

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Design & Drafting Technology Program
Revision Date: August 22, 2022

I. CATALOG DESCRIPTION

Course Number: DDRT1170
Course Title: Light Construction Materials and Methods
Prerequisite(s): None
Catalog Description: You will study the common building materials used in many areas and stages of residential and light commercial construction.
Credit Hours: 3
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II. COURSE OBJECTIVES: *Course will:*

- A. Introduce terminology and definitions used in light commercial construction.
- B. Examine materials used in residential and light commercial construction.
- C. Discuss concrete uses, placement, enhancement, and reinforcement.
- D. Distinguish between precast concrete and cast in place concrete.
- E. Discuss the uses of wood in residential and light commercial construction.
- F. Differentiate between softwoods and hardwoods.
- G. Describe the requirements for treated lumber.
- H. Describe the different uses for dimensional lumber, engineered lumber, and panel products.
- I. Discuss the uses of masonry materials in residential and light commercial construction.
- J. Demonstrate the modular coursing rules as they apply to foundations and masonry structures.
- K. Introduce the different styles and functions of doors and windows.
- L. Discuss the different shapes and styles of stairs.
- M. Discuss a variety of different exterior finish materials for walls and roofs in residential and light commercial construction.
- N. Discuss the different roof styles and framing layouts.
- O. Demonstrate common material connection methods used in residential and light commercial construction.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Define different terms used in construction.
 - 2. Identify rebar and select the amount, spacing and location of reinforcing required for a foundation wall and footing.
 - 3. Describe how concrete placement and curing impact the quality of the concrete building elements.
 - 4. Describe different varieties of dimensional lumber, engineered lumber and panel products as they relate to residential and light commercial construction.
 - 5. Determine the correct size of framing members using dimensional lumber, I-joist, and trusses.
 - 6. Identify the different types of windows and doors used in residential and light commercial construction.
 - 7. Identify the different types of masonry units used in residential and light commercial construction.

8. Layout a variety of building footprints with dimensions that accommodate modular construction.
 9. Select windows and doors that provide the correct amount of light and ventilation and provide proper egress from the building.
 10. Calculate the overall rise of a stair from finish floor to finish floor using a variety of types of wall construction.
 11. Calculate the individual tread and riser size for a stair.
 12. Annotate the handrail and head room requirements for a stair.
 13. Locate the ridge, valley, rakes, and eaves for a variety of building footprints with a gable or hip roof.
 14. Describe the different assemblies related to floor, wall and roof construction.
 15. Describe the different assemblies related to the construction of footings and foundations.
 16. Describe the different assemblies related to door and window opening construction.
 17. Compile the information required in door and window schedules.
- B. General Education Learning Outcomes (GELOs)**
1. GELO #3: Critical Thinking and Problem Solving
Outcome 5: Acquire and integrate knowledge and construct relationships across disciplines.

IV. CONTENT/TOPICAL OUTLINE

- A. Construction Materials**
 1. Concrete construction
 2. Wood frame construction
 3. Masonry construction
- B. Construction Methods**
 1. Foundations
 2. Floors & Walls
 3. Openings
 4. Exterior Finishes
 5. Stair Design & Details
 6. Roof Design
 7. Architectural Connection Details

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):**
 1. Allen & Thallon, *Fundamentals of Building Residential Construction*, (Refer to CID and/or instructor for current edition)
 2. Thallon, *Graphic Guide to Frame Construction*, (Refer to CID and/or instructor for current edition)
- B. Supplies:** 1/4" grid sketch pad

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:**
 1. Lecture
 2. Demonstration
 3. Classroom discussion
 4. Instructional Handouts
 5. Power Point Presentations
 6. Videos

7. Field Trips

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
1. Attendance and participation
 2. Daily assignments
 3. Written exams and/or quizzes
 4. Performance and observational assessment

VII. SPECIFIC COURSE REQUIREMENTS

- A. Students must meet all of the following to receive a passing grade:
1. Achieve a passing grade of 60% or higher, based on SCC grading scale.
 2. Submit your own work. Students turning in information or homework completed by someone other than themselves will receive a grade of 0% and will be referred to the Dean of Students for further disciplinary action.
 3. Attend every class period. Attendance will be taken in every class or lab. It is the responsibility of the student to master the information covered in any missed classes. Students participating in a college-recognized activity will not be considered absent.
 4. Demonstrate the attitude, skill and character commensurate with industry standards.