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:	Information Technology
Career Pathway:	Programming and Software Development
CTE Program of Study:	Computer Science
High School and LEA Name:	
County:	

Table 2: Labor Market Information (LMI) Benchmarks by Geographic Region
(see instructions on page 3, LMI Instructions & Guidance Document)

Region	Employment 2014	Employment Change 2012-22	Employment Growth 2012-22	Avg. Wage 2014
United States	132,588,810	15,628,000	10.8%	$46,440
Delaware	412,140	40,900	9.4%	$49,254
District of Columbia	674,650	57,930	7.7%	$78,580
Maryland	2,557,510	189,370	6.1%	$53,470
New Jersey	3,869,260	313,190	7.5%	$53,920
Pennsylvania	5,653,840	467,940	7.7%	$45,750
Virginia	3,648,490	534,210	13.5%	$50,750

Table 3: LMI by Career Cluster & Pathway
(see instructions on page 4, LMI Instructions & Guidance Document)

Cluster Code	Cluster/Pathway Title	High Skill	High Wage	High Demand	Employment 2014	Employment Change 2012-2022	Employment Growth 2012-2022	Average Wage 2014
						2012-2022		
11	**Information Technology Career Cluster**	●	●	●	**13,262**	**2,073**	**15.5%**	**$86,953**
	Rank Select Career Cluster by the Following Categories ->				*(12 of 16)*	*(8 of 16)*	*(3 of 16)*	*(2 of 16)*
11.4	Programming and Software Development Pathway—Delaware	●	●	●	8,331	1,279	16.0%	$94,109
	Rank Select Career Pathway by the Following Categories ->				*(1 of 4)*	*(1 of 4)*	*(3 of 4)*	*(1 of 4)*
	Programming and Software Development Pathway – Mid-Atlantic States	●	●	●	309,750	66,709	21.7%	$95,676
	Programming and Software Development Pathway – United States	●	●	●	1,899,340	378,900	20.1%	$94,767
11.1	Network Systems	●	●	●	2,942	386	12.8%	$82,613
11.2	Information Support and Services	●	●	●	1,481	344	17.0%	$57,206
11.3	Web and Digital Communications	●	●	●	508	64	18.2%	$81,440

Questions: LMI by Career Cluster & Pathway Analysis

(see instructions on page 4, 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 Information Technology Career Clusters ranks in the top twelve (12) for employment, employment change, employment growth rate and average wage when compared to other clusters and is ranked second for average wage and third for employment growth compared to all other clusters. The career cluster rating is high 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?

Average wage and employment growth rate are both slightly higher at the career pathway level than at the cluster level, while the employment and employment change numbers are slightly lower. Salaries remain steady as you move out of the state of Delaware and into the Mid-Atlantic and larger United States region but employment, employment change and employment growth numbers increase by 4 and 5% respectively. Related pathways have lower wage potential, but show slightly higher employment, employment change and employment growth numbers within the state of Delaware.

Table 4: LMI by Standard Occupation Code (SOC) _(see instructions on page 6, LMI Instructions & Guidance Document)_					2012-2022			
SOC Code	**Occupation Title**	**High Skill**	**High Wage**	**High Demand**	**Employment 2014**	**Employment Change 2012-2022**	**Employment Growth 2012-2022**	**Average Wage 2014**
15-1132	Software Developers, Applications	●	●	●	2,575	431	18.0%	$97,520
15-1133	Software Developers, Systems Software	●	●	●	1,229	150	12.6%	$107,220
15-1131	Computer Programmers	●	●	●	1,267	69	4.4%	$86,550

<u>Questions: LMI by Standard Occupation Code (SOC)</u>
(see instructions on page 7, LMI Instructions & Guidance Document)
3. How closely related to the program of study are the identified occupations (SOCs)?

The Computer Science Program of Study focuses on computational thinking, creative problem solving, computer coding and software engineering. The Software Developers, Applications, Software Developers, Systems Software and Computer Programmers SOCs are directly related to the program of study. Students involved in the program will have to complete Algebra II (preferably Pre-Calculus) and can achieve articulated credits at the University of Delaware, Delaware State University and/or Delaware Technical and Community College through the successful completion of all courses and associated exams.

4. Are there adequate state-level projected job openings or employment growth projections at the occupation level to justify starting a new program? 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 a computer science program of study. All related SOCs and the cluster and pathway are rated as high skill, high wage, and high demand jobs.

Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels
(see instructions on page 7, LMI Instructions & Guidance Document)

Program (CIP) code	Program (CIP) Title	School	Program Completion/Enrollment			
			2010-11	2011-12	2012-13	2013-14
Total Secondary Programs of Study						
11.04601	Computer Science	Appoquinimink High School, Appoquinimink School District	Beginning program in 2015-16 school year.			
11.04601	Computer Science	First State Military Academy Charter School	Beginning program in 2015-16 school year.			
11.04601	Computer Science	MOT Charter School	Beginning program in 2015-16 school year.			
11.04601	Computer Science	Newark Charter School	Beginning program in 2015-16 school year.			
11.04601	Computer Science	Conrad School of Sciences, Red Clay School District	Beginning program in 2015-16 school year.			
11.04601	Computer Science	Woodbridge High School, Woodbridge School District	Beginning program in 2015-16 school year.			
Total Post-Secondary Programs of Study			121	129	160	
11.0101	Computer and Information Sciences, General – AA Degree	Delaware Technical Community College-Owens, Terry, & Stanton/ Wilmington	18	31	41	
11.0101	Computer and Information Sciences, General – BA Degree	University of Delaware	39	31	38	
11.1003	Computer and Information Systems Security/Information Assurance	Wilmington University	50	56	73	

| 11.0701 | Computer Science | Delaware State University | 11 | 7 | 8 | |
| 11.0701 | Computer Science | University of Delaware | 3 | 4 | 0 | |

Questions: LMI Supply Indicators by Secondary & Post-Secondary Levels
(see instructions on page 8, LMI Instructions & Guidance Document)
5. Is the Secondary Program articulated to or in any way related to the identified Post-Secondary Program(s)?

    The computer science program is articulated with the Delaware Technical Community College, Wilmington University, Delaware State University and negotiation for advanced standing is occurring with the University of Delaware. As demonstrated above, there is a defined career ladder for careers in the IT field. Students who complete the computer science program will have the opportunity to directly enter employment or continue their education in various fields.

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?

    The numbers of enrolled students in IT related programs at the post-secondary level indicate that is a moderate interest area. The computer science program in secondary schools will prepare students with the knowledge and abilities necessary to successfully participate in post-secondary programs and enter the workforce. This work will lead to students achieving articulated credit while in high school and lessening 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.

    Real-Time LMI Report will be published in the fall of 2015.