

CONS 102 Course Outline as of Fall 2022**CATALOG INFORMATION**

Dept and Nbr: CONS 102 Title: CONST PRACTICE AND TECH

Full Title: Construction Practice and Technologies

Last Reviewed: 9/11/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

Catalog Description:

In this course, students will be introduced to basic and fundamental standard construction methods and sequencing for residential and light commercial buildings. Regular field trips will be required.

Prerequisites/Corequisites:**Recommended Preparation:**

Eligibility for ENGL 1A (or ESL 10) or equivalent

Limits on Enrollment:**Schedule of Classes Information:**

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Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:

IGETC:	Transfer Area	Effective:	Inactive:
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CSU Transfer:	Effective:	Inactive:
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UC Transfer:	Effective:	Inactive:
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CID:

Certificate/Major Applicable:

Certificate Applicable Course

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Describe the proper construction sequencing and order of operations for a typical building project.
2. Analyze the interdependencies of different construction sequences and processes.
3. Explain the connection and relationship of office project management to field project management.
4. Identify proper jobsite etiquette, professional demeanor, communication protocols, and best-work practices as related to field construction.

Objectives:

At the conclusion of this course, the student should be able to:

1. Observe and evaluate current project construction processes, sequencing, and material use at local area jobsites.
2. Use plan-reading skills to understand project implementation and execution during the duration of a project.
3. Maintain a journal of field reports for visited construction sites.
4. Utilize computer-based applications appropriate to facilitate field construction processes.

Topics and Scope:

- I. Field Construction Practice and Technologies Overview
 - A. Construction management site facilities
 - B. Work crews and other site visitors
 - C. Material staging and storage
 - D. Equipment and vehicles
 - E. Tools and supplies storage
 - F. Restroom facilities
 - G. Jobsite security and access
 - H. Safety issues

II. Basic Site Building Layout and Surveying Techniques

- A. Site plans
- B. Property line determinations
- C. Staking-out and marking building and other site components

III. Layout and Installation: Grading and Utilities

- A. Points of connection to infrastructure systems: water, electricity, storm water, sewage, data/telecommunication, and gas
- B. Trenches for utilities
- C. Overhead utilities
- D. Temporary utilities

IV. Use of Basic Hand and Power Tool Technologies Review

V. Foundation and Slab-On-Grade Construction

- A. Concrete formwork
- B. Reinforcing bars and welded-wire fabric in concrete construction
- C. Slab-on-grade construction and sub-slab components: drainage, gravel, vapor barriers, and sand
- D. Foundation types: spread footing, isolated footings, pier and grade beam, pile and pier cap, post-tensioned raft slabs
- E. Construction and control joints in concrete
- F. Concrete embedments

VI. Wood and Light Gauge Steel Framing

- A. Dimensional lumber sizes and species
- B. Cold-formed steel framing member sizes
- C. Typical framing layout for floors, walls, stairs, ceilings, and roofs

VII. Mechanical, Electrical and Plumbing (MEP)

- A. Rough-in MEP: backflow preventors, fire suppression systems, piping, fittings, conduits, conductors, wiring, junction boxes, weatherhead, meters, electrical distribution panels, etc.
- B. Finish MEP: equipment, fixtures, faucets, switches, face plates, diffusers, grilles, thermostats, switches, controls, etc.

VIII. Roofing

- A. Fiberglass composition roofing systems
- B. Emulsion-applied roofing systems
- C. Single-ply mechanical membrane systems
- D. Metal roofing systems

IX. Exterior Envelope Elements

- A. Windows and doors
- B. Flashing, counterflashing, reglets, drip edges, weep screeds, expansion joints, and copings
- C. Vapor barriers
- D. Exterior finishes: metal, wood, plaster, masonry, and veneer
- E. Sealants and coatings
- F. Thermal insulation: Fiberglass batt, cellulose, foam-in-place, and rigid insulation systems
- G. Exterior finish trim work
- H. Gutters, rainwater leaders, downspouts, diverters, scuppers, and collection boxes

X. Interior Finish

- A. Floors
 1. Wood finish flooring and installation
 2. Sheet products and installation
 3. Tile products and installation
 4. Emulsion applied products
 5. Sealants
- B. Walls
 1. Gypsum wallboard products and installation

2. Glass mortar units
 3. Fiberglass reinforced panels (FRP)
 4. Wood finishes
- C. Ceilings
1. Gypsum board products and installation
 2. Suspended panel systems
 3. Wood ceilings
- D. Casework
1. Cabinetry and countertops
 2. Window and door casework and trim
 3. Baseboards, moldings, and other interior trim
- XI. Inspections and Observations
- A. Building department inspections
 - B. Special inspections
 - C. Architectural and structural observations and field reports
- XII. Trades and Scope of Work Coordination

Assignment:

1. Reading assignments (10-20 pages per week)
2. Study question sets (1-3 weekly)
3. Field Reports (6-12)
4. Quiz(zes) (1-4)
5. Midterm exam
6. Final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Field reports	Writing 10 - 20%
Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.	
Study question sets	Problem solving 20 - 50%
Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.	
None	Skill Demonstrations 0 - 0%
Exams: All forms of formal testing, other than skill performance exams.	
Quiz(zes) and exams	Exams 30 - 50%

Other: Includes any assessment tools that do not logically fit into the above categories.

Class participation

Other Category
5 - 10%

Representative Textbooks and Materials:

Instructor prepared materials