

CONS 101 Course Outline as of Fall 2022**CATALOG INFORMATION**

Dept and Nbr: CONS 101 Title: INTRO TO CONS INDUSTRY

Full Title: Introduction to the Construction Industry

Last Reviewed: 12:00:00 AM

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 an overview of the construction industry, including careers within the construction industry, roles and responsibilities within a construction firm, the construction project lifecycle and management of that process, safety issues, related agencies and organizations, and an introduction to basic construction hand and power tools. Field trips will be required.

Prerequisites/Corequisites:**Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: In this course students will be introduced to an overview of the construction industry, including careers within the construction industry, roles and responsibilities within a construction firm, the construction project lifecycle and management of that process, safety issues, related agencies and organizations, and an introduction to basic construction hand and

power tools. Field trips will be required. (Grade Only)

Prerequisites/Corequisites:

Recommended:

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

Approval and Dates

Version:	01	Course Created/Approved:
Version Created:	12/11/2021	Course Last Modified: 12/20/2021
Submitter:	Robert Grandmaison	Course last full review:
Version Status:	Draft New Course (First Version)	Prereq Created/Approved:
Version Status Date:	12/11/2021	Semester Last Taught:
Version Term Effective:	Fall 2022	Term Inactive:

COURSE CONTENT

Student Learning Outcomes:

Upon completion of the course, students will be able to:

1. Describe the constituent roles of and responsibilities for members of a construction firm.
2. Identify potential workplace hazards and propose potential mitigation steps to prevent injury or illness.
3. Identify common workplace tools and describe their intended use and operation.
4. Explain the general process by which building projects typically follow from inception to completion.

Objectives:

In order to achieve these learning outcomes, during the course students will:

1. Examine the varied roles of and responsibilities for different members of a construction firm.
2. Discuss issues of safety and prevention of injury or illness due to potential hazards of the workplace environment for construction workers.
3. Attend field trips to tool vendors and rental yards to observe and handle tools commonly used throughout the construction industry.
4. Review and research completed or in-progress construction projects.

5. Calculate lengths, areas, and volumes from measurements taken from architectural drawings as typically used in the construction industry.

Topics and Scope:

I. Overview of the Construction Industry

A. History of construction and construction trades

1. Brief historical overview
2. Seasonality
3. Impact from economy
4. Finances

B. Types of construction

1. Residential
2. Commercial
3. Civil

II. Introduction to Career Roles and Responsibilities

A. Construction firm types and organization

1. General
2. Subcontractor

B. Union versus non-union firms

C. Examples of local firms

D. Scalar responsibilities/duties

E. Project client/owner types

1. Private individuals
2. Corporate entities
3. Public agencies

F. Construction firm employees

1. Craftsperson
 - a. Laborer
 - b. Apprentice
 - c. Journeyperson
2. Project manager
3. Accountant
4. Superintendent
5. Scheduler
6. Construction manager
7. Estimator
8. Dispatcher
9. Field engineer
10. Safety personnel

III. Allied Professionals, Businesses, and Agencies

A. Designers

1. Architect
2. Landscape architect
3. Interior designer
4. Building Designer

B. Engineers

1. Geotechnical
2. Civil/Survey
3. Structural
4. Mechanical
5. Electrical and lighting

- 6. Acoustical
- C. Project consultants
 - 1. Sustainability and Leadership in Energy and Environmental Design (LEED)
 - 2. Energy compliance
 - 3. Historical/cultural
 - 4. Community liaison
 - 5. Certified Accessibility Specialist (CASp)
- D. Materials/equipment suppliers
 - 1. Equipment rental
 - 2. Sanitation equipment
 - 3. Materials suppliers
- E. Insurance and bonding agents
- F. Project funding agencies
- G. Attorneys
- H. Governmental agencies
 - 1. Occupational Safety and Health Administration (OSHA)
 - 2. California Contractors State Licensing Board (CSLB)
 - 3. Local building and planning departments and officials
 - 4. Division of the State Architect (DSA)
 - 5. International Code Council (ICC)
 - 6. California Administrative Code (CAC) and the California Building Code (CBC)
- I. Industry support organizations
 - 1. Builder's exchanges: North Coast Builder's Exchange (NCBE)
 - 2. California Building Industry Association (CBIA)
 - 3. Construction Specifications Institute (CSI)
 - 4. The Associated General Contractors (AGC)
 - 5. Associated Builders and Contractors (ABC)
 - 6. American Institute of Constructors (AIC)
 - 7. Construction Management Association of America (CMAA)
 - 8. Design-Build Institute of America (DBIA)
 - 9. National Association of Home Builders (NAHB)
 - 10. Retail Contractors Association (RCA)
 - 11. The Mechanical Contractors Association of America (MCAA)
- IV. Construction Safety and Material Handling
 - A. Worker health and wellness
 - 1. Nutrition
 - 2. Sleep
 - 3. Ergonomics
 - B. CPR and first aid
 - C. Injuries and prevention
 - D. Occupational hazards
 - 1. Falls
 - 2. Being struck or crushed
 - 3. Confined spaces
 - 4. Electrocution
 - 5. Fires
 - 6. Explosions
 - 7. Gases
 - 8. Toxicity: lead, solvents, Volatile Organic Compounds (VOC), and skin, eye, and respiratory irritants
 - 9. Sunlight
 - 10. Heat and cold

- 11. Sound
- 12. Molds and other biological elements
- E. Personal Protective Equipment (PPE)
 - 1. Footwear
 - 2. Hardhats
 - 3. Vests
 - 4. Harnesses
 - 5. Gloves
 - 6. Eye protection
 - 7. Hearing protection
 - 8. Environmental monitors
 - 9. Respiratory protection
- F. Injury and Illness Protective Program (IIPP)
- G. Forklift and vehicle certifications
- H. Aerial lifts
- I. Heavy lifts
- J. Scaffolding and ladders
- K. Fall protection
- L. Cranes
- M. Hoists
- N. Hazard communications: tag-out and lock-out
- O. Material staging
- P. Unemployment and disability
- V. Introduction to Basic Construction Hand and Power Tools
 - A. Hand tools
 - B. Power tools
 - 1. Corded tools
 - 2. Cordless tools
 - a. Gasoline-powered tools
 - b. Battery-powered tools
 - 3. Pneumatic tools
 - 4. Power-actuated fastener tools
 - C. Measuring tools
 - 1. Levels and plumbs: string bob, bubble, and digital levels types
 - 2. Tape measures: tape coil and laser types
 - 3. The architect's scales
 - 4. The carpenter's square
 - D. Survey tools
 - E. Ladders and scaffolding
 - F. Tool belts
 - G. Tool storage
 - H. Tool maintenance and care
 - I. Mobile technology: Tablets and smartphones
 - J. Pumps: air and water
 - K. Dust and dirt confinement systems
 - L. Field trips: tool supplier and tool rental yard
- VI. Construction Math and Measurement
 - A. Imperial and metric units of measurement and conversions
 - B. Basic trigonometry
 - C. Pythagorean theorem and geometry
 - D. How to read a tape and laser measurer for distance measurements
 - E. Unit measurement

- F. Volume calculations
- G. Length calculations
- H. Area calculations
- I. Construction materials waste calculations
- J. Time budgeting
- VII. Employment Skills and Communication
 - A. Work ethic
 - B. Hard skills
 - C. Soft skills
 - 1. Eye contact
 - 2. Handshakes
 - 3. Proper attire
 - 4. Professional and informal communications
 - a. Phone skills
 - b. Writing skills
 - c. Response time
 - 5. Customer communications
 - 6. Coworker communications
 - a. Daily reports
 - b. Log books
 - 7. Social media and online presence
- VIII. Construction Industry Rules and Regulations Overview Discussion
 - A. Discussions regarding the construction industry impact and interaction of industry agencies and regulations including: CSLB, CBC and other building codes, Title 24, OSHA, and ordinances
- IX. Overview of the Building Process and a Project Lifecycle
 - A. Planning and design
 - B. Drawings and specifications
 - C. Building permit process
 - D. Competitive bidding process
 - E. Design-build process
 - F. Contracts
 - G. Construction process
 - H. Building inspections
 - I. Project observations by others
 - J. Change orders
 - K. Punch lists
 - L. Project close-out and Certificate of Occupancy
 - M. Warranty
 - N. Maintenance

Assignment:

1. Reading assignments (10-20 pages per week)
2. Study question sets (1-3 weekly)
3. Interview research report(s) (1-3)
4. Quizzes (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.

Interview research report

Writing
5 - 10%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Study question sets

Problem solving
30 - 60%

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.

Quizzes 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:

Construction Project Management. 6th edition. Sears, Keoki, Sears, Glenn, Clough, Richard, Rounds, Jerald, and Segne, Robert. Wiley. 2015 (classic)

Project Management in Construction. 5th edition. Levy, S. McGraw Hill. 2006 (classic)

Construction Project Management. 4th edition. Gould, F. and Joyce, N. Pearson. 2014 (classic)

Construction Project Management. 2nd edition. Dykstra, Alison. Kirschner Publishing. 2018

Instructor prepared materials

OTHER REQUIRED ELEMENTS

STUDENT PREPARATION

Matric Assessment Required:	E	Requires English Assessment
Prerequisites-generate description:	NP	No Prerequisite
Advisories-generate description:	NA	No Advisory
Prereq-provisional:	N	NO
Prereq/coreq-registration check:	N	No Prerequisite Rules Exist
Requires instructor signature:	N	Instructor's Signature Not Required

BASIC INFORMATION, HOURS/UNITS & REPEATABILITY

Method of instruction:	02	Lecture
	90	Field Experience / Field Trip
Area department:	ENGR	Engineering and Applied Technology
Division:	73	Science, Technology, Engineering & Mathematics
Special topic course:	N	Not a Special Topic Course
Program status:	1	Certificate Applicable Course
Repeatability:	00	Two Repeats if Grade was D, F, NC, or NP
Repeat group id:		

SCHEDULING

Audit allowed:	N	Not Auditable
Open entry/exit:	N	Not Open Entry/Open Exit
Credit by exam:	N	Credit by examination not allowed
Budget code: Program:	0000	Unrestricted
Budget code: Activity:	0909	Construction Technology

OTHER CODES

Discipline:	Construction Management OR Construction Technology OR Architecture	
Basic skills:	N	Not a Basic Skills Course
Level below transfer:	A	1 Level Below the Transferable Level
CVU/CVC status:	N	Not Distance Ed
Distance Ed Approved:	N	
Emergency Distance Ed Approved:	N	None
Non-credit category:	Y	Not Applicable, Credit Course
Classification:	Y	Career-Technical Education
SAM classification:	B	Advanced Occupational
TOP code:	0957.00	Civil and Construction Management Tech
Work-based learning:	N	Does Not Include Work-Based Learning
DSPS course:	N	Not a DSPS Course
In-service:	N	Not an in-Service Course