ARCH A242: FRAMECAD WORKSHOP 2

Item	Value
Curriculum Committee Approval Date	12/04/2024
Top Code	020100 - Architecture and Architectural Technology
Units	2 Total Units
Hours	54 Total Hours (Lecture Hours 27; Lab Hours 27)
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)

Course Description

FrameCAD Workshop 2 is a project-based continuation of Workshop 1 that develops intermediate level production skills needed to produce steel panel framing systems using FrameCAD software and a FrameCAD F325iT machine. Students will review FrameCAD machine operation and safety and be involved in running production jobs and learning about panel assembly and fabrication workflow on the machine. ADVISORY: ARCH A104 and ARCH A241. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Completers will demonstrate intermediate level skills in producing steel frame panel projects on a FrameCADmachine in a safe manner.
2. Completers will be able to perform intermediate level maintenance duties on the machine.

Course Objectives

- 1. Apply intermediate level of understanding of steel frame and panelization design and production.
- 2. Operate a FrameCAD machine and produce a structure using FrameCAD Factory software.
- 3. Modify a file in FrameCAD Structure and FrameCAD Detailer.
- 4. Design and produce a stick design on the FrameCAD machine.
- 5. Redesign and recode a project in FrameCAD Detailer and export to FrameCAD Factory.
- 6. Perform intermediate level of machine operation and maintenance on a FrameCAD machine and decoiler.
- 7. Safely product a FrameCAD project, assemble the frames, and connect the panels.
- 8. Safely use the hoist to assist in loading steel coil.

Lecture Content

Steel Frame Industry Practices Steel frame production Steel frame panelization Site Visit to steel frame project or company using steel panels FrameCAD Software Applications FrameCAD Structure FrameCAD Detailer FrameCAD Factory Project workflow FrameCAD Machine - Intermediate Machine safety Start up power Decoiler checks Machine checks Maintenance schedule Machine Maintenance - Intermediate Lubrication Cutting Fluid Ink priming Consumable supplies specs cut sheets Production Scheduling - Intermediate File check Time, materials settings Safe output run speeds Project Assembly and workflow - Planning Production Work space organization safety Assembly of panels Panel connection Tranport of project to site

Lab Content

Project Production - Leader Coordination of work stations Documentation and labeling Production on machine and reports Construction Safety - Leader Machine and workspace area safety Tools and fasteners Reading panel diagrams Tool operation Coordinate Panel Assembly Workflow and staging Storage and moving Assembly of panels Transport preparation Coil Handling - Assist Delivery options Storage practices Loading tools inspections Insertion onto decoiler Resetting machine for new coil

Method(s) of Instruction

- Lecture (02)
- Lab (04)

Instructional Techniques

Instruction methods will include: lecture-demonstrations, class discussions, hands-on demonstrations, supervised production and assembly of parts and connection of panels, safety and maintenance demonstrations, and a field study.

Reading Assignments

FrameCAD Machine manuals will be provided for review and study.

Writing Assignments

Students will summarize assigned research into a notebook.

Out-of-class Assignments

Students will research industry practices and examples. Students will collect material data sheets for safety and machine compatibility. Students will be assigned to source supplies and cost out materials and supplies and create a budget total for a project. Outside reading, research, and assignments will be appproximately 4 hours per week.

Demonstration of Critical Thinking

Students will analyze projects and coordinate and organize workflow. Intermediate level students will also assist in training beginning students.

Required Writing, Problem Solving, Skills Demonstration

Students will assess and solve inconsistencies and workflow issues. Students will demonstrate ability to run jobs and operate machine safely. Students will assist beginning students.

Eligible Disciplines

Architecture: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience. Construction management: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience. Engineering: Master's degree in any field of engineering OR bachelor's degree in any of the above AND master's degree in mathematics, physics, computer science, chemistry, or geology OR the equivalent. (NOTE: A bachelor's degree in any field of engineering with a professional engineer's license is an alternative qualification for this discipline.) Master's degree required. Title 5, section 53410.1

Manuals Resources

1. FrameCAD. FrameCAD Machine Operations Manual, FrameCAD Limited , 03-01-2017