



# Architectural and Engineering Managers

SOC Code 11-9041 • Projected Growth (2020)

## Description

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### What Architectural and Engineering Managers Do

Architectural and engineering managers plan, coordinate, and direct activities in architecture and engineering, including research and development in these fields.

### Duties

- Make detailed plans to reach technical goals, such as development of new products and designs
- Manage research and development teams that produce new products, processes, or designs, or improve existing ones
- Check the technical accuracy of the work and soundness of the methods their staff uses
- Direct and coordinate the design of equipment and machinery
- Meet with other levels of management on architectural and engineering activities
- Propose budgets for projects and programs and determine staff, training, and equipment needs
- Hire, assign, and supervise staff

### Training Opportunities Linked to Those Jobs

(Degree Types and Colleges/Universities)

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### How to Become an Architectural and Engineering Manager

Architectural and engineering managers usually advance to management positions after years of employment in their fields. Nearly all architectural and engineering managers, therefore, have at least a bachelor's degree in some specialty of engineering or a professional degree in architecture.

### Education and Training

Nearly all architectural and engineering managers have at least a bachelor's degree in an engineering specialty or a professional degree in architecture. Many also gain business management skills by completing a master's degree in engineering management (MEM) or technology management (MSTM), or a master's in business administration (MBA), either before or after advancing to management positions. Employers often pay for such training. Typically, those who prefer to manage in technical areas pursue an MEM or MSTM, and those interested in more general management skills earn an MBA.

Engineering management programs typically include classes in accounting, engineering economy, financial management, industrial and human resources management, industrial psychology, and quality control. Technology management programs usually provide instruction in production and operations management, project management, computer applications, quality control, safety and health issues, statistics, and general management principles.

### Licenses

Architectural and engineering managers are typically experienced architects or engineers, and many states license these occupations. For more information, see the profiles on architects and engineering occupations.

### Work Experience

Architectural and engineering managers advance to their positions after years of employment in their fields. Managers typically have experience working on increasingly difficult projects, developing designs, solving problems, and making decisions. Before moving up to a management position, they also typically have experience leading engineering teams.

### Important Qualities

*Analytical skills.* Architectural and engineering managers should be able to evaluate information and solve complex problems.

*Communication skills.* Architectural and engineering managers oversee staff and meet with other levels of management. They must be able to communicate well to lead teams in meeting goals.

*Detail oriented.* Architectural and engineering managers must pay attention to detail. Their duties require an understanding of complex systems, and a minor error can cause major problems.

*Math skills.* Architectural and engineering managers use calculus and other advanced mathematics to develop new products and processes.

*Organizational skills.* Architectural and engineering managers keep track of many workers, schedules, and budgets all at once.

*Technical skills.* Managers in these fields must thoroughly understand the specific area (architecture or a specific type of engineering) that they are managing.

### Postsecondary Education

Texas Southmost College	South Texas College	Texas State Technical College	The University of Texas at Brownsville	The University of Texas - Pan American
<a href="#">Associates of Arts in Business</a>	<a href="#">Associated of Science in Engineering</a>	<a href="#">Associates of Applied Science in Business Management Technology</a>	<a href="#">Bachelors of Science in Engineering Physics</a>	<a href="#">Bachelors of Science in Civil Engineering</a>
<a href="#">Associates of Applied Science in Business Management Technology</a>	<a href="#">Associates of Applied Science in Management</a>	<a href="#">Certificate of Completion in Business Management Technology</a>	<a href="#">Bachelors in Business Administration in Management</a>	<a href="#">Bachelors of Business Administration in Management</a>

### Local Employers

<a href="#">Amaya Surveying CO</a>	Brownsville	<a href="#">Mundo Engineering</a>	La Feria
<a href="#">Centerline Surveying</a>	Harlingen	<a href="#">Rios Surveying CO</a>	San Benito
<a href="#">Homeland Surveying CO</a>	Brownsville	<a href="#">Valley Solvents &amp; Chemicals</a>	Combes

### Career Options

(Specific Job Types)

- Chief Engineer
- Civil Engineering Manager
- Director of Engineering
- Engineering Group Manager
- Engineering Manager
- Engineering Program Manager
- Principal Engineer
- Project Engineer
- Project Engineering Manager
- Project Manager

### Salary Ranges

Wages for **Architectural and Engineering Managers**

Location	Pay Period	2012				
		10%	25%	Median	75%	90%
United States	Hourly	\$38.61	\$48.09	\$60.03	\$74.51	\$90.00+
	Yearly	\$80,300	\$100,000	\$124,900	\$155,000	\$187,200+
Texas	Hourly	\$42.22	\$53.43	\$69.39	\$90.00+	\$90.00+
	Yearly	\$87,800	\$111,100	\$144,300	\$187,200+	\$187,200+

Location	Pay Period	2012				
		10%	25%	Median	75%	90%
Brownsville-Harlingen, TX MSA	Hourly	\$37.68	\$43.88	\$55.08	\$68.94	\$85.20
	Yearly	\$78,400	\$91,300	\$114,600	\$143,400	\$177,200
	Yearly	\$65,100	\$83,600	\$102,400	\$122,400	\$147,500

### Professional Associations linked to the Careers

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For information on architecture and engineering management programs, visit

[The American Institute of Architects](#)

[ABET](#)

[The Association of Technology, Management, and Applied Engineering](#)

### Sources

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The information provided in this document was collected from the following sources:

- Occupational Outlook Handbook (<http://www.bls.gov/ooh/>)
- O\*NET OnLine (<http://www.onetonline.org/>)
- Texas CARES (<http://www.texascaresonline.com/>)
- CareerOneStop (<http://www.careeronestop.org/>)



# Architectural and Engineering Managers

**Cluster Overview:** Planning, managing, and providing scientific research and professional and technical services including laboratory and testing services, and

**Career Goal (O\*NET Code):** (11-9041) - Architectural and engineering managers plan, coordinate, and direct activities in architecture and engineering, including research and development in these fields.

**Student Name:** \_\_\_\_\_

**School:** \_\_\_\_\_

## SUGGESTED COURSEWORK

## EXTENDED

Middle School	8th	HS Courses:	(Local districts may list high school credit courses here)	Curricular Experiences: <a href="#">Camp SOAR-Aerospace Engineering-Texas A&amp;M University</a> <a href="#">Aerospace Academy-San Jacinto College Project</a> <a href="#">Lead the Way</a> <a href="#">Skills USA</a> <a href="#">Technology Student Association</a> <a href="#">The Infinity Project</a>	Extracurricular Experiences: Destination ImagiNation High School Students United with NASA International Bridge Building Contest Marine Advanced Technology Education Center National Engineering Design Competition UIL Academic Competitions Aerospace Summer Camps
High School	9th	Core Courses:	English I Algebra I  World Geography Languages other than English		
		Career-Related Electives:	Introduction to Engineering Design		
	10th	Core Courses:	English II Geometry  World History Languages other than English		
		Career-Related Electives:	Principles of Engineering		
	11th	Core Courses:	English III History Algebra II  United States Professional		
		Career-Related Electives:	Digital Electronics		
12th	Core Courses:	English IV  Government/Economics			
	Career-Related Electives:	Engineering Design and Development, Civil Engineering Design and Architecture, Computer			
<b>How to Become a Architectural and Engineering Manager</b> Architectural and engineering managers usually advance to management positions after years of employment in their fields. Nearly all architectural and engineering managers, therefore, have at least a bachelor's degree in some specialty of engineering or a professional degree in architecture.				<b>Career Options:</b>	<b>Professional Associations:</b> <a href="#">The American Institute of Architects</a> <a href="#">ABET</a>

<b>Postsecondary</b>	<a href="#"><u>Texas Southmost College</u></a>	<a href="#"><u>South Texas College</u></a> <a href="#"><u>Texas State Technical College</u></a>	<ul style="list-style-type: none"> <li>• Chief Engineer</li> <li>• Civil Engineering Manager</li> <li>• Director of Engineering Manager</li> <li>• Engineering Group Manager</li> <li>• Engineering Manager</li> <li>• Engineering Program Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Principal Engineer</li> <li>• Project Engineer</li> <li>• Project Engineering Manager</li> <li>• Project Manager</li> </ul>	<a href="#"><u>The Association of Technology, Management, and Applied Engineering</u></a>
	<a href="#"><u>Associates of Arts in Business</u></a>	<a href="#"><u>Associated of Science in Engineering</u></a> <a href="#"><u>Associates of Applied Science in Business</u></a>			
	<a href="#"><u>Associates of Applied Science in Management Technology</u></a>	<a href="#"><u>Associates of Applied Science in Management</u></a>			
	<a href="#"><u>University of Texas at Brownsville</u></a>	<a href="#"><u>University of Texas - Pan American</u></a>			
	<a href="#"><u>Bachelors of Science in Engineering Physics Engineering</u></a>	<a href="#"><u>Bachelors of Science in Civil Engineering</u></a>			
	<a href="#"><u>Bachelors in Business Administration in Management Administration in Management</u></a>	<a href="#"><u>Bachelors of Business</u></a>			
Students may select other elective courses for personal enrichment purposes.			This plan of study serves as a guide, along with other career planning materials, for pursuing a career path and is based on the most recent information as of 2012. All plans meet high school graduation requirements as well as college entrance		