

# Engineering Occupation Report

## CIP 14.0101



Cochise, Pima, SC

### Engineering, General







CIP 2010: A program that generally prepares individuals to apply mathematical and scientific principles to solve a wide variety of practical problems in industry, social organization, public works, and commerce. Includes instruction in undifferentiated and individualized programs in engineering.

\* Program Description – Settings

### Occupation Gender Breakdown 2016

|   | Gender  | Jobs | Percent   |
|---|---------|------|---|
| • | Males   | 776  | 91.2%  |
| • | Females | 75   | 8.8%   |

### Occupation Age Breakdown 2016

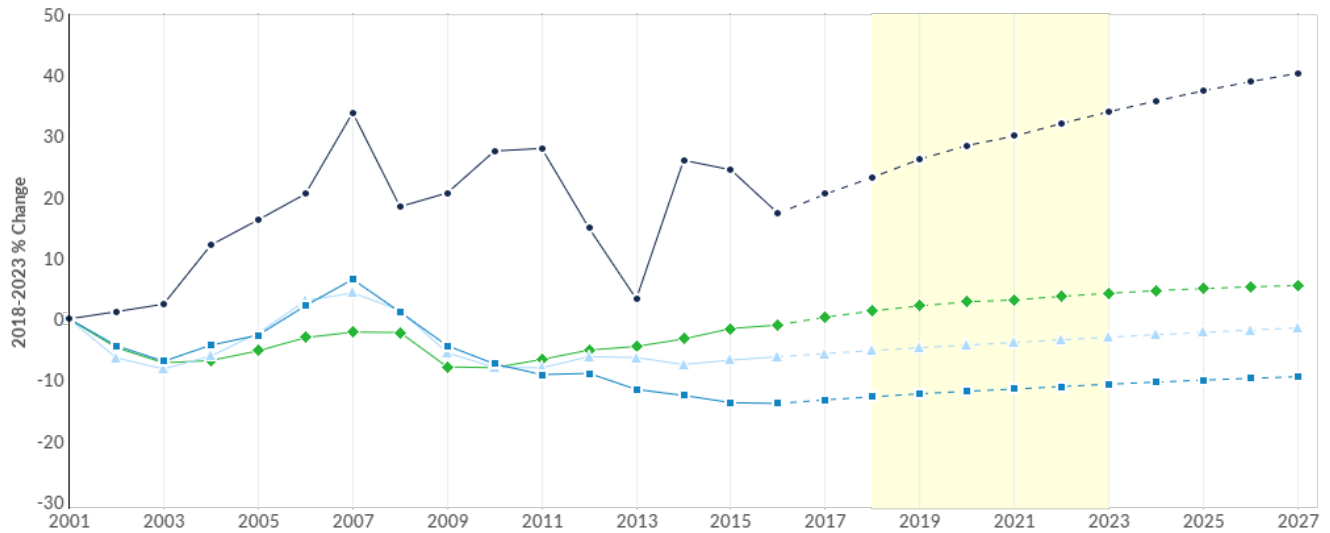
|   | Age   | Jobs | Percent   |
|---|-------|------|---|
| • | 14-18 | 0    | 0.0%  |
| • | 19-24 | 13   | 1.6%   |
| • | 25-34 | 96   | 11.2%  |
| • | 35-44 | 194  | 22.8%  |
| • | 45-54 | 268  | 31.5%  |
| • | 55-64 | 221  | 25.9%  |
| • | 65+   | 59   | 7.0%   |

### Occupation Summary for 14.0101

|   |   |   |
|---|---|---|
| <b>851</b><br>Jobs (2016)<br>12% below National average | <b>2.4%</b><br>% Change (2018-2023)<br>Nation: 2.9% | <b>\$52.50/hr</b><br>Median Hourly Earnings<br>Nation: \$56.28/hr |
|---|---|---|

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# Occupation Change Summary



|   | Region             | 2018 Jobs | 2023 Jobs | Change | % Change | Median Hourly Earnings |
|---|--------------------|-----------|-----------|--------|----------|------------------------|
| ● | Cochise County, AZ | 120       | 131       | 11     | 9%       | \$60.83                |
| ■ | Cochise, Pima, SC  | 862       | 883       | 21     | 2%       | \$52.50                |
| ▲ | Arizona (AZ)       | 5,699     | 5,831     | 132    | 2%       | \$47.83                |
| ◆ | United States      | 329,934   | 339,395   | 9,461  | 3%       | \$56.28                |

| SOC     | Description                            | Typical Entry Level Education | Work Experience Required | Typical On-The-Job Training |
|---------|--|-------------------------------|--------------------------|-----------------------------|
| 11-9041 | Architectural and Engineering Managers | Bachelor's degree             | 5 years or more          | None                        |
| 17-2199 | Engineers, All Other                   | Bachelor's degree             | None                     | None                        |

## Occupation Breakdown - 2018 Jobs

| Occupation | Description                            | Cochise County, AZ | Cochise, Pima, SC | Arizona (AZ) | United States |
|------------|--|--------------------|-------------------|--------------|---------------|
| 11-9041    | Architectural and Engineering Managers | 84                 | 527               | 3,382        | 185,678       |
| 17-2199    | Engineers, All Other                   | 36                 | 335               | 2,317        | 144,256       |
|            | Total                                  | 120                | 862               | 5,699        | 329,934       |

## Occupation Breakdown - 2023 Jobs

| Occupation | Description                            | Cochise County, AZ | Cochise, Pima, SC | Arizona (AZ) | United States |
|------------|--|--------------------|-------------------|--------------|---------------|
| 11-9041    | Architectural and Engineering Managers | 92                 | 531               | 3,433        | 191,090       |
| 17-2199    | Engineers, All Other                   | 39                 | 352               | 2,398        | 148,305       |
|            | Total                                  | 131                | 883               | 5,831        | 339,395       |

## Occupation Breakdown - Change

| Occupation | Description                            | Cochise County, AZ | Cochise, Pima, SC | Arizona (AZ) | United States |
|------------|--|--------------------|-------------------|--------------|---------------|
| 11-9041    | Architectural and Engineering Managers | 8                  | 4                 | 51           | 5,412         |
| 17-2199    | Engineers, All Other                   | 3                  | 17                | 81           | 4,049         |
|            | Total                                  | 11                 | 21                | 132          | 9,461         |

## Occupation Breakdown - Median Hourly Earnings

| Occupation | Description                            | Cochise County, AZ | Cochise, Pima, SC | Arizona (AZ) | United States |
|------------|--|--------------------|-------------------|--------------|---------------|
| 11-9041    | Architectural and Engineering Managers | \$62.45            | \$61.48           | \$58.46      | \$64.63       |
| 17-2199    | Engineers, All Other                   | \$46.77            | \$40.17           | \$37.95      | \$46.78       |
|            | Total                                  | \$57.65            | \$53.36           | \$50.19      | \$56.82       |

## Top Industries – Change from 2018 – 2023

| NAICS Code | Description  | Cochise County, AZ | Cochise, Pima, SC | Arizona (AZ) | United States |
|------------|--|--------------------|-------------------|--------------|---------------|
| 541330     | Engineering Services                                   | 10                 | 1                 | 4            | 2,785         |
| 221122     | Electric Power Distribution                            | --                 | --                | 12           | 36            |
| 901199     | Federal Government, Civilian, Excluding Postal Service | 0                  | 8                 | 20           | -557          |
| 902999     | State Government, Excluding Education and Hospitals    | --                 | --                | 2            | 59            |
| 903999     | Local Government, Excluding Education and Hospitals    | --                 | 1                 | 14           | 371           |
|            | Total  | 10                 | 13                | 51           | 2,696         |

Source: QCEW Employees, Non-QCEW Employees & Self-Employed - Emsi 2017.3 Class of Worker

### National Educational Attainment

Architectural and Engineering Managers (11-9041)

| Education Level                   | 2016 Percent |
|-----------------------------------|--------------|
| Less than high school diploma     | 0.3%         |
| High school diploma or equivalent | 3.9% ■       |
| Some college, no degree           | 6.9% ■       |
| Associate's degree                | 4.3% ■       |
| Bachelor's degree                 | 46.0% ■      |
| Master's degree                   | 33.4% ■      |
| Doctoral or professional degree   | 5.2% ■       |

\* National Educational Attainment - Settings

### National Educational Attainment

Engineers, All Other (17-2199)

| Education Level                   | 2016 Percent |
|-----------------------------------|--------------|
| Less than high school diploma     | 0.2%         |
| High school diploma or equivalent | 2.2% ■       |
| Some college, no degree           | 7.6% ■       |
| Associate's degree                | 6.7% ■       |
| Bachelor's degree                 | 48.1% ■      |
| Master's degree                   | 28.0% ■      |
| Doctoral or professional degree   | 7.3% ■       |

\* National Educational Attainment – Settings

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# Appendix A - Data Sources and Calculations

## Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

## Occupation Data

EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry.

## Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

## Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

## Industry Data

EMSI industry data have various sources depending on the class of worker. (1) For QCEW Employees, EMSI primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.

## Staffing Patterns Data

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

## State Data Sources

This report uses state data from the following agencies: Arizona Department of Administration, Office of Employment and Population Statistics