CNST A112: STAIR FRAMING

Item	Value
Curriculum Committee Approval Date	11/01/2023
Top Code	095200 - Construction Crafts Technology
Units	3 Total Units
Hours	108 Total Hours (Lecture Hours 27; Lab Hours 81)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Topics of instruction include stair design, building codes, calculations, layout and construction. Practical instruction is given in the use of tools and materials through construction laboratory work. ADVISORY: CNST A180 or CNST A240. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Layout, cut and install stringers for a straight run of stairs from one floor to another.
2. Calculate the number of treads and risers using the rise and run available from a set of plans.

Course Objectives

- 1. Layout, cut and install a straight run of stairs.
- 2. Properly perform a stair calculation that will meet building code requirements for a straight run of stairs.
- 3. Properly estimate the quantities of materials required for a stair case using a set of plans.
- 4. Properly identify the different accepted methods of hanging stair stringers.
- 5. Successfully complete a written comprehensive construction safety examination.
- 6. Properly identify the code requirements for residential and commercial stairs
- 7. Design and frame a stairwell opening in accordance with code requirements.

Lecture Content

INTRODUCTION Building trades Job safety Construction Tools Reading blueprints STAIR DESIGN Straight staircase L-shaped staircase U-shaped staircase Winding staircase Curved staircase Function Safety Terminology Code requirements STAIR LAYOUT Plan reading Rise: run ratios and equations Stair carriage layout Stairwell design and layout Handrails Guardrails Landings

Lab Content

STAIRWELL CONSRUCTION Construct stairwell with appropriate clearances per blueprints. Construct stairwell per code requirements STAIR CONSTRUCTION Stair carriage cutting and installation Riser and tread installation Layout and construction of landings Stair skirt and trim Balustrades Handrails Guardrails Landings

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Instruction methodologies will include, but not necessarily be restricted to the following: 1. Detailed multimedia/lectures of each topic covered. 2. Student feedback during each lecture. 3. Detailed illustrative discussions of lecture handout and textbook information. 4. Building plan reading 5. Full scale/size laboratory construction projects pertaining to subjects discussed during which students work individually and in small groups.

Reading Assignments

Students will spend approximately two hours per week reading from assigned text and materials.

Writing Assignments

Students will need to complete a research paper on the code requirements of stair systems - approximately 1-2 hours per week.

Out-of-class Assignments

Students will spend approximately two hours per week on writing assignments, including the following: 1. Written assignments from the the assigned reading and class lecture.

Demonstration of Critical Thinking

Tests and quizzes Lab construction projects Estimating assignments Stair calculation assignments

Required Writing, Problem Solving, Skills Demonstration

Students must show math proficiency in material board footage calculations, and rise and run calculations. Students must show proficiency in bulding plan reading, identification of proper stair components and understand the International Residential Code.

Eligible Disciplines

Construction technology: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Koel, L.. Carpentry, 7th ed. Orland Park: American Technical Publishers, 2021