

Companion Document to the:
**Labor Market Information (LMI) Instructions & Guidance**

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:  | Geospatial Science & 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** | **Employment2017** | **EmploymentChange 2016-26** | **EmploymentGrowth 2016-26** | **Avg. Wage2017** |
| United States | 142,549,250  | 11,518,500  | 7.4%  | $50,620  |
| Delaware | 442,690  | 28,680  | 6.1%  | $52,200  |
| District of Columbia | 708,220  | 60,280  | 7.6%  | $85,720  |
| Maryland | 2,664,330  | 211,290  | 7.7%  | $57,270  |
| New Jersey | 4,007,470  | 352,730  | 8.2%  | $56,970  |
| Pennsylvania | 5,781,610  | 342,030  | 5.5%  | $48,760  |
| Virginia | 3,789,910  | 417,700  | 10.2%  | $53,980  |

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| --- | --- |
| **Table 3: LMI by Career Cluster & Pathway***(see instructions on page 4, LMI Instructions & Guidance Document)* | **2016-2026** |
| **Cluster Code** | **Cluster/Pathway Title** | **Middle Skill** | **High Skill** | **High Wage** | **High Demand** | **Employment 2017** | **Employment Change 2016-2026** | **Employment Growth 2016-2026** | **Average Wage 2017** |
| 2 | Architecture & Construction |  |  |  |  | 25,140  | 2,035 | 7.1% | $50,985 |
|  | Rank Select Career Cluster by the Following Categories -> | *(7 of 16)* | *(4 of 16)* | *(5 of 16)* | *(5 of 16)* |
| 2.01 | Design/Pre-Construction Pathway |  |  |  |  | 3,030 | 210 | 6.2% | $68,284 |
|  | Rank Select Career Pathway by the Following Categories -> | *(1 of 3)* | *(3 of 3)* | *(2 of 3)* | *(1 of 3)* |
|   | Design/Pre-Construction Pathway - Mid-Atlantic States | N/A | 118,970 | 10,820 | 8.5% | $74,432 |
|  | Design/Pre-Construction Pathway –United States | 950,740 | 91,200 | 8.9% | $73,480 |
| 2.02 | *Construction* |  |  |  |  | 15,480 | 1,017 | 5.9% | $52,271 |
| 2.03 | *Maintenance/Operations* |  |  |  |  | 6,630 | 808 | 10% | $40,075 |

**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 upper 50% of clusters for employment; and top 33% for employment change employment growth; and wage when compared to the other career clusters. The cluster is identified as Middle Skill; high wage; and high demand.**

1. 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 Design/Pre-Construction Pathway employment growth rate is on par with the average for Delaware. The average wage is reported as the highest within the Architecture & Construction Career Cluster and is identified as middle skill; high skill; high wage; and high demand. However, wages in Delaware for the pathway are slightly lower than those reported for Mid-Atlantic and the United States.**

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| **Table 4: LMI by Standard Occupation Code (SOC)***(see instructions on page 6, LMI Instructions & Guidance Document)* | **2016-2026** |
| **SOC Code** | **Occupation Title** | **Middle Skill** | **High Skill** | **High Wage** | **High Demand** | **Employment 2017** | **Employment Change 2016-2026** | **Employment Growth 2016-2026** | **Average Wage 2017** |
| 17-1021 | Cartographers and Photogrammetrists |  |  |  | N/A | N/A | N/A | N/A | $67,390 |
| 17-1011 | Civil Engineering Technicians |  |  |  |  | 410 | 30 | 7.0% | $ 45,810 |
| 17-2051 | Civil Engineers |  |  |  |  | 780 | 60 | 8.0% | $90,410 |
| 17-3025 | Environmental Engineering Technicians |  |  |  |  | 60 | 0 | 10.5% | $54,290 |
| 17-2081 | Environmental Engineers |  |  |  |  | 190 | 20 | 8.5% | $96,030 |
| 19-4091 | Environmental Scientists and Specialists |  |  |  |  | 420 | 40 | 10.5% | $58,770 |
| 17-3031 | Surveying and Mapping Technicians |  |  |  |  | 120 | 10 | 6.6% | $41,460 |
| 17-1022 | Surveyors |  |  |  |  | 110 | 10 | 5.5% | $73,100 |

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

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

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

**The Civil Engineers; Civil Engineering Technicians; Surveyors; Surveying and Mapping Technicians; Cartographers and Photogrammetrists, Environmental Engineering Technicians, and Environmental Engineers are directly related to the SOC Code as well as the Architecture & Construction Cluster, and the Design/Pre-Construction Pathway. The program of study has strong connections to post-secondary programs offered at Delaware Technical Community College (DTCC) and the University of Delaware (UD) with positive employment growth rates that are on par or higher than the average employment growth rate for Delaware. All listed occupations are identified as high wage.**

1. 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?

**At the SOC level, the number of job openings and employment growth are above the Delaware statewide Employment Growth rate of 6.1% (2016-2026 projection). The related SOCs will support a Geospatial Science & Technology (GST) program of study. SOCs in Table 4 are rated as middle skill, high skill, high wage, or high demand occupations.**

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| **Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels***(see instructions on page 8, LMI Instructions & Guidance Document)* | **Program Completion/Enrollment** |
| **Program Code (CIP)** | **Program (CIP) Title** | **School** | **2015-16** | **2016-17** |
| **Total Secondary Programs of Study** |  |  |
| *TBD* | Geospatial Science & Technology (GST) | TBD | Program of study to begin in 2020-21 school calendar year |
| **Total Post-Secondary Programs of Study** |  |  |
| 14.0801 | Civil Engineering | University of Delaware | 112 | 94 |
| *15.0201* | Civil Engineering Technology | Delaware Technical Community College | 11 | 10 |
| *15.0507* | Environmental Engineering Technology/Environmental Technology | Delaware Technical Community College | 5 | 7 |
| 03.0104 | Environmental Science | University of Delaware | 34 | 21 |
| 03.0104 | Environmental Science | Wesley College | 1 | 0 |
| 03.0103 | Environmental Studies | University of Delaware | 22 | 20 |
| 03.0103 | Environmental Studies | Wesley College | 0 | 2 |
| 14.1401 | Environmental/Environmental Health Engineering | University of Delaware | 37 | 28 |
| 14.1401 | Environmental/Environmental Health Engineering | University of Delaware | 37 | 28 |
| 45.0702 | Geographic Information Systems Technology | Delaware Technical Community College | New 2019 | New 2019 |
| 45.0702 | GIScience and Environmental Data Analytics | University of Delaware | New 2019 | New 2019 |
| 04.0601 | Landscape Architecture | University of Delaware | 6 | 3 |
| 15.1102 | Surveying And Geomatics Engineering Technology | Delaware Technical Community College | 3 | 8 |
| 45.1201 | Urban/Regional Planning | University of Delaware | 9 | 8 |

**Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels (Questions/Analysis)***(see instructions on page 9, LMI Instructions & Guidance Document)*

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

**The Geospatial Science & Technology (GST) program of study was built in partnership with faculty from Delaware Technical Community College (DTCC) and the University of Delaware (UD). The program of study is planned to be directly articulated to multiple post-secondary degree bearing programs with up to 7 articulated credits planned to be awarded by DTCC (GIS101- Introduction to GIS; GIS110- Spatial Data Analysis & Modeling); or 6 credits planned to be articulated with UD (GEO372-Geographic Information Systems; GEO471- Advanced Geographic Information Systems).**

1. 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 is interest in Civil Engineering Technology, Environmental Engineering, and Environmental Science. The Geospatial Science & Technology (GST) program of study is planned to be articulated to these post-secondary programs of study in addition to several additional and related post-secondary programs where the articulated credits planned to be awarded by Delaware Technical Community College or the University of Delaware (UD) will be prepared students with Geospatial Science & Technology skills and knowledge to enter post-secondary programs. This work will lead to students achieving advanced standing while in high school and lessening the amount of time required to enter advanced occupations in the Architecture & Construction career cluster.**

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

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

1. 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.