UTAH SYSTEM OF HIGHER EDUCATION

Utah System of Higher Education
Construction Technology
FY2027 / 21 Credits (630 Clock-Hours)

Foundational Courses

TECO 1010 Introduction to Construction — 2 Credits / 60 Clock-Hours

The Introduction to Construction teaches site safety, construction math, proper material handling, hand and power tool identification and use, workplace habits and attitudes. This course describes construction drawings and builds communication and employability skills needed in the workplace.

Objectives:
- Demonstrate proper workplace and job site safety.
- Demonstrate proper use of hand and power tools.
- Demonstrate proper equipment and hazardous material handling.
- Describe various types of construction drawings.
- Use whole numbers, fractions, and decimals in mathematical equations as they pertain to job site tasks.
- Demonstrate positive workplace behaviors and communication skills to promote a successful construction team.

TECO 1020 Carpentry Concepts — 4 Credits / 120 Clock-Hours

The Carpentry Concepts course teaches the uses of various fasteners, proper use of carpentry tools, interpretation of blueprints, material take-offs, and basic carpentry concepts.

Objectives:
- Describe building materials used in construction work.
- Identify hand tools and power tools operations, with care and maintenance.
- Define techniques for reading and using construction drawings and specifications.
- Demonstrate procedures for framing and layout of a residential building.
- Define the concept of the building envelope and its components.

TECO 1030 Construction Print Reading — 3 Credits / 90 Clock-Hours

The Construction Print Reading course familiarizes students with construction prints, design, symbols, specifications, measurements, as well as the importance of plot plan, foundation plan, floor plan, elevations, and section views.

Objectives:
- Demonstrate knowledge of current blueprint application in residential construction.
- Identify the different types of lines on blueprints.
- Identify the different parts of a blueprint.
- Identify the different symbols used on blueprints.
- Explain abbreviations used on blueprints.
- Use the proper sequence in reading blueprints.
- Extract pertinent construction information from blueprints.

TECO 1040 Advanced Carpentry Concepts **4 Credits / 120 Clock-Hours**

This course teaches layout of the construction site for the excavation for footings and foundation. Training will be offered in cement work, floor units, walls, windows and door openings, construction roof systems, and stair layout according to building plans.

Objectives:
• Demonstrate how to setup and use builder's levels and establish grades on jobsite.
• Demonstrate squaring and leveling a building site.
• Explain concepts of structural concrete and flatwork.
• Demonstrate proper use of tools used to form, place, and finish concrete.
• Demonstrate procedures for framing floor, wall, roof, and stair systems and proper installation of doors and windows.

TECO 1050 Interior Finishes **4 Credits / 120 Clock-Hours**

This course introduces the materials and methods for interior wall, floor, and ceiling finishes, installing handrail/guardrails, finish flooring, (e.g., ceramic tile, wood flooring, or laminate flooring), installing shelving, decorative moldings, and hardware.

Objectives:
• Demonstrate proper installation techniques of multiple interior finishes (may include but are not limited to):
• Drywall.
• Pre-hung interior doors.
• Trim out doors with door casing.
• Baseboard molding and/or chair rail.
• Trim out windows with window seals and casing.
• Guard and hand railing according to code.
• Ceramic tile or wood or laminate flooring.
• Shelving, decorative moldings, and hardware.

TECO 1060 Exterior Finishes **4 Credits / 120 Clock-Hours**

The Exterior Finishes course provides the student an introduction to the application of exterior finishes. Subjects taught may include proper installation of roofing, siding, masonry, cornice finishes, weather barriers, and flashing.

Objectives:
• Identify and demonstrate how to apply typical roofing materials and demonstrate proper application.
• Identify and demonstrate how to apply exterior finishes and their proper weather barrier.
• Identify styles of cornice and install soffit and fascia onsite.
• Identify and demonstrate how to install exterior doors and windows with proper flashing.

Supplemental Courses Varies by Institution

Snow

TECO 1205 Cabinet Making **3 Credits / 90 Clock-Hours**

This course is designed to provide students with a solid base of knowledge and skills relative to the woodworking, & cabinetmaking fields. It is an introduction to materials and processes that promote the responsible use of natural resources and sustainability in producing cabinets for industry skilled labor needs. Skills in traditional woodworking tools along with the safe operation of power equipment will be taught. Advanced instruction with sophisticated computer software and computer operated CNC equipment are included.

Objectives:
• Properly use tools, equipment, and materials necessary for cabinet making.
• Demonstrate team working skills, including safety, needed to produce cabinets.
• Demonstrate critical thinking skills in choosing quality layouts, and production pathways.
• Use CNC processes in building cabinets.

TECO 1405 Introduction to Woodworking **3 Credits / 90 Clock-Hours**

This course is intended for students to learn and improve their knowledge and skill using basic woodworking tools. Instruction will include wood and tool terminology, layout techniques, joinery, and finishes. Instructor will cover sharpening, proper tool selection and use, and project layout. The skills learned in this course will transfer between carpentry and fine woodworking.

Objectives:
• Demonstrate basic woodworking skills including safety.
• Perform proper layout of wood and projects.
• Accurately cut of precise measurements on wood.
• Describe different types of joinery.
• Demonstrate basic wood finishing techniques.

TECO 1440 Fundamentals of Fine Woodworking **3 Credits / 90 Clock-Hours**

This course is designed to instruct students with basic woodworking skills and hone those skills for industry skilled woodworking needs. This course will combine the best/most efficient use of hand tools and woodworking equipment in producing projects, helping to develop critical thinking skills. This course will discuss wood qualities of movement, grain orientation, density, durability, and other fundamental characteristics. The course will involve layout, design and building of an instructor approved project.

Objectives:
• Demonstrate multiple sturdy wood joints.
• Explain wood qualities and characteristics.
• Demonstrate the use of hand tools and machine tools and explain when to use each.
• Make tight joints, square cuts, and use proper proportions.
• Demonstrate sanding preparation and finishing techniques.

USU - Eastern

TECO 1100 Construction Estimating **3 Credits / 90 Clock-Hours**

The Construction Estimating course teaches estimation concepts that include take-offs, labor costs, equipment costs, markups and overhead expenses. Using computer applications, students will learn how to compile a proposal from a set of plans.

• Objectives:
• Demonstrate calculation of construction related estimating.
• Identify key principles in profitability within construction projects.
• Explain and demonstrate feasibility, quantities, and time completions for construction projects.
• Use computer applications to organize a bid proposal or estimate.

TECO 1600 Building Site Layout **2 Credits / 60 Clock-Hours**

This course covers site selection, building placement, using a builder's level, establishing grades, setback requirements and squaring a foundation. Students learn about material types for foundations. Types of foundations studied include basements, crawl spaces, and slab on grade.

Objectives:
• Demonstrate proper workplace communication and job site safety.
• Demonstrate proper use of layout process.
• Identify and implement code related to building set back.
• Demonstrate knowledge of various foundation types.
• Demonstrate mathematics related to squaring and site layout.

TECO 1610 Specialty Construction Lab **2 Credits / 60 Clock-Hours**

This course allows students additional application of methods they have learned. It is project based and students will utilize construction materials in interior and/or exterior construction.

Objectives:
• Demonstrate proper workplace communication and job site safety.
• Demonstrate proper use of tools and construction methods.
• Demonstrate advanced competency with construction applications.

TECO 1620 Masonry **2 Credits / 60 Clock-Hours**

This course introduces mortar types, mixes, coloring agents, and additives, and when, where, and how to use them; pouring and reinforcing concrete footers, slabs, and flatwork; block and brick wall construction; masonry veneer construction; and brick floors and pavements.

Objectives:
• Demonstrate proper workplace and job site safety.
• Demonstrate proper masonry terminology.
• Identify various types of stone, brick, mortar and concrete and their application.
• Demonstrate proper use of hand and power tools.
• Demonstrate proper masonry technique.

TECO 1700 HVAC Maintenance **2 Credits / 60 Clock-Hours**

This course allows students additional application of methods they have learned. It is project based and students will utilize construction materials in interior and/or exterior construction.

Objectives:
• Demonstrate proper workplace communication and job site safety.
• Demonstrate proper use of tools and construction methods.
• Demonstrate advanced competency with construction applications.

TECO 1710 Plumbing Maintenance **2 Credits / 60 Clock-Hours**

This is an introductory course to plumbing in residential and commercial buildings. It is focused on maintenance and troubleshooting, proper tools and use, safety and overview of plumbing systems.

Objectives:
• Demonstrate proper terminology related to plumbing.
• Demonstrate proper tools and use for plumbing maintenance.
• Demonstrate proper troubleshooting methods.
• Explain functionality of plumbing systems, fixtures and components.
• Demonstrate basic maintenance and common part and fixture replacement.

TECO 1720 Electrical Maintenance **2 Credits / 60 Clock-Hours**

This is an introductory course to electrical systems in residential and commercial buildings. It is focused on terminology, maintenance and troubleshooting, proper tools and use, safety and overview of electrical circuits.

Objectives:
• Demonstrate proper terminology related to electrical maintenance.
• Demonstrate proper tools for and use for electrical maintenance.
• Demonstrate proper troubleshooting methods.
• Explain functionality of electrical circuits, fixtures and components.
• Demonstrate basic maintenance and common electrical related part and fixture replacement

TECO 1730 Electronic and Technical Maintenance for Buildings **3 Credits / 90 Clock-Hours**

This course focuses on the technical problems associated with commercial, industrial and governmental buildings where everyday use results in high maintenance of technical aspects of the building. Doors, locks, sensors, electronic, mechanical and office technology are addressed in this course.

Objectives:
• Demonstrate proper safety, attitude and communication relating to everyday technical problems.
• Demonstrate proper use of tools and terminology related to the issue.
• Explain basic troubleshooting processes related to electronics, mechanical items, appliances and/or office equipment.
• Demonstrate ability to utilize troubleshooting manuals or item specific manuals.
• Demonstrate basic computer literacy and ability to successfully utilize online resources for fixing technical problems.

TECO 1740 Interior and Exterior Building Maintenance **2 Credits / 60 Clock-Hours**

This course involves identification and implementation of preventative and ongoing maintenance for interior and exterior finishes on buildings. Topics addressed may include safety, roofs, windows, doors, exterior finishes, trim, weather related issues, caulking, sealing, patching and painting of surfaces.

Objectives:
• Demonstrate ability to use online and manual resources to solve interior and exterior related maintenance problems.
• Demonstrate proper use of tools and the ability to order parts and supplies.
• Explain what preventative maintenance is and why it is important.
• Demonstrate scheduled preventative maintenance processes and schedules.

TECO 1750 Pool and Spa Maintenance **1 Credit / 30 Clock-Hours**

This course teaches Pool and Spa maintenance and prepares individuals for certification of Pool and Spa Maintenance Operator.

Objectives:
• Demonstrate and explain pool and spa health and safety regulations.
• Demonstrate competency with Pool Water Chemistry.
• Explain the Virginia Graeme Baker (VGB) Codes.
• Explain the SARA Title III.

TEHE 1050 Skid Steer/Compact Loader Operation **2 Credits / 60 Clock-Hours**

This course will cover the fundamentals of skid steer and compact loader operation.

Objectives:
• Demonstrate safe start procedures for the equipment.
• Properly conduct a pre-operation inspection and related maintenance.
• Identify and explain the proper use of the machine and associated control devices.
• Demonstrate basic operating techniques.

TEHE 1100 Hydraulic Excavator Operation **2 Credits / 60 Clock-Hours**

This course will cover safety related to and the fundamental operation of hydraulic excavators.

Objectives:
• Demonstrate safe start procedures for the equipment.
• Properly conduct a pre-operation inspection and related maintenance.
• Identify and explain the proper use of the machine and associated control devices.
• Demonstrate basic operating techniques.

TEHE 1400 Forklift Operation **1 Credit / 30 Clock-Hours**

This course will cover safety related to and the fundamental operation of forklifts.

Objectives:
• Demonstrate safe start procedures for the equipment.
• Properly conduct a pre-operation inspection and related maintenance.
• Identify and explain the proper use of the machine and associated control devices.
• Demonstrate basic operating techniques.

TEHE 1600 Aerial Boom Lift/Scissor Lift Operation **2 Credits / 60 Clock-Hours**

This course will cover safety related to and the fundamental operation of aerial boom lifts and scissor lifts.

Objectives:
• Demonstrate safe start procedures for the equipment.
• Properly conduct a pre-operation inspection and related maintenance.
• Identify and explain the proper use of the machine and associated control devices.
• Demonstrate basic operating techniques.