Introduction to Careers in Architecture and Construction
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Introduction to Careers in Architecture and Construction Course Overview

The goal of this course is to provide students with an overview of careers in Architecture and Construction in order to assist with informed career decisions. This dynamic, rapidly evolving career cluster is comprised of three pathways (fields): Design and Pre-Construction (Architecture and Engineering); Construction (Construction and Extraction); and Maintenance and Operations (Installation, Maintenance, and Repair). The Architecture and Construction career cluster is defined as careers in building, designing, managing, maintaining, and planning the built environment.

The built environment is not limited to buildings and structures—or to urban environments. A much broader view of the built environment helps students gain a better and more holistic understanding of the impact of the Architecture and Construction industries. The built environment encompasses all zones of human activity—from natural conservation areas with minimal human intervention to highly dense areas with tall skyscrapers and intricate highway systems to suburban cul-de-sacs. The interrelated components that make up the built environment are as varied and unique as the professionals who help shape it.

Objectives

- Differentiate each Pathway within the Career Cluster and describe the careers in each pathway
- Locate and evaluate career information in order to make an informed decision about career goals
- Identify skills, abilities, and talents needed for careers in Architecture and Construction and analyze how these relate to interest profiles
- Describe and characterize key technical and creative requisites for each educational path that fits the student’s primary area (or areas) of interest
- Analyze the impact of the “green economy” on careers in Architecture and Construction.
- Research and predict the growth of industries that comprise the Career Cluster; analyze the ways that technology, innovation, and creative thinking have impacted these industries
- Differentiate key attributes of careers
- Argue how Architecture and Construction careers may change as the economy grows or shrinks
- Evaluate the impact and importance of the regulation of Architecture and Construction in the following areas: planning and zoning, environmental regulations, OSHA regulations, building codes, and regulations ensuring equal access such as the Americans with Disabilities Act (ADA)

This is an introductory course in careers in architecture and construction. As such, there are no prerequisites other than interest in the subject for the student. Students will need online access in order to locate the research materials they will need to review. Some course projects also require online research. Microsoft Office software or the equivalent is required since the student will create presentations using PowerPoint.

Certain projects suggest some minimal physical field work, but virtual alternatives are available should students lack access to the suggested physical sites.

Communications skills, personal skills in recall and observation, experience assessment, and self-analysis are part of certain projects. Some projects direct students to interact with others to some extent; this should be within reach for any student.
### Unit 1: Introduction to Careers in Architecture and Construction

#### Assignments
1. Course Overview
2. Design and Pre-Construction: The Field at a Glance
3. Project: Exploring Nonprofit Construction
4. Construction Site Management
5. Project: Analyze a Local Construction Project
6. Maintenance and Operations
7. Quiz 1: Pathways: The Built Environment as an Interrelated System
8. Department of Labor O*NET Career Tools
9. Project: Maker Essay
10. Job Zones and Resources
11. Project: Learning to Teach Others About What You Know
12. The Bigger Picture: The Role of Architecture and Construction in the US Economy
13. Quiz 2: How You Can Shape the Built Environment
14. Special Project*
15. Test
17. Glossary and Credits

### Unit 2: Building the Future: The Art and Science of Buildings

#### Assignments
1. The Architect and Engineer
2. Project: Visualization for Architects and Engineers
3. Education for Licensed Professions: Architects and Engineers
4. The Design-Build Revolution
5. Project: Design Professionals Doing Humanitarian Work
6. Quiz 1: The Architect and the Engineer
7. Residential Construction
8. Project: New Directions in Residential Construction
9. Commercial Construction
10. The Role of Innovation in the Built Environment
11. Project: Materials
12. Quiz 2: The Evolution of Buildings
13. Special Project*
14. Test
15. Course Project Part 2: Understanding LEED Certification and Green Building: Preparing Your Building for LEED Certification*
16. Glossary and Credits

### Unit 3: Green Jobs in Architecture and Construction

#### Assignments
1. Green Building
2. Regulation and Assessment of Green Building
3. Project: Find a LEED Certified Building and Analyze It
4. Research and Development and its Impact on Green Building and Construction
5. Project: Home Energy Audit Assignment
6. Quiz 1: The Green Economy
7. Green Economy
8. Green Jobs
9. Project: Preparing Your Own Emergency Kit
10. Green Certification and Green Skills
11. Project: Design a New School Locker
12. Quiz 2: Green Jobs
13. Special Project
14. Test
15. Course Project Part 3: Courses of Study for Architecture and Construction Careers
16. Glossary and Credits
**Unit 4: The Arts and the Built Environment: Jobs for Creatives**

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<th>Assignments</th>
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<tr>
<td>1. Pre-Construction and Design Specialists</td>
<td>9. The Trades: The Almost-Lost Arts of Master Craftsmen</td>
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<td>3. Interdisciplinary Work Within Specializations</td>
<td>11. The Future of the Past</td>
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<td>5. The Role of Art, History, and Research in Design</td>
<td>13. Special Project*</td>
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<td>6. Quiz 1: Pre-Construction and Design Specialists</td>
<td>14. Test</td>
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**Unit 5: Building the City**

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<td>2. Project: Future City Design</td>
<td>11. The Need for Resilient Infrastructure</td>
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<td>3. Zoning</td>
<td>12. Quiz 2: Civil Engineering</td>
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<td>4. Project: Retrofitting Urban Sprawl Assignment</td>
<td>13. Special Project*</td>
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<td>5. Overview of Prevailing Planning Trends</td>
<td>14. Test</td>
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<td>8. Project: Tinkercad 3D Modeling Assignment</td>
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<td>9. Environmental and Civil Engineering</td>
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**Unit 6: Course Review, and Exam**

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<td>3. Exam</td>
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(*) Indicates alternative assignment