

**Program Endorsement Brief: 0702.00/Computer Information Systems**  
**Certificate of Achievement in Data Analytics**  
 Orange County Center of Excellence, September 2020

**Summary Analysis**

<b>Program Endorsement:</b>	<b>Endorsed: All Criteria Met</b>	<input type="checkbox"/>	<b>Endorsed: Some Criteria Met</b>	<input checked="" type="checkbox"/>	<b>Not Endorsed</b>	<input type="checkbox"/>
<b>Program Endorsement Criteria</b>						
<b>Supply Gap:</b>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
<b>Meets Living Wage: (Entry-Level, 25<sup>th</sup>)</b>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
<b>Educational Attainment:</b>	HS Diploma or Less	<input type="checkbox"/>	Some College/ Cert./AA	<input type="checkbox"/>	Bachelor's Degree	<input checked="" type="checkbox"/>
					Graduate Degree	<input type="checkbox"/>
<b>Emerging Occupation(s)</b>						
	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		

The Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to Business Intelligence Analysts (15-1199.08). This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for Computer Occupations, All Other (15-1199), the “umbrella” occupation code that is comprised of emerging computer-related occupations that do not fit into an established SOC code. However, the Bureau of Labor Statistics (BLS) lists a bachelor’s degree as the typical entry-level education for this occupation. **Therefore, due to some of the criteria being met, the COE endorses this proposed program.** Reasons include:

**Demand:**

- Over the next five years, there is projected to be **1,883 jobs available annually** in the region due to new job growth and replacements, **which is more than the 516 awards conferred annually** by educational institutions in the region.
  - However, the Computer Occupations, All Other (15-1199) SOC code includes a variety of emerging occupations, including Business Intelligence Analysts (15-1199.08). Since the SOC code does not solely represent business intelligence analysts, **the number of annual job openings is overstated.**
- Over the past 12 months, there were **7,726 online job postings related to business intelligence analysts.** The highest number of job postings were for data analysts, business analysts, business intelligence analysts, SAP consultants, and business consultants.
- The Bureau of Labor Statistics (BLS) lists a **bachelor’s degree as the typical entry-level education** for computer occupations, all other.
  - However, the national-level educational attainment data indicates **35.2% of workers in the field have completed some college or an associate degree.**

- Within Orange County, **all of the annual job openings** for computer occupations, all other have **entry-level wages above the county’s living wage** (\$17.36).<sup>1</sup>

**Supply:**

- There are **16 community colleges** in the region that issue awards related to computer information systems, conferring an average of **123 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there was an average of **393 awards conferred annually** in related training programs by **11 non-community college institutions** throughout the region.

**Occupational Demand**

Exhibit 1 shows the five-year occupational demand projections for Computer Occupations, All Other. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase by 4% through 2024. There will be nearly 1,900 job openings per year through 2024 due to job growth and replacements. It is important to note that the Computer Occupations, All Other (15-1199) SOC code includes a variety of emerging occupations and not solely Business Intelligence Analysts (15-1199.08). Therefore, the data in Exhibit 1 is overstated for business intelligence analysts.

*This report includes employment projection data by Emsi which uses EDD information. Emsi’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy, during the projection period, will be at approximately full employment. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.*

**Exhibit 1: Occupational demand in Los Angeles and Orange Counties<sup>2</sup>**

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	15,757	16,395	638	4%	1,301
Orange	6,832	7,182	350	5%	582
<b>Total</b>	<b>22,589</b>	<b>23,577</b>	<b>988</b>	<b>4%</b>	<b>1,883</b>

**Wages**

The labor market endorsement in this report considers the entry-level hourly wages for Computer Occupations, All Other occupations in Orange County as they relate to the county’s living wage.

<sup>1</sup> Living wage data was pulled from California Family Needs Calculator on 9/14/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

<sup>2</sup> Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region. Detailed wage information, by county, is included in Appendix A.

**Orange County**—All of the annual openings for Computer Occupations, All Other have entry-level wages above the California Family Needs Calculator hourly wage (living wage) for one adult (\$17.36 in Orange County).<sup>3</sup> Typical entry-level hourly wages are \$26.30. Experienced workers can expect to earn \$55.09, which is higher than the living wage estimate. Orange County's average wages are below the average statewide wage of \$49.34 for this occupation.

**Los Angeles County**—All of the annual openings for Computer Occupations, All Other have entry-level wages above the living wage for one adult (\$15.04 in Los Angeles County). Typical entry-level hourly wages are \$27.23. Experienced workers can expect to earn \$55.09, which is higher than the living wage estimate. Los Angeles County's average wages are below the average statewide wage of \$49.34 for this occupation.

**Job Postings**—There were 7,726 online job postings related to Business Intelligence Analysts (15-1199.08) listed in the past 12 months. The job titles with the most postings were data analysts, business analysts, business intelligence analysts, SAP consultants, and business consultants. The top skills were: data analysis, SQL, Tableau, business intelligence, and SAP. The top employers, by number of job postings, in the region were: Anthem Blue Cross, Deloitte, Disney, and IBM.

*It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.*

**Educational Attainment**—The Bureau of Labor Statistics (BLS) lists a bachelor's degree as the typical entry-level education for Computer Occupations, All Other. However, the national-level educational attainment data indicates 35.2% of workers in the field have completed some college or an associate degree. Of the 64% of Business Intelligence Analysts (15-1199.08) job postings listing a minimum education requirement in Los Angeles/Orange County, 93% (4,576) requested a bachelor's degree, 5% (234) requested a high school diploma, and 2% (112) requested an associate degree.

### **Educational Supply**

**Community College Supply**—Exhibit 2, on the following page, shows the three-year average number of awards conferred by community colleges in the related TOP code: Computer Information Systems (0702.00). The colleges with the most completions in the region are: Rio Hondo, East LA, and El Camino. Over the past 12 months, there were three other related program recommendation requests from regional community colleges.

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<sup>3</sup> Living wage data was pulled from California Family Needs Calculator on 9/14/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

**Exhibit 2: Regional community college awards (certificates and degrees), 2016-2019**

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
0702.00	Computer Information Systems	Citrus	5	7	5	6
		Compton	1	-	1	1
		East LA	14	16	19	16
		El Camino	15	18	14	16
		Glendale	2	-	-	1
		LA City	3	4	1	3
		LA Mission	3	9	5	6
		LA Trade	23	14	8	15
		Pasadena	2	1	-	1
		Rio Hondo	10	19	21	17
		West LA	13	6	8	9
		<b>LA Subtotal</b>	<b>91</b>	<b>94</b>	<b>82</b>	<b>89</b>
		Cypress	5	8	5	6
		Fullerton	7	20	15	14
		Orange Coast	-	3	4	2
		Santa Ana	18	6	4	9
		Santiago Canyon	2	2	3	2
		<b>OC Subtotal</b>	<b>32</b>	<b>39</b>	<b>31</b>	<b>34</b>
		<b>Supply Total/Average</b>			<b>123</b>	<b>133</b>

**Non-Community College Supply**—Since this occupation typically requires a bachelor’s degree, it is important to consider the supply from four-year and other institutions in the region that provide training programs for this occupation. Exhibit 3 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: Information Technology (11.0103), and Computer Technology/Computer Systems Technology (15.1202). Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, other educational institutions in the region conferred an average of 393 awards annually in related training programs.

**Exhibit 3: Regional non-community college awards, 2014-2017**

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
11.0103	Information Technology	Argosy University-Orange County	-	1	-	0
		Bethesda University	1	1	-	1
		Brand College	55	42	28	42

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
15.1202	Computer Technology/ Computer Systems Technology	California Intercontinental University	-	-	1	0
		California State University-Los Angeles	102	92	117	104
		California State University-Northridge	49	48	43	47
		Stanbridge University	29	21	25	25
		Trident University International	96	77	74	82
		University of Phoenix-California	2	3	16	7
		Advanced Computing Institute	67	74	92	78
		Learnet Academy Inc	-	13	11	8
<b>Supply Total/Average</b>			<b>401</b>	<b>372</b>	<b>407</b>	<b>393</b>

**Appendix A: Occupational demand and wage data by county**

**Exhibit 4. Orange County**

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)
Computer Occupations, All Other (15-1199)	6,832	7,182	350	5%	582	\$26.30	\$38.63	\$53.15

**Exhibit 5. Los Angeles County**

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)
Computer Occupations, All Other (15-1199)	15,757	16,395	638	4%	1,301	\$27.23	\$40.03	\$55.09

### Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings
Computer Occupations, All Other (15-1199)	22,589	23,577	988	4%	1,883

#### Appendix B: Sources

- O\*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

For more information, please contact:

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