy rigging fundamentals as well as signal person requirements and qualifications. Graded Pass/Fail.

TMST 270B Scissor Lift 1 (1,0,0,0)

Operational safety following required OSHA standards and operating techniques are demonstrated. Graded Pass/Fail.

