

# CONSTRUCTION TECHNOLOGY (CON)

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## CON 104 Construction Framing I (3 Credits)

15 lecture, 60 lab, 3 total contact hours

This course covers light frame construction for homes and light industrial buildings. Construction theory in class is included to support lab activities on and offsite. Students will discuss layout techniques, materials required, and proper safety for deck and platform structures, demolition of existing systems, foundation systems and rough stair systems. Level I Prerequisite: Academic Reading Level 5; Academic Writing Level 3; Academic Math Level 1; CON 108 minimum grade "C"

## CON 105 Construction Framing II (3 Credits)

15 lecture, 60 lab, 3 total contact hours

This course covers light frame construction for homes and light industrial buildings to include wall framing, roof framing, and installation of doors and windows. Construction theory in class is included to support lab activities on and offsite. Students will discuss layout techniques, materials required and proper safety regulations for building these structural systems. Level I Prerequisite: Academic Reading Level of 5; Academic Writing Level of 3; Academic Math Level 1; CON 104 and CON 108, minimum grade "C"; CON 104 may enroll concurrently

## CON 108 Introduction to Construction Technology (2 Credits)

15 lecture, 30 lab, 2 total contact hours

This is an introductory course for students with little or no prior construction training. Students will be introduced to construction terminology, materials, tool usage and methods of measurement. Students will become familiar with construction safety requirements and proper handling of materials, tools and equipment used at all levels of construction projects. Students with acceptable experience or training should contact instructor for an override into the next course in sequence. Level I Prerequisite: Academic Reading Level 5; Academic Writing Level 3; Academic Math Level 1

## CON 141 Commercial Building Maintenance I (3 Credits)

30 lecture, 15 lab, 3 total contact hours

This course introduces students to the State of Michigan codes and regulations that must be followed when maintaining a commercial building. Students will learn building communication techniques as well as basic electrical theory and practice as they apply when working in a commercial facility maintenance position. Level I Prerequisite: Academic Reading and Writing Levels of 6; consent required

## CON 145 Commercial Building Maintenance II (3 Credits)

30 lecture, 15 lab, 3 total contact hours

This course continues the Commercial Building Maintenance program. Students will learn to troubleshoot and correct basic commercial building issues including ceilings, doors, windows, walls, floor finishes and commercial furnishings. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 141; consent required

## CON 147 Commercial Building Maintenance III (3 Credits)

45 lecture, 3 total contact hours

In this course, students continue their training in Commercial Building Maintenance. Students will troubleshoot and correct basic commercial building heating, cooling and ventilation issues such as returns, filters, thermostats and other commercial heating, cooling and ventilation components. Level I Prerequisite: Academic Reading and Writing Levels of 6; consent required

## CON 149 Commercial Building Maintenance IV (3 Credits)

30 lecture, 15 lab, 3 total contact hours

Students will be introduced to University of Michigan sustainable technology, telecommunication, pumps and filter systems and vocational lab specific equipment. Students will become familiar with the mechanical, electrical, computer and other components of the systems and equipment. Following manufacturer specifications and recommendations, students will diagnose and perform minor repairs on this equipment. Standard procedures and safety will be emphasized. Level I Prerequisite: Academic Reading and Writing Levels of 6; Must be U of M contracted facility department to enroll; consent required

## CON 170 Cabinetry and Millwork I (3 Credits)

30 lecture, 30 lab, 3 total contact hours

Students will apply basic tool set up and operation for all hand and stationary tools necessary to complete fabrication and veneer application. There will be a focus on proper use and assembly of the materials. These techniques will be used for identifying and preparing rough and manufactured lumber for further working into panels, lathe and molding blanks, doors, drawers and miscellaneous components. Each student will build a cabinet from rough lumber, incorporating a fitted drawer and a frame and panel door using a raised panel, hung on mortised butt hinges. The title of this course was previously Introduction to Cabinetry and Millwork. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 108 minimum grade "C", may enroll concurrently

## CON 173 Cabinetry and Millwork II (3 Credits)

15 lecture, 45 lab, 3 total contact hours

In this course, students will apply tool set up and operation for advanced hand and stationary tools. These techniques will be used for identifying and preparing rough lumber, manufactured lumber, and plastics for working into complex assemblies. There will be a focus on using the vacuum press and other techniques to fabricate curved and freeform components. Each student will produce at least one piece of furniture or millwork of appropriate complexity; this project is chosen by the student consultation with the instructor. This course was previously TRI 171. The title of this course was previously Cabinet Making Principles and Concepts. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 170 minimum grade "C"

## CON 174 CON Co-op Education I (1-3 Credits)

120 to 360 clinical/other, 1 to 3 total contact hours

In this course, students gain skills from a new experience in an approved, compensated position in the field of construction. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. Level I Prerequisite: Academic Reading and Writing Levels of 6; consent required

## CON 175 Cabinetry and Millwork III (3 Credits)

15 lecture, 45 lab, 3 total contact hours

The students will build upon the skills learned in prerequisite courses with a goal of creating and manufacturing an entire piece of furniture from rough lumber, manufactured lumber, and plastic. The focus will be to complete the construction of a piece of furniture of appropriate complexity. Students will further their mastery of hand and machine tool maintenance. This course was previously TRI 271. The title of this course was previously Cabinet Making Fabrication. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 173 minimum grade "C"

**CON 204 Construction Finishes - Interior (3 Credits)**

15 lecture, 60 lab, 3 total contact hours

This course covers the installation of interior finishes for homes and light industrial buildings to include insulation, drywall applications, flooring, and interior trim. Construction theory in class is included to support lab activities on and offsite. Students will discuss layout techniques, materials required and proper safety regulations for finishing interiors per industry standards. This course was previously Residential Construction III. Level I Prerequisite: Academic Reading and Writing Levels of 6; Academic Math Level 3; CON 105 minimum grade "C", may enroll concurrently

**CON 205 Construction Finishes - Exterior (3 Credits)**

15 lecture, 60 lab, 3 total contact hours

This course covers exterior finishes for homes and light industrial buildings to include siding, roofing, and waterproofing systems. Construction theory in class is included to support lab activities on and offsite. Students will discuss layout techniques, materials required, and proper safety regulations for finishing exteriors per industry standards. This course was previously Residential Construction IV. Level I Prerequisite: Academic Reading and Writing Levels of 6; Academic Math Level 3; CON 105 minimum grade "C", may enroll concurrently

**CON 230 Construction Production (3 Credits)**

45 lecture, 3 total contact hours

In this course, students are introduced to the production aspect of light frame construction. Students will be using house plans to estimate materials, schedule trades, and prepare quality control "punch lists" based upon materials and trades used. Topics include construction materials, estimating, scheduling and quality control. The title of this course was previously Residential Construction Production. Level I Prerequisite: Academic Reading and Writing Levels of 6; Academic Math Level 3; CON 205 minimum grade "C"

**CON 250 Cabinet Shop Management and Fundamentals (3 Credits)**

45 lecture, 3 total contact hours

In this course, students learn about job cost tracking, mechanical detailing, and plan execution. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 175 minimum grade "C"

**CON 255 Construction Concrete and Masonry (3 Credits)**

15 lecture, 60 lab, 3 total contact hours

This course covers concrete and masonry finishes for homes and light industrial buildings to include foundations, slabs, brick, block and stone. Construction theory in class is included to support lab activities on and offsite. Students will discuss layout techniques, materials required, and proper safety regulations for completing concrete and masonry projects per industry standards. This course was previously Residential Construction Concrete and Exterior Finishes. Level I Prerequisite: Academic Reading and Writing Levels of 6; Academic Math Level 3; CON 104 minimum grade "C"

**CON 274 CON Co-op Education II (1-3 Credits)**

120 to 360 clinical/other, 1 to 3 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 174; consent required

**CON 275 Cabinetry and Millwork IV (3 Credits)**

15 lecture, 45 lab, 3 total contact hours

Using various finishing materials (oil-based, shellac, lacquer, modern resin, catalyzed and multi-part systems) students will learn how to prepare cabinetry and millwork materials for finishing. The course will include detailed explanations of wiped, rolled, brush and spray applications of cabinet and furniture finishes. Students will learn finishing techniques using proper industry set up and safety standards. The title of this course was previously Finishing Concepts and Processes. Level I Prerequisite: Academic Reading and Writing Levels of 6; CON 175 minimum grade "C"