



# monarch

Curriculum Catalog

Career and Technical Education Series

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
- Describe and 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.

Intro. to Careers in Architecture and Construction	<b>Unit 1: Introduction to Careers in Architecture and Construction</b>	
	<b>Assignments</b>	
	1. Course Overview	11. Project: Learning to Teach Others About What You Know
	2. Design and Pre-Construction: The Field at a Glance	12. The Bigger Picture: The Role of Architecture and Construction in the US Economy
	3. Project: Exploring Nonprofit Construction	13. Quiz 2: How You Can Shape the Built Environment
	4. Construction Site Management	14. Special Project*
	5. Project: Analyze a Local Construction Project	15. Test
	6. Maintenance and Operations	16. Course Project Part 1: Architecture and Construction: Industry and Careers in Focus*
	7. Quiz 1: Pathways: The Built Environment as an Interrelated System	17. Glossary and Credits
	8. Department of Labor O*NET Career Tools	
	9. Project: Maker Essay	
	10. Job Zones and Resources	

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

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

Unit 4: The Arts and the Built Environment: Jobs for Creatives	
Intro. to Careers in Architecture and Construction	<b>Assignments</b>
	1. Pre-Construction and Design Specialists
	2. Project: Landscape Architecture in Large-Scale Action Essay
	3. Interdisciplinary Work Within Specializations
	4. Project: Drawing and Geometry: Sketching Exercise
	5. The Role of Art, History, and Research in Design
	6. Quiz 1: Pre-Construction and Design Specialists
	7. Historical Research and Preservation in Architecture and Construction
	8. Project: National Register of Historic Places Project
9. The Trades: The Almost-Lost Arts of Master Craftsmen	
10. Project: Master Craftsmen Resources	
11. The Future of the Past	
12. Quiz 2: History and Tradition of the Building Arts	
13. Special Project*	
14. Test	
15. Course Project Part 4: Sustainable Development Presentation*	
16. Glossary and Credits	
Unit 5: Building the City	
Intro. to Careers in Architecture and Construction	<b>Assignments</b>
	1. Planning
	2. Project: Future City Design
	3. Zoning
	4. Project: Retrofitting Urban Sprawl Assignment
	5. Overview of Prevailing Planning Trends
	6. Quiz 1: Planning
	7. Evolution of Civil Engineering
	8. Project: Tinkercad 3D Modeling Assignment
9. Environmental and Civil Engineering	
10. Project: The Well-Photographed Bridge Assignment	
11. The Need for Resilient Infrastructure	
12. Quiz 2: Civil Engineering	
13. Special Project*	
14. Test	
15. Course Project Part 5: Computer-Aided Design and You*	
16. Glossary and Credits	
Unit 6: Course Review, and Exam	
ICAC	<b>Assignments</b>
	1. Course Project Part 6: Now That You Know: Where Do You See Yourself in the Architecture and Construction Career Cluster?*
	2. Review
	3. Exam

(\* ) Indicates alternative assignment