



Delaware Department of Education  
**Appendix: Labor Market Information (LMI) Review**  
 Delaware CTE Program of Study Application

**Table 1: LEA Information**

*(see instructions on page 2, LMI Instructions & Guidance Document)*

|                           |                                      |
|---------------------------|--------------------------------------|
| Career Cluster:           | Architecture & Construction          |
| Career Pathway:           | Design/Pre-Construction              |
| CTE Program of Study:     | Architectural Engineering Technology |
| High School and LEA Name: |                                      |
| County:                   |                                      |

**Table 2: Labor Market Information (LMI) Benchmarks by Geographic Region**

*(see instructions on page 2, LMI Instructions & Guidance Document)*

| Region               | Employment 2015 | Employment Change 2014-24 | Employment Growth 2014-24 | Avg. Wage 2015 |
|----------------------|-----------------|---------------------------|---------------------------|----------------|
| United States        | 137,896,660     | 9,788,900                 | 6.5%                      | \$48,320       |
| Delaware             | 433,840         | 37,150                    | 8.1%                      | \$50,300       |
| District of Columbia | 676,060         | 46,040                    | 6.0%                      | \$80,150       |
| Maryland             | 2,596,630       | 504,540                   | 18.2%                     | \$54,630       |
| New Jersey           | 3,906,800       | 275,310                   | 6.5%                      | \$54,950       |
| Pennsylvania         | 5,709,480       | 345,920                   | 5.7%                      | \$46,550       |
| Virginia             | 3,682,450       | 368,050                   | 9.3%                      | \$51,670       |

| <b>Table 3: LMI by Career Cluster &amp; Pathway</b><br><i>(see instructions on page 4, LMI Instructions &amp; Guidance Document)</i> |                                                           |              |            |           |             | <b>2014-2024</b> |                             |                             |                   |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------|------------|-----------|-------------|------------------|-----------------------------|-----------------------------|-------------------|
| Cluster Code                                                                                                                         | Cluster/Pathway Title                                     | Middle Skill | High Skill | High Wage | High Demand | Employment 2015  | Employment Change 2014-2024 | Employment Growth 2014-2024 | Average Wage 2015 |
| 2                                                                                                                                    | Architecture & Construction                               | ●            |            | ●         | ●           | 24,740           | 3,561                       | 12.7%                       | \$48,763          |
|                                                                                                                                      | Rank Select Career Cluster by the Following Categories -> |              |            |           |             | (8 of 16)        | (3 of 16)                   | (4 of 16)                   | (11 of 16)        |
| 2.01                                                                                                                                 | Design/Pre-Construction Pathway                           | ●            | ●          | ●         | ●           | 3,130            | 217                         | 6.2%                        | \$66,978          |
|                                                                                                                                      | Rank Select Career Pathway by the Following Categories -> |              |            |           |             | (3 of 3)         | (3 of 3)                    | (3 of 3)                    | (1 of 3)          |
|                                                                                                                                      | Design/Pre-Construction Pathway – Mid-Atlantic States     | N/A          |            |           |             | 116,160          | 9,617                       | 8.1%                        | \$71,844          |
|                                                                                                                                      | Design/Pre-Construction Pathway – United States           |              |            |           |             | 919,550          | 49,100                      | 5.1%                        | \$69,610          |
| 2.02                                                                                                                                 | Construction                                              | ●            |            | ●         | ●           | 14,640           | 2,503                       | 14.9%                       | \$48,750          |
| 2.03                                                                                                                                 | Maintenance/Operations                                    | ●            |            |           | ●           | 6,970            | 841                         | 10.7%                       | \$40,613          |

**Table 3: LMI by Career Cluster & Pathway (Questions/Analysis)**

*(see instructions on page 5, LMI Instructions & Guidance Document)*

1. How does the employment, the employment change, the employment growth rate, and the average wage for the identified career cluster compare to LMI for other clusters in the State of Delaware? Is the career cluster rated as high wage and high demand?

**The Architecture & Construction Career Cluster ranks in the top ten for employment; top 3 for employment change; and top 4 for employment growth and a high wage when compared to other clusters. The cluster is identified as middle skill; high wage; and high demand.**

2. How does the employment, the employment change, the employment growth rate, and the average wage for the identified career pathway compare to LMI at the cluster level? How does the identified pathway level LMI in Delaware compare to the pathway level LMI in the Mid-Atlantic and/or the United States? How does the identified pathway level LMI in Delaware compare to the other pathway level LMI in Delaware?

The pathway Design/Pre-Construction Pathway has a lower employment and growth rate than the cluster, while the average wage is rated as the highest within the Architecture & Construction Career Cluster. The pathway is identified as middle skill; high skill; high wage; and high demand. However, wages are slightly lower in Delaware as compared to wages offered in the Mid-Atlantic and United States.

**Table 4: LMI by Standard Occupation Code (SOC)**

*(see instructions on page 6, LMI Instructions & Guidance Document)*

|          |                                                                      |              |            |           |             | 2014-2024       |                             |                             |                   |
|----------|----------------------------------------------------------------------|--------------|------------|-----------|-------------|-----------------|-----------------------------|-----------------------------|-------------------|
| SOC Code | Occupation Title                                                     | Middle Skill | High Skill | High Wage | High Demand | Employment 2015 | Employment Change 2014-2024 | Employment Growth 2014-2024 | Average Wage 2015 |
| 17-1011  | Architects, Except Landscape and Naval                               |              | ●          | ●         |             | 180             | 6                           | 3.0%                        | \$87,693          |
| 17-3022  | Civil Engineering Technicians                                        | ●            |            | ●         |             | 460             | 17                          | 3.9%                        | \$44,595          |
| 17-2051  | Civil Engineers                                                      |              | ●          | ●         | ●           | 740             | 63                          | 7.0%                        | \$86,757          |
| 13-1051  | Cost Estimators                                                      |              | ●          | ●         | ●           | 1,080           | 158                         | 13.3%                       | \$68,869          |
| 11-9021  | Construction Managers                                                |              | ●          | ●         | ●           | 430             | 72                          | 11.2%                       | \$107,88          |
| 47-1011  | First-Line Supervisors of Construction Trades and Extraction Workers | ●            |            | ●         | ●           | 1,710           | 264                         | 15.5%                       | \$71,427          |

**Table 4: LMI by Standard Occupation Code (SOC) (Questions/Analysis)**

*(see instructions on page 7, LMI Instructions & Guidance Document)*

3. How closely related to the program of study are the identified occupations (SOCs)?

The Architects, Civil Engineers, and Civil Engineering Technician SOCs are directly related to the program of study and have strong connections to post-secondary programs in the state. The LMI and SOC review for Delaware further demonstrate additional connections to the SOC families of 11-9021 (Construction Managers); 13-1051 (Cost Estimators) and 47-1011 (First-Line Supervisors of Construction Trades). All of which are supported by EDEPS data for including additional high wage and high demand occupational opportunities throughout the United States.

4. Are there adequate state-level projected job openings or employment growth projections at the occupation level to justify starting a new program of study? Do the occupations related to the program of study rank as high skill, high wage and/or high demand?

**The number of job openings projected for the cluster and pathway as well as the related SOCs will support an architectural engineering technology program of study. Related SOCs in the cluster and pathway are rated as high skill, high wage, and high demand. In addition, Construction Managers; Cost Estimators and First-Line Supervisors of Construction Trades are in demand.**

**Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels**

*(see instructions on page 8, LMI Instructions & Guidance Document)*

| Program Code (CIP)                            | Program (CIP) Title                                   | School                                                  | Program Completion/Enrollment |         |         |         |
|-----------------------------------------------|-------------------------------------------------------|---------------------------------------------------------|-------------------------------|---------|---------|---------|
|                                               |                                                       |                                                         | 2011-12                       | 2012-13 | 2013-14 | 2014-15 |
| <b>Total Secondary Programs of Study</b>      |                                                       |                                                         |                               |         |         |         |
| 21.030213                                     | Drafting and Design - Architectural                   | A.I. DuPont High School/ Red Clay Cons. School District | 15                            | 24      | 15      | 15      |
| 21.030213                                     | Drafting and Design - Architectural                   | Caesar Rodney High School/Caesar Rodney School District | 17                            | 16      | 26      | 33      |
| 21.030113                                     | Drafting and Design - CAD                             | Cape Henlopen High School/Cape Henlopen School District | 42                            | 22      | 22      | 22      |
| 21.030213                                     | Drafting and Design - Architectural                   | Dickinson High School/ Red Clay Cons. School District   | 21                            | 14      | 22      | 7       |
| 21.030113                                     | Drafting and Design - CAD                             | Dover High School/ Capital School District              | 8                             | 20      | 17      | 11      |
| 21.030113                                     | Drafting and Design - CAD                             | Lake Forest High School/ Lake Forest School District    | 37                            | 31      | 20      | 18      |
| 21.030113                                     | Drafting and Design - CAD                             | Newark High School/Christina School District            | 16                            | 17      | 29      | 26      |
| 21.030213                                     | Drafting and Design - Architectural                   | William Penn High School/ Colonial School District      | 8                             | 21      | 24      | 9       |
| <b>Total Post-Secondary Programs of Study</b> |                                                       |                                                         |                               |         |         |         |
| 15.1302                                       | CAD/CADD Drafting and/or Design Technology/Technician | Delaware Technical Community College                    | 3                             | 2       | 7       | 7       |

|         |                                            |                                      |    |    |    |     |
|---------|--------------------------------------------|--------------------------------------|----|----|----|-----|
| 52.2001 | Construction Management                    | Delaware Technical Community College | 3  | 9  | 7  | 8   |
| 15.0201 | Civil Engineering<br>Technology/Technician | Delaware Technical Community College | 6  | 4  | 12 | 7   |
| 14.0801 | Civil Engineering, General                 | University of Delaware               | 68 | 91 | 89 | 102 |

**Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels (Questions/Analysis)**

*(see instructions on page 9, LMI Instructions & Guidance Document)*

5. How is the secondary program of study articulated to or in any way related to the identified post-secondary program(s)?

**The architectural engineering technology program of study is a focused program that connects to several related post-secondary degree and certification programs at both two- and four- year institutions of higher education. Specifically, the architectural engineering technology program of study will prepare students for related study in CAD Drafting; Design Technology; Construction Management; Civil Engineering Technology/Technician post-secondary programs. The architectural engineering technology program of study will also lead to the newly formed Construction Management post-secondary program of study that is planned to open at the University of Delaware in the Fall of 2018.**

6. How does the annual completion data at the secondary and post-secondary level compare to the projected career pathway-related projected job openings in Table 4?

**As illustrated by the number of enrolled students, there strong interest for civil engineering at the postsecondary level. Therefore, an architectural engineering technology program of study at the secondary level will better prepare students with the skills and knowledge to enter post-secondary programs in support for the entire Design/Pre-Construction Pathway. This work will lead to students achieving up to 10 post-secondary credits while in high school and lessen the amount of time required to enter the workforce.**

**Table 6: Other LMI Data Including Real-Time LMI (Questions/Analysis)**

*(see instructions on page 10, LMI Instructions & Guidance Document)*

7. Are there additional LMI data (demand & supply) at the local, county, state, or Mid-Atlantic region that support starting a new program of study in this pathway? This includes additional occupations for which there is not an SOC, any other analysis of LMI data, and any additional information on demand & supply factors that influence employment, which can include real-time labor market information.

**The Center for Industry Research and Workforce Alignment (CIRWA) has completed Labor Market Studies that compliment LMI data, which indicates a strong need in the Architecture & Construction Cluster for the Design/Pre-Construction Pathway. CIRWA research also indicates that at the local, county, state, and Mid-Atlantic region the pathway will lead to high skill, high demand, and high need career opportunities.**