



CEP-954: INTRODUCTION TO CONSTRUCTION

Effective Term

Fall 2026

BOT Approval Date

06/12/2025

Discipline

CEP - Career Enhancement Program

Course Number

954

Course Title

Introduction to Construction

Short Title

Intro to Construction

Credit Status (CB 04)

N - Noncredit

Non-Credit Hours**Minimum Contact Hours**

24

Maximum Contact Hours

80

Distance Education

Yes

Distance Education**Distance Education Type**

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:

- a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
- b. Any planned face-to-face meetings, such as an orientation or study session, must be optional
- c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools

(such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.

- **Timely Feedback** - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- **Scheduled Meetings** – Hybrid and synchronous courses will meet at regularly scheduled times.

ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course covers the fundamentals of construction, focusing on skills and vocational techniques. Topics include safety, tools and equipment, materials, basic math for construction, green building practices, the heritage of American workers, and diversity in the industry. Students will also learn employability and communication skills for the construction field.

Requisites

Recommended Preparation

Recommended Preparation (note that students can enroll in the class even if they haven't take the recommended course)

CASAS score of 213 or above or initial interview with instructor to demonstrate English proficiency.

Codes

TOP Code (CB 03)

0952.00* - *Construction Crafts Technology

CIP Code

46.0415 - Building Construction Technology.

Repeatability Code

Yes

Number of times course can be repeated

Unlimited

Reason for Repeatable

Non-credit

Minimum Qualifications

Minimum Qualifications	And/Or
Construction Management	Or
Construction Technology	End

Learning Objectives

Learning Objectives

Learning Objective
1. Demonstrate the skills necessary for employment as an entry-level worker in the construction industry.
2. Categorize the basic components of residential and commercial construction.
3. Practice basic math and measuring techniques skills required in the construction industry.
4. Analyze the importance of diversity and inclusion in the construction industry, identifying common barriers to inclusion and strategies to promote an equitable workforce.
5. Evaluate different types of construction materials and their applications in residential and commercial projects.
6. Analyze the role of diversity, equity, and inclusion in the construction industry, and evaluate how diverse teams contribute to improved outcomes and workplace dynamics.
7. Critique the key principles of green design and its application in construction.
8. Evaluate the safety precautions necessary for mitigating common job-site hazards.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Students will practice reading and interpreting simple blueprints.
2. Students will describe the roles and responsibilities of workers.
3. Students will solve simple math problems related to material estimations.
4. Students will understand the benefits of a diverse workforce on team dynamics and productivity.
5. Students will identify and describe common construction materials.
6. Students will demonstrate knowledge of proper safety equipment and apply safety measures to mitigate job-site hazards.

Content

Non-Credit Content

1. Construction Industry Orientation
 - a. Opportunities in the Construction Industry
 - i. Recognizing the importance of diversity in construction
 - ii. Types of Construction
 1. Residential
 2. Commercial
 3. Industrial
 4. Infrastructure/Heavy Civil
 5. Institutional
 6. Environmental
 - b. Overview of Trades Involved in Construction
 - c. Employer and Employee Safety Obligations
 - d. Job Seeking Skills
 - e. Starting a New Job
 - i. Barriers to Inclusion in the Industry
 - f. Getting Along with Supervisor and Coworkers
 - i. Equitable Work Environment
 - ii. Job Site Hierarchy
 - g. Financial Literacy During Employment
2. Tools and Materials
 - a. Tools and Equipment
 - i. Hand Tools
 - ii. Power Tools
 - iii. Equipment Applications
 - iv. Operation Techniques
 - v. Procedures
 - b. Materials
 - i. Wood
 - ii. Concrete
 - iii. Roofing
 - iv. Plumbing
 - v. Electrical
 - vi. Steel
 - vii. Glass
 - viii. Paints and Finishes
 - ix. Plastic
3. Blueprint Reading
 - a. Fundamentals of Blueprints
 - b. Blueprints for Construction Procedures
 - c. Views

4. Basic Math for Construction
 - a. Measuring Techniques for Accuracy
 - b. Arithmetic Operators
 - c. Whole Numbers
 - d. Solving Word Problems
 - e. Measurements and Fractions
 - f. Decimals
 - g. Conversion Process
 - h. Ratio, Percentage, and Proportion
5. Green Construction
 - a. Green Building Techniques
 - b. New Green Construction
 - c. Green Building Resources and Materials
6. Construction Health and Safety
 - a. Terms and Definitions Associated with Safety
 - b. Reasons for Safety
 - c. Job Safety Rules
 - d. Safety Precautions Related to Scaffolds and Ladders
 - e. Descriptions of Classes of Fire
 - f. Terms and Definitions Associated with Toxic Substances
 - g. Terms and Definitions Associated with First Aid
 - h. Construction Trades Job-Related Injuries
 - i. First Aid Actions Followed in an Emergency
 - j. Consequences of Drug and Alcohol Use
7. Heritage of the American Worker
 - a. Milestones for the Labor Movement
 - b. Working Class in America Today
 - c. Current State of Organized Labor
 - d. Union Advantages
8. Diversity, Equity and Inclusion in the Construction Field
 - a. Importances and Advantages of Diversity in the Construction Industry
 - b. Strategies for Creating an Inclusive Workforce
 - i. Enhancing Innovation and Productivity
 - ii. Addressing Unconscious Bias and Equity of Opportunity
 - c. Legal and Ethical Considerations in Promoting Equity
 - d. Developing Skills to Contribute to an Inclusive Work Environment
 - e. Addressing Barriers to Inclusion and Promoting Career Advancement for All Workers

Methods of Instruction

Method

Discussion

Integration

Discussion helps students improve their understanding, critical thinking, and collaboration skills. For example, students can share personal experiences related to real-life construction scenarios, which makes theoretical concepts more relevant and connects classroom learning to industry practice.

DE Adaptations for MOI

In an online environment, students can respond to posts made by the instructor in the CMS or share their thoughts in live sessions through accessible video conferencing software. Discussions will adhere to all accessibility standards.

Method

Lecture

Integration

Lectures provide students with foundational knowledge and key concepts in a structured format. For example, instructors can explain the benefits of a diverse workforce on team dynamics and productivity. This ensures students have a solid base to build on as they advance through the course.

DE Adaptations for MOI

Lectures can be delivered synchronously or asynchronously using the CMS or accessible video conferencing software. Asynchronous lectures will be accessible for the student to access along with any accessible digital handouts. Lectures will adhere to all accessibility standards.

Method

Observation and Demonstration

Integration

Observation and demonstration will allow students to see first-hand how tools and techniques are properly used in the construction industry. Instructors will demonstrate the safe use and application of various construction tools, providing students with visual, real-time examples of correct techniques and safety practices.

DE Adaptations for MOI

Observation and demonstration can still be implemented using accessible tools such as accessible videos posted in the CMS, simulation software, or through accessible video conferencing software. Observation and demonstration materials will adhere to all accessibility standards.

Methods of Evaluation**Method**

Class Participation

Integration

Class participation allows instructors to assess the students understanding, engagement and ability to apply key concepts in real time. An example of this is the participation of a student and how they contribute to a discussion about construction safety.

DE Adaptations for MOE

Students can participate by using CMS tools to answer discussion questions or through accessible video conferencing software. The instructor can provide feedback and provide support as needed through the CMS or in a live session. Class participation materials will adhere to all accessibility standards.

Method

Homework

Integration

Homework assignments will be evaluated based on the student's application of basic concepts covered in class. An example of this is the student calculating material quantities for a construction project. This will help the instructor evaluate the students problem solving skills, attention to details and provide feedback where further clarification is needed.

DE Adaptations for MOE

Homework can be accessed and submitted through CMS tools. The instructor will provide timely feedback to the student through the CMS tools as well. All homework will adhere to all accessibility standards.

Method

Projects

Integration

Projects will be evaluated based on student's completion of tasks according to industry standards that display their understanding of the basic concepts of the construction trade covered throughout the course. Instructors can assess the technical skills as well as the student ability to problem solve and their proficiency in a particular area.

DE Adaptations for MOE

Students can access project instructions through the CMS and submit their project as well. The instructor can then provide feedback within a timely manner through CMS tools. All project materials will adhere to all accessibility standards.

Method

Group Projects

Integration

Group Projects will be used to evaluate the student ability to collaborate, and analyze industry challenges in the construction setting. An example of a project would be the design of a community shelter when students research how diverse construction teams impact safety, efficiency and innovation. They will also examine common challenges faced by underrepresented groups in construction and propose solutions.

DE Adaptations for MOE

Students can access their group project instructions through the CMS and submit their project as well. The instructor can then provide feedback within a timely manner through CMS tools. All project materials will adhere to all accessibility standards.

Assignments**Assignment Type**

Reading

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Formative

Assignment

Instructions:

Read the Assigned Text:

Read the chapter titled Introduction to Power Tools in the Core: Introduction to Basic Construction Skills book.

After reading, write a brief response (1-2 paragraphs) answering the following questions:

Why is it important to follow safety guidelines when using power tools in construction?

How can knowledge of power tools and safety practices help prevent accidents and injuries on a job site?

Formatting:

Your response should be 1-2 paragraphs in length (approximately 150-200 words).

Use clear, concise language with proper grammar and punctuation.

Ensure your response addresses both questions thoroughly.

Submission:

Submit your response through the course CMS.

Evaluation Criteria:

Your response will be evaluated based on the following:

Content: Clear understanding of the importance of safety when using power tools and the role of safety practices in accident prevention.

Clarity and Organization: Well-organized response with minimal grammatical errors.

Engagement: Demonstrating an understanding of the reading material and applying it to real-world job site scenarios.

How assignment will be adapted in online format

Student can access a prompt posted by the instructor and submit their assignment through the CMS. Instructor feedback will be provided through one of the CMS tools within a week of submission.

Assignment Type

Writing

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Summative

Assignment

Instructions:

Read the Article:

Access the article "Enhancing Construction Industry Diversity: Key Steps" on the ABC SoCal Blog. You can find the article here: <https://abcsocal.org/construction-industry-diversity/>

Writing Assignment:

After reading the article, write a 1-page paper discussing the following:

Key Points: Summarize the main points discussed in the article regarding the need for diversity in the construction industry.

Key Steps: Identify and discuss the specific steps or initiatives mentioned in the article to enhance diversity in the construction workforce.

Personal Reflection: Reflect on why you think diversity is important in construction and how it can affect the industry in terms of innovation, productivity, and workplace dynamics.

Formatting:

Your paper should be one page in length (approximately 250-300 words).

Use clear and concise language, with proper grammar and punctuation.

Include a title for your paper and your name at the top.

Submission:

Submit your 1-page paper through the course CMS.

Evaluation Criteria:

Your paper will be evaluated based on the following:

Content: Clear and accurate summary of the article's key points and steps to enhance diversity.

Reflection: Thoughtful reflection on the importance of diversity in the construction industry.

Clarity and Organization: Clear, well-organized writing with minimal grammatical errors.

Engagement: Demonstrating an understanding of the article and an engagement with the topic.

How assignment will be adapted in online format

Student will respond to the prompt posted by the instructor using CMS tools. Instructor will provide feedback through the CMS in a timely manner.

Course Materials

Textbooks

Pearson, (2021). Core: Introduction to Basic Construction Skills, 6th Edition. ISBN: 978-0137483341
Madsen, David. (2021). Commercial Building Construction: Materials and Methods McGraw-Hill Education. ISBN: 9781260460407
Andres, C., Smith, R., Woods, R. (2019). Principles and Practices of Commercial Construction Pearson . ISBN: 9780134704654
N/A (2017). Career Connections Carpenters International Training Fund. ISBN: N/A
NABTU (2009). Building Trades: Multi-Craft Core Curriculum Building and Trades Department, AFL-CIO. ISBN: none

Class Size Information

Class Size

30

Class Size Category

D - Individualized instruction/group learning/student presentations 30

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

This course is designed to help students gain foundational skills and knowledge essential for success in the construction industry. Instructors aim to create a learning environment that encourages knowledge advancement, teamwork, and a student-centered approach to meet the diverse needs of our students. Students will have opportunities to engage in hands-on activities, exchange ideas, and work collaboratively with peers in a supportive and respectful manner. Their personal experiences and skills will enrich the class and contribute to their success. For example, students will have the chance to demonstrate their understanding by discussing the differences in construction techniques and materials used in their home country versus those commonly used in California. All accessible course materials, including written content, videos, and images, will reflect the diversity of the student population to promote inclusivity and ensure all students feel represented.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

In this course, assignments will be designed with flexibility in mind, allowing students to demonstrate their learning in various formats. The assignments will take into account different learning styles and backgrounds, ensuring that all students, regardless of their prior experience or skill level, can contribute meaningfully. Additionally, assignments incorporate diverse perspectives, allowing students to explore construction practices from different cultures or regions. Instruction will be tailored to engage students with a variety of learning preferences. Accessible visual aids such as diagrams, videos, and blueprints are used alongside verbal

explanations to support comprehension. Instructors foster a learning environment that values each student's input and encourages peer collaboration. Evaluation will be inclusive and fair, focusing on individual progress and growth. Formative assessments, such as quizzes and practical demonstrations, are conducted regularly to track students' understanding and provide timely feedback. The evaluation process emphasizes mastery of key skills and knowledge, rather than a one-time performance. This allows for adjustments in instruction to address any gaps in understanding and supports continuous improvement for all learners. Course content will be relevant and inclusive, featuring examples and case studies that reflect the diversity of the construction industry. Topics like green construction, safety protocols, and building codes are presented with examples from different cultural contexts to highlight the global nature of the field. Materials and resources are chosen to reflect the diversity of the student body, making content relatable and fostering a sense of belonging for all students. Interactions within the classroom will be guided by principles of respect, inclusivity, and collaboration. Group work is structured to promote peer learning, where students from different backgrounds can share insights and learn from one another. Instructors encourage open dialogue, where all students feel safe to express their ideas and perspectives. This approach promotes an environment where students not only gain technical construction skills but also develop communication and teamwork skills that are crucial in the diverse construction workforce.

Interactions

Explain how the course will incorporate student-to-student interaction.

In this course, student-to-student interaction will be integrated through collaborative projects, peer feedback, hands-on activities, problem-solving challenges, discussions, and role-playing exercises. Group projects will require students to work in teams to design and plan a basic construction project, such as a shed or small residential structure, with assigned roles like project manager, estimator, or materials coordinator to encourage teamwork. Peer review sessions will allow students to evaluate each other's work, such as blueprint drafts or safety plans, fostering critical thinking and constructive feedback skills. Hands-on activities will involve teams practicing essential construction tasks, including measuring, cutting, and assembling materials. Additionally, problem-solving challenges will engage students in troubleshooting common construction issues, promoting analytical thinking. Class discussions and breakout sessions will provide opportunities for students to share experiences and explore different approaches to construction techniques. Lastly, role-playing exercises will simulate real-world job site scenarios, such as safety inspections and team coordination meetings. These interactions will ensure that students not only acquire technical construction knowledge but also develop essential teamwork, communication, and problem-solving skills needed for success in the construction industry.

Explain how the course will incorporate instructor-to-student interaction.

The instructor will create opportunities for instructor-to-student interactions both in class and online by utilizing classroom management system (CMS) tools and accessible video conferencing software. The instructor will provide timely feedback on all course assessments, discussions, and activities related to the topics presented in class and online. For example, feedback may include specific comments on a student's approach to using construction materials or safety procedures, along with suggestions for improvement. These interactions will occur in-person, through accessible video conferencing sessions, via posted instructional videos, or through email communication, ensuring all students have various ways to engage with the instructor. The goal is to foster a supportive learning environment where students can receive guidance, clarification, and encouragement to enhance their understanding of the material.

Explain how the course will incorporate student-to-content interaction.

This course will incorporate student-to-content interactions through hands-on exercises, assignments, projects, and discussions, allowing students to apply their learning and practice mastering key construction concepts and skills. Students will engage with a variety of media, including reading texts, watching instructional videos, completing handouts, and exploring various resources that support the course material. CMS tools and accessible video conferencing software will be utilized to enhance learning and provide interactive content. Students will also work on practical course assignments that reinforce the content, such as blueprint reading, tool usage, and safety procedures. Additionally, supplemental materials will be provided to encourage deeper engagement and ensure students have the resources needed to succeed. This approach allows students to interact meaningfully with the course content, reinforcing their understanding and skill development in the construction industry.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Students will be encouraged to reflect on their own development and milestones throughout the course. They will regularly assess their progress by completing self-reflection exercises, which will allow them to evaluate their understanding of key construction concepts and skills. At the beginning and end of each class term, students will also complete practical assessments that focus on their skill development, which will provide them with the opportunity to compare their progress. This process will help students engage in metacognitive practices, enabling them to better monitor their learning journey and identify areas for further growth. By reflecting on their progress, students will gain a clearer understanding of their strengths and areas for improvement in the construction field.