



CEP-955: RESIDENTIAL CONSTRUCTION

Effective Term

Fall 2026

BOT Approval Date

06/12/2025

Discipline

CEP - Career Enhancement Program

Course Number

955

Course Title

Residential Construction

Short Title

Residential 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 provides a hands-on introduction to residential construction, emphasizing practical skills and vocational training. Topics include safety, tools and equipment, materials, and basic mathematical procedures used in construction. The course also covers communication and employability skills needed to succeed in the field.

Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)

CEP-954 with a grade of P.

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
Carpentry	Or
Construction Management	Or
Construction Technology	End

Learning Objectives

Learning Objectives

Learning Objective
1. Analyze technical and job skills related to careers in the construction industry.
2. Examine the various phases associated with simple residential construction.
3. Demonstrate proper techniques associated with residential construction.
4. Develop inclusive teamwork and problem-solving skills necessary in the construction industry, fostering collaboration across diverse perspectives and backgrounds.
5. Display proper and safe work practices in accordance with OSHA standards for the construction industry.
6. Practice and correctly use a wide variety of hand and power tools associated with the construction industry.
7. Differentiate the type and use of various building materials.
8. Produce accurate calculations using common math and measuring techniques required in the construction industry.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

1. Students will analyze career opportunities in residential construction and develop a career plan that aligns with their skills, interests, and goals.
2. Students will apply OSHA safety standards and best practices to ensure a safe and inclusive work environment on construction sites.
3. Students will demonstrate knowledge in using a variety of hand and power tools, emphasizing proper handling, maintenance, and safety procedures.
4. Students will identify and evaluate construction materials and methods, considering sustainability, cost-effectiveness, and equitable access to resources.
5. Students will apply teamwork and communication strategies to collaborate effectively in diverse residential construction teams.
6. Students will utilize applied mathematics, including measurements, area, and volume calculations, to accurately plan and complete construction projects.

Content

Non-Credit Content

1. Construction Industry Orientation
 - a. Career Opportunities in Residential Construction
 - b. Overview of Trades and Their Roles
 - c. Job Seeking Skills and Professional Development
 - d. Identifying Preferences, Interests, and Strengths
 - e. Setting Career and Personal Goals
2. Navigating Workplace Culture and Expectations
 - a. Diversity in Construction
 - b. Creating an Inclusive Work Environment
 - c. Core Construction Concepts Review
3. Safety Protocols
 - a. OSHA Standards
 - b. Tool Identification and Safe Usage
 - c. Materials and Fasteners Selection
4. Teamwork and Effective Communication in Construction
 - a. Collaborative Work Environments
 - b. Addressing Bias
 - c. Promoting Equity
5. Residential Print Reading
 - a. Project Planning
 - b. Blueprint Basics
 - c. Materials Identification and Sourcing
 - d. Assembly Using Residential Blueprints
 - e. Interpreting and Assessing Plans for Accuracy and Completeness
 - f. Communicating Design Intent Clearly
 - g. Inclusive Design Considerations in Residential Construction
6. Residential Materials and Methods
 - a. Understanding Trade-Level Materials and Methods
 - b. Resources for Selecting Appropriate Materials
 - c. Material Functionality and Cost-Effective Solutions
 - d. Organizing and Managing Building Materials
 - e. Sustainable and Culturally Responsive Building Practices
7. Residential Construction Concepts
 - a. Site Layout and Preparation
 - b. Footing and Foundation Forms
 - c. Floor Framing and Structural Integrity

- d. Wall Framing and Load-Bearing Considerations
- e. Ceiling and Roof Framing Techniques
- f. Sheathing and Weather Barriers for Durability
- g. Installing Doors, Windows, and Insulation
- h. Drywall Installation and Finishing
- i. Stair Framing and Safety Standards
- j. Interior Doors and Trim Installation
- k. Universal Design Principles for Accessibility and Inclusion
- 8. Applied Mathematics for Construction
 - a. Whole Numbers, Decimals, and Fractions in Measurement
 - b. Accurate Measurement and Layout Techniques
 - c. Area and Volume Calculations for Construction Projects
 - d. Precision in Estimation and Material Usage
 - e. Equitable Cost Analysis
 - f. Budgeting for Diverse Communities

Methods of Instruction

Method

Discussion

Integration

Discussion can be used to enhance critical thinking, collaboration and problem solving skills by allowing students to engage in real-world construction scenarios. An example of this is a discussion regarding how to promote equity in the residential construction field by discussing current diversity landscape, the barriers that underrepresented groups face and the solutions to promote inclusivity, fairness and equal opportunities. Discussions will adhere to all accessibility standards.

DE Adaptations for MOI

Students can access the initial post by the instructor and reply through the CMS. If the course is live, discussion can happen via accessible video conferencing software. All discussions will adhere to accessibility standards.

Method

Lecture

Integration

Lecture can be used to introduce foundational knowledge, explain key concepts and reinforce hands-on learning. An example of this would be to introduce safety regulations (OSHA) standards before students engage in hands-on practice. Lecture will adhere to all accessibility standards.

DE Adaptations for MOI

Instructors can post lectures on the CMS, which is where the students would access these lectures. Students can also participate in live lectures via accessible video conferencing software. All lectures will adhere to accessibility standards.

Method

Observation and Demonstration

Integration

Observation and demonstration will be used to allow students to develop technical skills, understand industry standards, and apply best practices in a hands-on learning environment. An example of this is the instructor demonstrating how to properly handle a particular tool. Students then can replicate the demonstrated techniques under instructor supervision. The instructor can then provide feedback to help develop the students' confidence and proficiency in real-world construction practices. Observation and demonstrations will adhere to all accessibility standards.

DE Adaptations for MOI

Observations and demonstrations can be accessed through the CMS or via accessible video conferencing software. Students can watch accessible simulations or accessible videos posted to the CMS by the instructor. The student then can make comments or

post discussion posts on the correct or incorrect techniques presented. All observation and demonstration materials will adhere to accessibility standards.

Methods of Evaluation

Method

Class Participation

Integration

Class participation can evaluate the student's engagement, communication, teamwork and application of course concepts. Since this course required both technical skills and collaborative problem solving, participation can provide valuable insight into a student's progress. An example of this is a hands-on project of framing a wall. This will show how well the student follows safety protocols, uses tools correctly and applies construction techniques to the project. Class participation will adhere to all accessibility standards.

DE Adaptations for MOE

Class participation can also be accomplished online by student accessing accessible media or videos showing the framing of a wall. Students can either discuss live via accessible video conferencing software or can post discussions through the CMS. Instructors can then provide feedback through the CMS within a week of submission or in live time depending on the mode of DE. All class participation materials will adhere to accessibility standards.

Method

Homework

Integration

Homework can evaluate the student's ability to apply construction concepts, practice calculations or develop a deeper understanding of materials, methods and safety standards. An example of this is to have a student analyze a blueprint to identify materials, dimensions and building specifications. This will evaluate the student's ability to read and interpret blueprints, and explain construction details. Homework will adhere to all accessibility standards.

DE Adaptations for MOE

Homework can be accomplished by the instructor posting assignments through the CMS and having the student access and upload their assignment through the CMS. The instructor can provide feedback within a week of submission. All homework will adhere to accessibility standards.

Method

Projects

Integration

Projects will be evaluated by assessing the student's ability to collaborate, problem solve, and apply technical skills in a real-world context. An example of this would be to work in a diverse team to design and propose a tiny home that meets specific client needs, budget constraints and sustainability goals. This project will encourage collaboration across different skills levels, backgrounds and perspectives. Feedback will be provided by the instructor within a week of submission. Projects will adhere to all accessibility standards.

DE Adaptations for MOE

Projects can be accessed and presented via accessible video conferencing software or through uploading accessible videos or pictures of the project through the CMS. The instructor can provide feedback through the CMS to the student within a week of submission. All project materials will adhere to accessibility standards.

Assignments

Assignment Type

Reading

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Formative

Assignment

Read the article "18 Best Sustainable Materials for Building Eco-Friendly Homes." <https://www.greenbuildermedia.com/blog/18-of-the-best-sustainable-materials-for-building> - :~:text=Recycled glass tiles are an excellent option,styles,including mosaics and other decorative pieces.

Pay close attention to the different materials mentioned, their advantages, and how they contribute to sustainable construction.

Answer the following questions based on the reading:

Material Comparison – Compare and contrast two different types of insulation materials discussed in the article. How do they contribute to sustainability?

Resource Efficiency – Which building material do you think is the most resource-efficient and why? Provide specific reasons based on the article.

Economic Considerations – Some sustainable materials, like recycled steel and engineered lumber, are cost-effective. How do these materials help reduce construction costs while maintaining structural integrity?

Environmental Impact – How does the use of salvaged wood floors and recycled glass tiles reduce the environmental footprint of a construction project?

Application in Residential Construction – If you were designing an eco-friendly home, which three materials from the article would you choose and why? Discuss their benefits in terms of sustainability, cost, and durability.

How assignment will be adapted in online format

In an asynchronous learning environment, instructor will post and students will respond to the assignment through the CMS. The Instructor will provide feedback within a week of submission. In a synchronous environment, students can answer the questions during class via accessible video conferencing software, allowing the instructor to offer immediate feedback.

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Summative

Assignment

Building Affordability - Equitable Cost Analysis in Residential Construction

You will analyze and compare the costs of traditional vs. sustainable construction methods to determine the most cost-effective, durable, and equitable approach for residential building projects.

Instructions:

You will write a detailed report analyzing the affordability of residential construction through an equitable cost analysis. Your report should be structured as follows:

1. Introduction

- Define affordability in the context of residential construction.

- Explain the importance of equitable cost analysis in housing development.
- Introduce the key aspects of traditional and sustainable construction methods.

2. Cost Comparison Analysis

- Select at least three building components to compare between traditional and sustainable methods (e.g., insulation, framing materials, roofing).
- Provide a breakdown of costs for both traditional and sustainable materials, including upfront expenses, long-term savings, and maintenance costs.
- Discuss factors influencing material affordability, such as availability, labor costs, and regional climate considerations.

3. Durability and Long-Term Benefits

- Assess the lifespan and maintenance requirements of traditional vs. sustainable materials.
- Evaluate energy efficiency, environmental impact, and overall resilience of the selected construction methods.
- Consider how durability affects long-term affordability for homeowners.

4. Equity and Accessibility in Housing

- Discuss how different construction methods affect the affordability and accessibility of housing for diverse populations.
- Analyze the role of government incentives, subsidies, and policies in promoting sustainable and equitable housing solutions.
- Explore challenges and solutions to making sustainable housing accessible to lower-income communities.

5. Conclusion and Recommendations

- Summarize key findings from your cost analysis.
- Provide a final recommendation on which approach (traditional, sustainable, or a hybrid model) is the most equitable and cost-effective.
- Suggest practical steps for builders, policymakers, and homeowners to enhance affordability in residential construction.

Evaluation Criteria:

You will be graded based on the following criteria:

- Depth of Analysis: Demonstrates thorough research and critical thinking in comparing construction methods.
- Clarity and Organization: Well-structured and logically presented arguments.
- Use of Evidence: Incorporates data, case studies, or credible sources to support claims.
- Grammar and Formatting: Adheres to formatting requirements with minimal spelling/grammar errors.
- Creativity and Practical Application: Offers innovative and realistic recommendations for equitable housing solutions.

How assignment will be adapted in online format

Students can respond to the assignment, assigned by the instructor, through the CMS. The student can upload their final assignment in the CMS. The instructor can provide feedback through the CMS within a week of submission.

Course Materials

Textbooks

OSHAPDF LLC (2025) Residential Construction Handbook 2025. ISBN: 978-1952160127

n/a (2018). Career Connections: Residential Construction Project Book 3 Carpenters International Training Fund. ISBN: n/a

Andres, C., Smith, R., Woods, R. (2019). Principles and Practices of Commercial Construction Pearson. ISBN: 9780134704654

Allen, E., Schreyer, A. C., and Thallon, R. (2022). Fundamentals of Residential Construction Wiley. ISBN: 9781119811565

Class Size Information

Class Size

30

Class Size Category

F - Individualized, skills#based instruction/field practice 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 equip students with the foundational skills and knowledge needed for success in the residential construction industry. Instructors foster a hands-on, student-centered learning environment that promotes skill development, teamwork, and inclusivity. Students will engage in practical construction activities, collaborate with peers, and apply problem-solving strategies in a supportive setting. Their diverse experiences and backgrounds will enrich class discussions, such as comparing residential construction techniques and materials from different regions to those commonly used in California.

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

In this residential construction course, assignments are designed with flexibility to accommodate various learning styles, backgrounds, and levels of experience. Students will have multiple ways to demonstrate their understanding, ensuring that all learners can meaningfully contribute. Assignments will also integrate diverse perspectives, allowing students to explore residential construction techniques and materials used in different cultural and regional contexts. Instruction will engage students with varied learning preferences by incorporating accessible visual aids such as blueprints, diagrams, and instructional videos alongside verbal explanations and hands-on practice. Instructors foster an inclusive learning environment where each student's input is valued, and peer collaboration is encouraged. Assessment and evaluation in this course prioritize individual progress and skill mastery rather than one-time performance. Regular formative assessments will be used to track understanding and provide timely feedback. This approach allows for instructional adjustments to address any gaps in comprehension, ensuring continuous growth for all students. Course content is designed to be relevant, inclusive, and accessible. Materials, case studies, and project examples will reflect the diversity of the residential construction industry, highlighting topics such as green building techniques, safety protocols, and regional building codes. Instruction will also incorporate real-world examples from different cultural contexts to emphasize the global nature of construction. All materials and resources will be accessible, ensuring that students with different abilities and backgrounds can fully engage with the content. Interactions within the classroom will be guided by respect, inclusivity, and collaboration. Group projects will promote peer learning, encouraging students from different backgrounds to share insights and experiences. Instructors will foster an open and supportive environment where all students feel comfortable expressing their ideas and perspectives. This approach not only helps students develop technical construction skills but also strengthens communication, teamwork, and problem-solving abilities critical competencies for success in the diverse and evolving residential construction workforce.

Interactions

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

Students will actively participate in collaborative activities that promote hands-on learning and peer engagement. In an in-person setting, students will work in small groups on construction projects, such as framing walls, reading blueprints, and measuring materials, allowing them to exchange ideas, problem-solve, and refine their technical skills together. Group discussions will focus on practical applications, such as comparing different construction methods, evaluating material choices, and troubleshooting common job-site challenges.

In an online course environment, students will engage in discussions using accessible video conferencing software and course management system (CMS) tools. Virtual breakout rooms will be used for team-based problem-solving activities, such as analyzing construction plans or discussing building codes. Students will also contribute to discussion forums by responding to peers' posts, sharing insights on residential construction techniques, and providing feedback on project ideas.

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

The instructor will actively engage with students both in-person and online to provide guidance, support, and feedback throughout the course. In the physical classroom, the instructor will offer hands-on demonstrations, supervise construction activities, and

provide real-time feedback on tool usage, material selection, and safety procedures. Students will receive direct coaching during group projects and practical exercises to reinforce their technical skills and understanding of residential construction concepts. In the online learning environment, the instructor will utilize CMS tools and accessible video conferencing software to facilitate discussions, provide virtual demonstrations, and offer individualized support. Timely feedback will be provided on assessments, discussion posts, and construction project submissions, ensuring students understand how to improve their techniques and decision-making processes. For example, feedback may include specific suggestions on interpreting blueprints, selecting cost-effective materials, or improving framing techniques. Instructor interactions will take place through in-person guidance, live online sessions, recorded instructional videos, and email communication, ensuring that all students have multiple ways to seek clarification and receive encouragement. The goal is to create a supportive and interactive learning environment where students feel confident asking questions, applying feedback, and developing the skills necessary for success in residential construction.

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

This course will incorporate student-to-content interactions through hands-on exercises, practical projects, and discussions, allowing students to apply their learning and develop residential construction skills. Students will engage with a variety of instructional materials, including technical readings, accessible instructional videos, and industry-related case studies, to reinforce key construction concepts. Students will actively participate in practical assignments such as measuring and cutting materials, framing walls, installing drywall, and interpreting residential construction plans. These activities will provide real-world applications of course content, ensuring students build competence in both technical and problem-solving skills. CMS tools and accessible video conferencing software will be utilized for online discussions, interactive lessons, and digital assessments to enhance learning and engagement. Additionally, accessible supplemental resources will be provided, including construction safety guidelines, building code references, and material specification sheets, encouraging deeper exploration of industry practices. This comprehensive approach ensures students interact meaningfully with the course content, strengthening their knowledge, technical abilities, and overall readiness for the residential construction workforce.

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

Students will be encouraged to reflect on their skill development and milestones throughout the course. Regular self-assessment exercises will help them evaluate their understanding of key residential construction concepts, techniques, and safety practices. At the beginning and end of the course, students will complete practical skill assessments, such as framing a section of a wall, interpreting blueprints, or correctly using power tools, allowing them to compare their progress over time. Student will assess their confidence and proficiency in areas like material selection, measurement accuracy, and job site problem-solving during the course. This process will foster metacognitive skills, helping students actively monitor their learning journey and identify areas for further improvement. By reflecting on their progress, students will develop a clearer understanding of their strengths and areas for growth, ensuring they leave the course with a solid foundation for success in the residential construction industry.

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