

## **Program Endorsement Brief: 1306.00/Nutrition, Foods, and Culinary Arts Food Science Fundamentals Certificate**

Orange County Center of Excellence, June 2020

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### **Summary Analysis**

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 one emerging middle-skill occupation: Food Science Technicians (19-4011.02); and two middle-skill occupations: Dietetic Technicians (29-2051), and Chefs and Head Cooks (35-1011). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.<sup>1</sup> 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 these middle-skill food science occupations the region. However, all three occupations in this report have regional entry-level wages that are below the living wage in both Los Angeles and Orange Counties. **Therefore, due to low entry-level wages, the COE cautiously endorses this program.** Reasons include:

### **Demand:**

- Over the next five years, there is projected to be **1,706 jobs available annually** in the region due to new job growth and replacements, **which is more than the 131 awards conferred annually** by educational institutions in the region.
  - However, the Agricultural and Food Science Technicians (19-4011) SOC code includes multiple emerging occupations, including both Agricultural Technicians and Food Science Technicians. Since the SOC code does not solely represent Food Science Technicians, **the number of annual job openings is overstated.**
- Over the past 12 months, there were **3,474 online job postings related to these middle-skill food science occupations.** Chefs and Head Cooks accounted for 91% of job postings, followed by Dietetic Technicians (7%) and Food Science Technicians (2%).
  - Of the 75 online job listings related to Food Science Technicians (19-4011.02), the highest number of job postings were for quality control technicians, food safety technicians, food technicians, quality assurance and food safety, and quality assurance/research development.
- The national-level educational attainment data indicates **between 38.5% and 55.6% of workers in the field have completed some college or an associate degree.**

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<sup>1</sup> The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

- **Typical regional entry-level hourly wages** for middle-skill food science occupations are between **\$12.93 and \$13.70, which are lower than the California Family Needs Calculator** hourly wage (living wage) for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County)<sup>2</sup>.
  - Regional median wages for these three food science occupations vary by county.
    - All three occupations have **median wages** that are **higher than the living wage in Los Angeles County**.
    - **Chefs and Head Cooks (35-1011)** have regional median wages that are **higher than the living wage in Orange County**.
    - *Agricultural and Food Science Technicians and Dietetic Technicians* have regional median wages between \$15.80 and \$16.68, which are **below Orange County's living wage**.
  - **Experienced workers in all three occupations can expect to earn regional wages** between **\$21.00 and \$28.01, which are higher than the living wage estimates for both counties**.

#### Supply:

- There are **13 community colleges** in the region that have programs related to nutrition, foods, and culinary arts and/or dietetic services and management, conferring an average of **124 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there were an average of **7 awards conferred annually** in related training programs by non-community college institutions in the region.

#### Occupational Demand

Exhibit 1, on the following page, shows the five-year occupational demand projections for these middle-skill food science occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 7% through 2024. There will be more than 1,700 job openings per year through 2024 due to job growth and replacements. It is important to note that the Agricultural and Food Science Technicians (19-4011) SOC code includes both agricultural and food science occupations and not solely Food Science Technicians. Therefore, the data in Exhibit 1 is overstated for Food Science Technicians.

*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.*

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<sup>2</sup> Living wage data was pulled from California Family Needs Calculator on 5/6/20. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

**Exhibit 1: Occupational demand in Los Angeles and Orange Counties<sup>3</sup>**

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	9,020	9,628	608	7%	1,258
Orange	3,169	3,382	213	7%	448
<b>Total</b>	<b>12,189</b>	<b>13,011</b>	<b>822</b>	<b>7%</b>	<b>1,706</b>

**Wages**—Typical regional entry-level hourly wages for middle-skill food science occupations are between \$12.93 and \$13.70. Regional entry-level wages for these three occupations are lower than the California Family Needs Calculator hourly wage (living wage) for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County). Regional median wages for these three food science occupations are higher than the living wage in Los Angeles County. However, only Chefs and Head Cooks have regional median wages that are higher than the living wage in Orange County. Agricultural and Food Science Technicians and Dietetic Technicians have median regional wages between \$15.80 and \$16.68, which is below Orange County’s living wage. Experienced workers can expect to earn regional wages between \$21.00 and \$28.01, which is higher than the living wage estimates for both counties. Regional average wages are below the average statewide wage of \$22.51 for these occupations. Wage information, by county, is included in Appendix A.

**Job Postings**—There were 3,474 online job postings related to middle-skill food science occupations listed in the past 12 months. In the Los Angeles/Orange County region, 91% (3,149) job postings were for Chefs and Head Cooks, 7% (250) were for Dietetic Technicians, and 2% (75) were for Food Science Technicians. The highest number of job postings were for chef, sous chef, executive chef, nutrition assistant, and executive sous chef. The top skills were: cooking, food preparation, scheduling, budgeting, and staff management. The top three employers, by number of job postings, in the region were: Marriott International Incorporated, Compass Group, and Benihana. Of the 3,474 online job postings, 30% listed a minimum education requirement.

Of the 75 online job listings related to Food Science Technicians, the highest number of job postings were for quality control technicians, food safety technicians, food technicians, quality assurance and food safety, and quality assurance/research development. The top skills were: quality assurance and control, hazard analysis critical control point (HACCP), packaging, good manufacturing practices (GMP), and quality management. The top three employers, by number of job postings, in the region were: King’s Hawaiian, TPIRC/Southern California Food Allergy Institute, and University of La Verne.

*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.*

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<sup>3</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.

**Educational Attainment**—The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for Agriculture and Food Science Technicians, and Dietetic Technicians, and a high school diploma as the entry-level education for Chefs and Head Cooks. The national-level educational attainment data indicates between 38.5% and 55.6% of workers in the field have completed some college or an associate degree. Of the 30% of middle-skill food science occupation job postings listing a minimum education requirement in Los Angeles/Orange County, 74% (763) requested a high school diploma and 26% (274) requested an associate degree.

**Supply**

**Community College Supply**—Exhibit 2 shows the three-year average number of awards conferred by community colleges in the related TOP codes: Nutrition, Foods, and Culinary Arts (1306.00), and Dietetic Services and Management (1306.20). The colleges with the most completions in the region are Orange Coast, Saddleback and Glendale. Over the past 12 months, there were four other related program recommendation requests from regional community colleges.

**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
1306.00	Nutrition, Foods, and Culinary Arts	East LA	-	7	14	7
		Glendale	19	4	3	9
		LA Mission	2	3	4	3
		Long Beach	-	2	8	3
		Mt San Antonio	10	10	15	12
		Pasadena	-	-	2	1
		Santa Monica	1	5	3	3
		West LA	-	1	4	2
		<b>LA Subtotal</b>	<b>32</b>	<b>32</b>	<b>53</b>	<b>39</b>
		Fullerton	2	9	6	6
		Orange Coast	16	9	17	14
		Saddleback	17	23	26	22
		Santa Ana	-	3	3	2
		<b>OC Subtotal</b>	<b>35</b>	<b>44</b>	<b>52</b>	<b>44</b>
<b>Supply Subtotal/Average</b>			<b>67</b>	<b>76</b>	<b>105</b>	<b>83</b>
1306.20	Dietetic Services and Management	Glendale	14	7	14	12
		LA City	10	7	7	8
		Long Beach	20	12	8	13
		<b>LA Subtotal</b>	<b>44</b>	<b>26</b>	<b>29</b>	<b>33</b>

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		Orange Coast	11	3	11	8
		<b>OC Subtotal</b>	<b>11</b>	<b>3</b>	<b>11</b>	<b>8</b>
<b>Supply Subtotal/Average</b>			<b>55</b>	<b>29</b>	<b>40</b>	<b>41</b>
<b>Supply Total/Average</b>			<b>122</b>	<b>105</b>	<b>145</b>	<b>124</b>

**Non-Community College Supply**—It is important to consider the supply from four-year institutions in the region that provide training programs for middle-skill food science occupations. Exhibit 3 shows the annual and three-year average number of awards conferred by one institution in the related Classification of Instructional Programs (CIP) Code: Foods, Nutrition, and Wellness Studies, General (19.0501). Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, four-year colleges in the region conferred an average of seven 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
19.0501	Foods, Nutrition, and Wellness Studies, General	Brandman University	8	4	8	7
<b>Supply Total/Average</b>			<b>8</b>	<b>4</b>	<b>8</b>	<b>7</b>

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

**Exhibit 4. 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)
Agricultural and Food Science Technicians (19-4011)	476	478	2	0%	59	\$13.84	\$16.84	\$23.92
Dietetic Technicians (29-2051)	1,526	1,639	113	7%	150	\$12.85	\$15.70	\$20.88
Chefs and Head Cooks (35-1011)	7,018	7,512	494	7%	1,049	\$13.25	\$20.29	\$28.33
<b>Total</b>	<b>9,020</b>	<b>9,628</b>	<b>608</b>	<b>7%</b>	<b>1,258</b>			

**Exhibit 5. Orange County**

<b>Occupation (SOC)</b>	<b>2019 Jobs</b>	<b>2024 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings (25th Percentile)</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings (75th Percentile)</b>
Agricultural and Food Science Technicians (19-4011)	156	160	4	3%	20	\$13.27	\$16.18	\$23.01
Dietetic Technicians (29-2051)	415	448	33	8%	42	\$13.22	\$16.15	\$21.48
Chefs and Head Cooks (35-1011)	2,599	2,774	175	7%	386	\$13.72	\$19.75	\$27.19
<b>Total</b>	<b>3,169</b>	<b>3,382</b>	<b>213</b>	<b>7%</b>	<b>448</b>			

**Exhibit 6. Los Angeles and Orange Counties**

<b>Occupation (SOC)</b>	<b>2019 Jobs</b>	<b>2024 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings (25th Percentile)</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings (75th Percentile)</b>
Agricultural and Food Science Technicians (19-4011)	631	638	7	1%	79	\$13.70	\$16.68	\$23.69
Dietetic Technicians (29-2051)	1,941	2,087	146	8%	192	\$12.93	\$15.80	\$21.00
Chefs and Head Cooks (35-1011)	9,617	10,286	669	7%	1,435	\$13.38	\$20.14	\$28.01
<b>Total</b>	<b>12,189</b>	<b>13,011</b>	<b>822</b>	<b>7%</b>	<b>1,706</b>			

## 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
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- 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)

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