CNST A209: CONCRETE FLATWORK

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	095200 - Construction Crafts Technology
Units	2.5 Total Units
Hours	81 Total Hours (Lecture Hours 27; Lab Hours 54)
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

Concrete flatwork, hands on forming, placement and a variety of concrete finishes. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Properly form a concrete slab per industry standards
2. Properly place concrete slabs and comlete with a variety of finishes per industry standards.
3. Estimate quantities of materials needed to complete the placement of a concrete slab

Course Objectives

- 1. Place and finish concrete, including the use of all tools and equipment used in concrete construction
- 2. Apply surveying principles to layouts of elevations.
- 3. Place reinforcement per the Building Code and size reinforcement properly
- 4. Calculate the cubic yards for concrete.

Lecture Content

A. Orientation to construction lab area. 1. Safety procedures for all work in the lab. 2. Safety Examination. B .Basic hand tools for concrete. 1. Power tools for the trade. 2. Learning to use the basic tools. C. Surveying procedures. 1. Surveying instruments and proper use. 2. Determine proper elevations for drainage. D. Demolition 1. Demolition equipment 2. Moving earth E. Pour in place forming. 1. forming of flat slabs 2. forming of ramps F. Concrete options. 1. Ready mixed concrete 2. Mixing your own concrete G. Placing, finishing, and curing concrete 1. Methods of transporting concrete. 2. Joints for flatwork. H. Water and aggregates for concrete 1. Air entrainment and other admixtures. 2. Concrete mix design 3. Quantity calculations, proportioning mixes. I. Finishes 1. Broom Finish 2. Salt Finish 3. Exposed Aggregate 4. Stamped concrete

Lab Content

A. Orientation to construction lab area. 1. Safety procedures for all work in the lab. 2. Safety Examination. B .Basic hand tools for concrete. 1. Power tools for the trade. 2. Learning to use the basic tools. C. Surveying procedures. 1. Surveying instruments and proper use. 2. Determine proper elevations for drainage. D. Demolition 1. Demolition equipment 2. so-spacerun: yes; Moving earth E. Pour in place forming. 1. forming of flat slabs 2. forming of ramps F. Concrete options. 1. Ready mixed concrete 2. Mixing your own concrete G. Placing, finishing, and curing concrete 1. Methods of transporting concrete. 2. Joints for flatwork. H. Water and aggregates for concrete 1. Air entrainment and other admixtures. 2. Concrete mix design 3. Quantity calculation s, proportioning mixes. I. Finishes 1. Broom Finish 2. Salt Finish 3. Exposed Aggregate 4. Stamped concrete

Method(s) of Instruction

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

Instructional Techniques

Instructional 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 discussion of lecture handout and textbook information. 4. Building plan reading

Reading Assignments

Students will be assigned a weekly reading assignment dealing with trade practices and building codes. 1-1.5 hours per week.

Writing Assignments

Students must show proficiency in material quantity take of calculations. Students must show proficiency in plan reading and the understanding of building code applications. 1-1.5 hours per week.

Out-of-class Assignments

Students will be assigned approximately 3 hours per week of assignments including a weekly reading assignment dealing with trade practices and building codes.

Demonstration of Critical Thinking

Student must properly estimate the quantity calculations for a slab project.

Required Writing, Problem Solving, Skills Demonstration

Student must properly form a concrete slab per code requirements taking into consideration drainage of properly based on elevations and structural limitations. Student must properly finish concrete slabs with several finishes per industry standards.

Eligible Disciplines

Construction technology: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience. Masonry (concrete, cement work, bricklaying): Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Clois E. Kicklighter. Modern Masonry, eight ed. Goodheart-Wilcox, 2016