Concrete Course Descriptions

Orientation
Safety & Health Certifications
Basic Wall Framing
Printreading
Foundations & Flatwork
Tilt-Up Panel Construction
Wall Forming
Gang Forms / Columns
Slabs & Flatwork
Beam & Deck Forming
Rigging
Stairs & Ramp Forming
Transit Level / Laser
Abutments
Bridge Construction
Advanced Printreading
Bridge Falsework

ORIENTATION **(40 Hours)**

This course provides an overview of the carpentry profession, tools of the trade, and jobsite safety. Discussion topics will include the history of the trade, apprenticeship responsibilities, and hiring-hall practices, and measurements. Successful students will receive OSHA 10 and Powder Actuated Tool certification cards. Qualified candidates will be issued an UBC gradall operator's card.

SAFETY & HEALTH CERTIFICATIONS **(40 Hours)**

This course covers the safe and appropriate use of scaffolds, aerial lift equipment, and emergency response procedures. Successful students will receive UBC Scaffold Erector and Aerial Lift Operator qualification cards. First Aid and CPR certification will be issued upon successful completion of the American Red Cross training provided.

BASIC WALL FRAMING **(40 Hours)**

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. Beginning with an introduction to print reading, students will perform: basic wall layout; plating procedures; framing assembly and bracing; before aligning and completing selected wall construction project to industry standards.

PRINTREADING **(40 Hours)**

This course introduces the basic principles and conventions associated with architectural print interpretation. Print characteristics, drawing methods, and standard graphic representations are explained and thoroughly discussed. Students will review plans and apply the visualization techniques presented in the training.

FOUNDATIONS & FLATWORK (40 Hours)

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. Jobsite safety, print interpretation, material identification, and basic use of the builder's level will be included in the training. Students will construct three selected formwork projects.

TILT-UP PANEL CONSTRUCTION (40 Hours)

This course is designed to give an overview of the Tilt-up industry. Forming techniques for walls, windows and door bucks will be covered. Tilt up hardware, panel raising hazards, and job site safety will be discussed.

WALL FORMING (40 Hours)

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

GANG FORMS / COLUMNS (40 Hours)

This course presents the formwork types and construction methods for gang form and column installations. Discussions will cover heavy timber gang forms and use of taper ties, bracing, and bulkhead tables. The course project will include gang and column formwork construction, assembly, and hardware installation tasks. Related safety, math and print reading will be covered in the training.

SLABS & FLATWORK (40 Hours)

This course covers the forming methods and techniques used in the construction of site work, curbs and gutters. Site work layout, elevation, and construction practices will be presented. Jobsite safety, print interpretation, material identification and site preparation will be included in the training. Students will construct sidewalk, curb and gutter forms to prints specifications.

BEAM & DECK FORMING (40 Hours)

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 & deck forms. Metal beam forms and capitals will be highlighted. Additionally, layout and builders level skills will be used in this class.

RIGGING (40 Hours)

This course presents both lifting theory and practical rigging methods and procedures. The design, characteristics and safety working load of lifting hardware will be discussed. Rigging attachment procedures, lifting equipment, limits of operation and communication practices will be covered. Successful students will receive UBC rigging qualification cards.

STAIRS & RAMP FORMING (40 Hours)

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.

TRANSIT LEVEL / LASER (40 Hours)

This course covers the terminology, optical principles, and operating procedures for the transit and laser levels. The conventional methods for measuring angles, using degrees, minutes, and seconds on vernier scales will be included in the transit portion of this class. Students will set up levels, determine benchmarks, take and record elevation readings.

ABUTMENTS (40 Hours)

This course provides instruction in the detailing, layout and construction of abutments used in the heavy highway industry. The terms, components, materials, building techniques and procedures will be presented. The class project includes keyway, panel, head wall and wing wall construction.

BRIDGE CONSTRUCTION (40 Hours)

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. Formwork project will include panel construction, assembly, and hardware installation tasks. Related safety, math and print reading will be covered in the training.

ADVANCED PRINTREADING (40 Hours)

In this course, students will analyze multi-view drawings to determine construction type, locate benchmark, find building element, references, and perform calculations for construction purposes. The training will include sketching, material take-off, labor estimation, and the methods used to interpret schedules and specifications.

BRIDGE FALSEWORK (40 Hours)

This course will focus on bridge falsework construction. The techniques for bent assemblies, base sub-assemblies, deck soffits and hardware installation will be presented. Falsework tasks will include rigging and alignment techniques. Related safety, math and print reading will be covered in the training.