Labor Market Analysis for Program Recommendation: 1306.30/Culinary Arts (*Basic Baking and Pastry*) (*Advanced Baking and Pastry CoA*) (*Advanced Baking and Pastry AS*)

Orange County Center of Excellence, June 2024

Summary

Program LMI Endorsement	Endorsed: All LMI Criteria Met ☐	Endorsed: Some LMI Criteria Met ☒	Not LMI Endorsed ☐

Program LMI Endorsement Criteria		
	Yes ☑	No ☐
Supply Gap:	*Comments:* There are projected to be **21,263 annual job openings** throughout Los Angeles and Orange counties for these culinary occupations, which **is more than the 1,124 awards conferred by educational institutions.** However, demand is overstated because two occupations include a variety of culinary positions, not solely those related to baking and pastry.	
	Yes ☐	No ☑
Living Wage: (Entry-Level, 25th)	*Comments:* **All annual job openings** for these culinary occupations **have entry-level hourly wages significantly below the OC living wage of $20.63.**	
	Yes ☑	No ☐
Education:	*Comments:* Though the majority (57%) of annual openings for these occupations typically require no formal educational credential, **25% to 38% of workers in the field have completed some college or an associate degree as their highest level of education.**	

Emerging Occupation(s)	
Yes ☐	*No* ☑
Comments: N/A	

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles/Orange County regional labor market related to three culinary occupations:

- Below Middle-Skill – denoted with a carrot (^) throughout this report.
  - *Cooks, Restaurant (35-2014)^*
  - *Bakers (51-3011)^*
- Middle-Skill
  - *First-Line Supervisors of Food Preparation and Serving Workers (35-1012)*

Middle-skill occupations typically require a community college education while below middle-skill occupations usually request up to a high school diploma or equivalent. Though OC COE labor market analysis reports typically focus on middle-skill occupations, the below middle-skill occupations included in this report align with program objectives. Additionally, students can obtain employment in these below middle-skill occupations with a community college education. Therefore, the endorsement of this report considers data for both the below middle-skill and middle-skill occupations.

Based on the available data, there appears to be a supply gap for these culinary occupations and typical education requirements for these occupations align with a community college education. However, it is important to note that *cooks, restaurant*^ and *first-line supervisors of food preparation and serving workers* includes a variety of culinary positions, such as fry cook, line cook, bar manager, and more. Because these occupations include a variety of culinary positions, and not solely those related to baking and pastry, demand for baking and pastry roles is overstated. Furthermore, all annual openings have entry-level wages significantly below the living wage. **Therefore, due to some regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the occupations included in this report.

Exhibit 1: Labor Market Endorsement Summary

Occupation (SOC)	Demand (Annual Openings)	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25th Percentile)	Typical Entry-Level Education	Community College Educational Attainment
Cooks, Restaurant (35-2014)^	LA: *7,450*	LA: 649	OC: $15.87	No formal educational credential	25%
	OC: 2,968	OC: 305			
	TTL: *10,418*	TTL: *955*			
Bakers (51-3011)^	LA: 1,401	LA: *54*	OC: $15.66	No formal educational credential	29%
	OC: 398	OC: 0			
	TTL: *1,799*	TTL: *54*			
Below Middle-Skill Total	**12,217**	**1,008**	**N/A**	**N/A**	**N/A**
First-Line Supervisors of Food Preparation and Serving Workers (35-1012)	LA: 6,540	LA: 84	OC: $16.73	High school diploma or equivalent	38%
	OC: 2,506	OC: 32			
	TTL: *9,046*	TTL: *115*			
Middle-Skill Total	**9,046**	**115**	**N/A**	**N/A**	**N/A**
Total	**21,263**	**1,124**	**N/A**	**N/A**	**N/A**

Demand:

- The number of jobs related to these culinary occupations is projected to increase 16% through 2027, resulting in 21,263 projected annual job openings.
- Hourly entry-level wages for these culinary occupations range from $15.66 to $16.73 in Orange County; all annual job openings have entry-level wages below the living wage.
- There were 18,358 online job postings for these culinary occupations over the past 12 months. The highest number of postings were for shift leaders, cooks, and shift supervisors.
- The typical entry-level education for these culinary occupations ranges from no formal educational credential to a high school diploma or equivalent.
- Between 25% and 38% of workers in these occupations have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 884 awards conferred by 21 community colleges in Los Angeles and Orange Counties from 2019 to 2022.
- Non-community college institutions conferred an average of 240 awards from 2019 to 2021.
- Orange County community college students that exited culinary arts programs in the 2020-21 academic year had a median annual wage of $35,744 ($17.18 per hour) after exiting the program and 34% attained the regional living wage.
- Throughout Orange County, 62% of culinary arts students that exited their program in 2019-20 reported that they are working in a job closely related to their field of study.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for all three culinary occupations from 2017 through 2027. Employment for these three culinary occupations decreased 20% in Orange County from 2019 to 2020 due to the COVID-19 pandemic, which is significantly higher than the 7% decline across all occupations in Los Angeles and Orange counties during the same period.

In the three years preceding the pandemic, employment for these occupations experienced a continuous increase through 2019. After declines in employment in 2020 and an increase through 2022, employment for these three occupations is projected to increase at a higher rate relative to all occupations in Los Angeles and Orange counties.

Exhibit 2: Annual Percent Change in Jobs for Culinary Occupations, 2017-2027

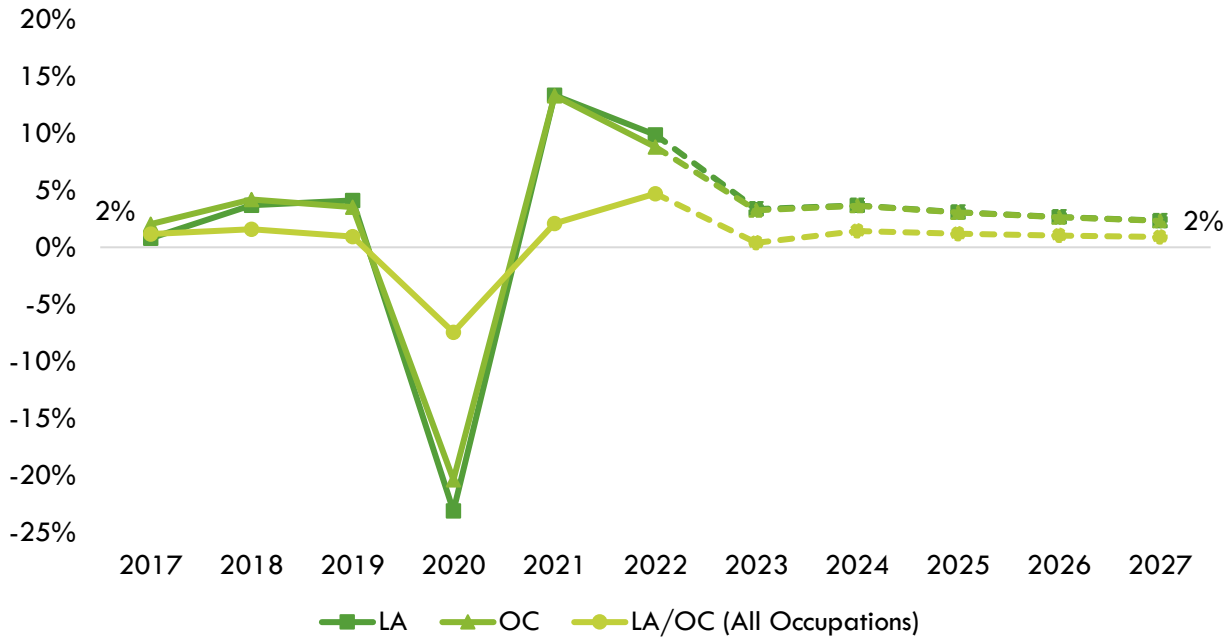


Exhibit 3 shows the five-year occupational demand projections for *cooks, restaurant^* and *bakers^*, the two below middle-skill occupations included in this report. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase 18% through 2027. There is projected to be 12,217 jobs available annually.

Exhibit 3: Below Middle-Skill Occupational Demand in Los Angeles and Orange Counties

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	44,555	52,847	8,293	19%	8,852
Orange	17,103	20,171	3,068	18%	3,366
Total	**61,657**	**73,018**	**11,361**	**18%**	**12,217**

Exhibit 4 shows the five-year occupational demand projections for *first-line supervisors of food preparation and serving workers,* the only middle-skill occupation analyzed in this report. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase 13% through 2027. There is projected to 9,046 jobs available annually.

Exhibit 4: Middle-Skill Occupational Demand in Los Angeles and Orange Counties[1]

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	36,320	40,992	4,672	13%	6,540
Orange	13,863	15,690	1,827	13%	2,506
Total	**50,183**	**56,681**	**6,499**	**13%**	**9,046**

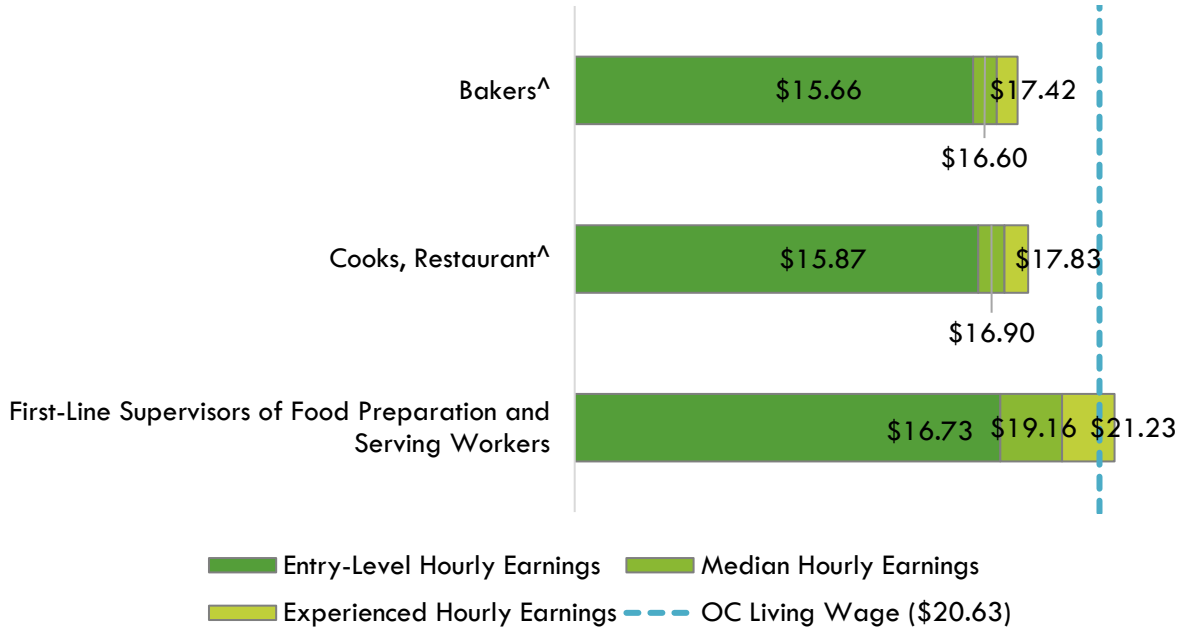
Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these culinary occupations in Orange County as they relate to the county's living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region.

All annual openings for these culinary occupations have entry-level wages significantly below the living wage for one adult ($20.63 in Orange County). Typical entry-level hourly wages range between $15.66 and $16.73. Orange County's average wages of $19.21 are below the average statewide wage of $20.02 for these occupations. Exhibit 5 shows the wage range for each of the three culinary occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

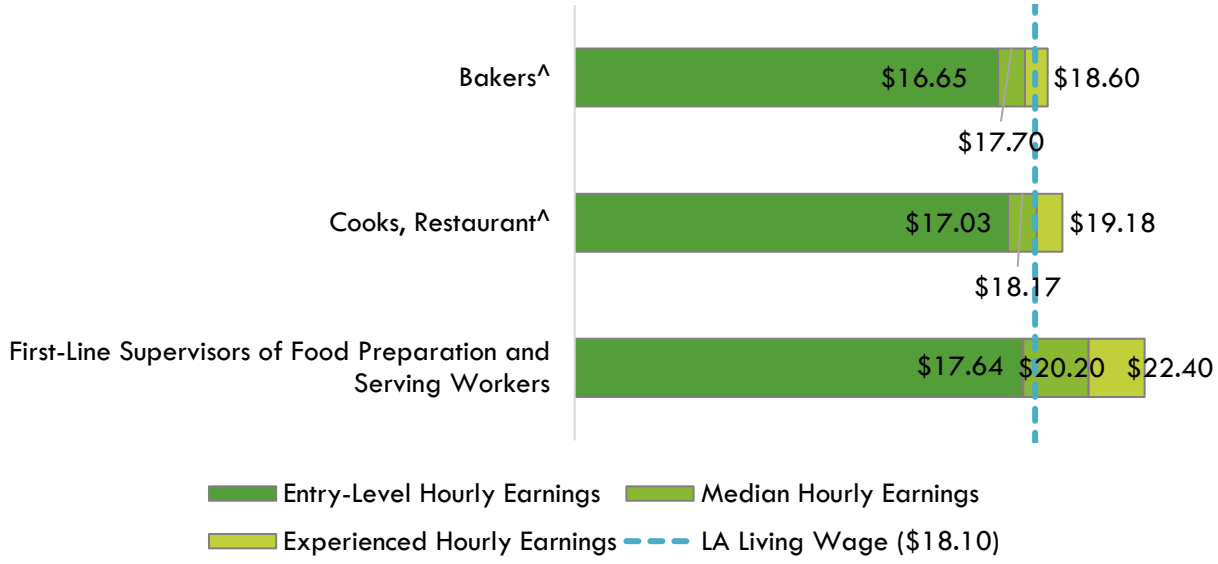
[1] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 3: Wages by Occupation in Orange County



All annual openings for these culinary occupations have entry-level wages below the living wage for one adult ($18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between $16.65 and $17.64. Los Angeles County's average wages of $20.42 are above the average statewide wage of $20.02 for these occupations. Exhibit 6 shows the wage range for each of the three culinary occupations in Los Angeles County how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 4: Wages by Occupation in Los Angeles County



Job Postings:

Important Online Job Postings Data Note: *Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.*[2] *For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.*

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 18,358 online job postings related to the three culinary occupations listed in the past 12 months. Of those, most were for *first-line supervisors of food preparation and serving workers*, followed by *cooks, restaurant^*. Exhibit 7 shows the number of job postings by occupation.

Exhibit 5: Number of Job Postings by Occupation (n=18,358)

Occupation	Job Postings	Percentage of Job Postings
First-Line Supervisors of Food Preparation and Serving Workers	10,308	56%
Cooks, Restaurant^	5,582	30%
Bakers^	2,468	13%
Total Postings	**18,358**	**100%**

The top employers for *cooks, restaurant^* and *bakers^* in the region, by number of job postings, are shown in Exhibit 8.

Exhibit 6: Top Below Middle-Skill Employers by Number of Job Postings (n=8,050)

Employer	Job Postings	Percentage of Job Postings
Compass Group	272	3%
Sodexo	182	2%
El Super	177	2%
Marriott International	149	2%
Rubio's Coastal Grill	143	2%
Panera Bread	135	2%
Hilton	115	1%
California Pizza Kitchen	111	1%
Buffalo Wild Wings	99	1%
Northgate Gonzalez Market	99	1%

[2] K. R. Chowdhary, Fundamentals of Artificial Intelligence (Basingstoke: Springer Nature, 2020), https://link.springer.com/book/10.1007/978-81-322-3972-7.

The top employers for *first-line supervisors of food preparation and serving workers* in the region, by number of job postings, are shown in Exhibit 9.

Exhibit 7: Top Middle-Skill Employers by Number of Job Postings (n=10,308)

Employer	Job Postings	Percentage of Job Postings
Starbucks	918	9%
Walgreens Boots Alliance	271	3%
Taco Bell	238	2%
Rubio's Coastal Grill	160	2%
El Pollo Loco	154	1%
Kentucky Fried Chicken	138	1%
Panera Bread	125	1%
Restaurant Depot	123	1%
Wendy's	102	1%
Compass Group	101	1%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *cooks, restaurant^* and *bakers^* in Exhibit 10.

Exhibit 8: Top Skills for Below Middle-Skill Occupation by Number of Job Postings (n=8,050)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Cooking (2,350)	Sanitation (2,608)	Microsoft Office (44)
Food Safety And Sanitation (2,049)	Communication (1,928)	Microsoft Outlook (35)
Restaurant Operation (1,970)	Customer Service (1,852)	Microsoft Excel (34)
Food Preparation (1641)	Cleanliness (1,758)	Microsoft PowerPoint (16)
Baking (1,629)	Management (1,461)	Google Workspace (13)
Food Services (1,132)	Lifting Ability (1,059)	Inventory Control Systems (12)
Grilling (973)	Detail Oriented (1,048)	Kismet (Software) (6)
Food Quality Assurance And Control (830)	Operations (744)	Spreadsheets (5)
Cake Decorating (640)	Teamwork (735)	Inventory Management System (4)
General Mathematics (536)	Multitasking (681)	Microsoft Publisher (4)

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *first-line supervisors of food preparation and serving workers* in Exhibit 11.

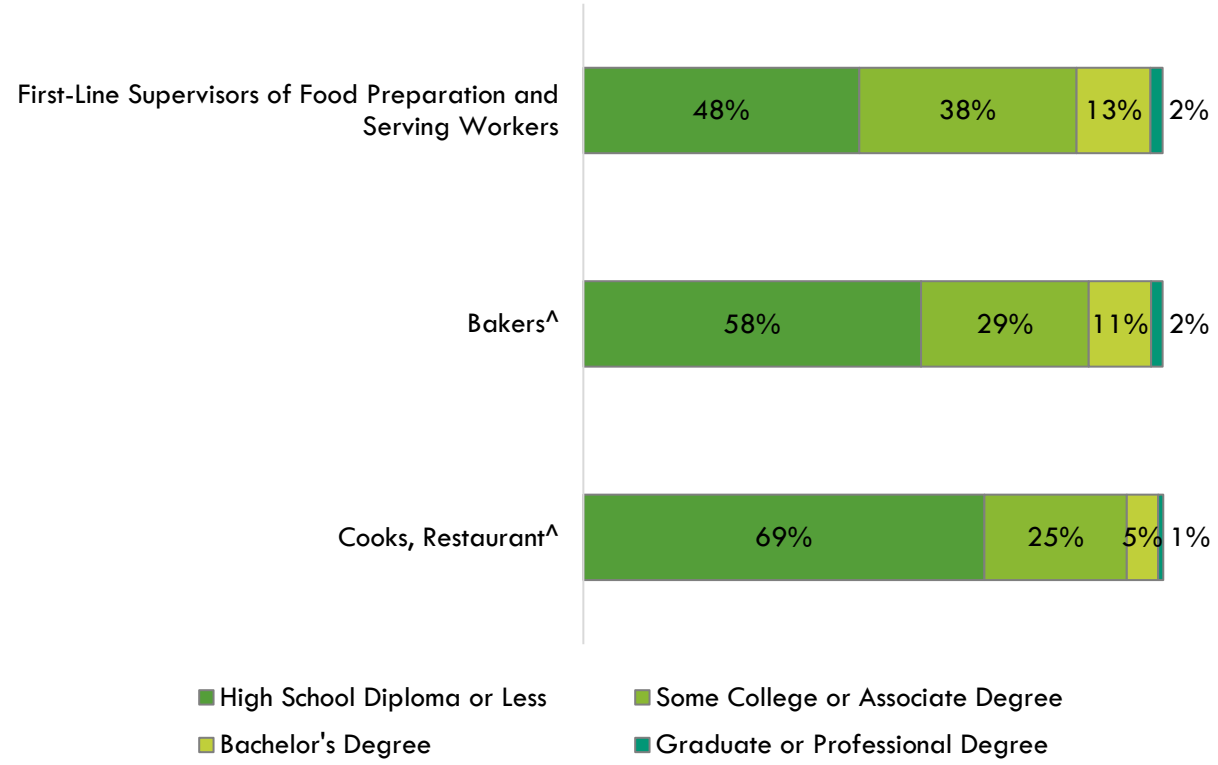
Exhibit 9: Top Skills for Middle-Skill Occupations by Number of Job Postings (n=10,308)

Top Specialized Skills	Top Soft Skills	Top Software and Computer Skills
Restaurant Operation (4,304)	Customer Service (4,101)	Microsoft Outlook (362)
Cash Handling (2,033)	Communication (3,876)	Microsoft Word (324)
Food Safety And Sanitation (1,639)	Leadership (3,235)	Microsoft Office (252)
Retail Operations (1,033)	Management (2,972)	Microsoft Excel (250)
Food Services (940)	Operations (2,431)	Microsoft PowerPoint (134)
Cash Register (796)	Sales (1,637)	Autodesk Revit (108)
General Mathematics (657)	Cleanliness (1,416)	AutoCAD (87)
Customer Complaint Resolution (563)	Sanitation (1,359)	Lync SDN (Software-Defined Networking) Manager (43)
Food Preparation (558)	Energetic (1,290)	SketchUp (3D Modeling Software) (43)
Merchandising (507)	Coordinating (1,239)	Jersey (Java Framework) (38)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists no formal education credential as the typical entry-level education for *bakers^* and *cooks, restaurant^*, and a high school diploma or equivalent for *first-line supervisors of food preparation and serving workers*. The national-level educational attainment data indicates between 25% and 29% of workers in the below middle-skill occupations and 38% of workers in the middle-skill occupation have completed some college or an associate degree as their highest level of education. Exhibit 12 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Exhibit 10: National-level Educational Attainment for Occupations



Of the 23% of the postings for the below middle-skill occupations that listed a minimum education requirement, 85% (1,553) requested a high school diploma or an associate degree and 11% (202) requested a bachelor's degree.

Conversely, of the 27% of the cumulative job postings for the middle-skill occupation that listed a minimum education requirement in Los Angeles/Orange County, 74% (2,077) requested a high school diploma or an associate degree and 25% (686) requested a bachelor's degree.

Educational Supply

Community College Supply:

Exhibit 13 shows the three-year average number of awards conferred by community colleges in the related TOP codes: Nutrition, Foods, and Culinary Arts (1306.00), Dietetic Services and Management (1306.20), Culinary Arts (1306.30), and Restaurant and Food Services and Management (1307.10). The colleges with the most completions in the region are: LA Mission, LA Trade, and Cypress. Over the past 12 months, there was one other related program recommendation request from regional community colleges.

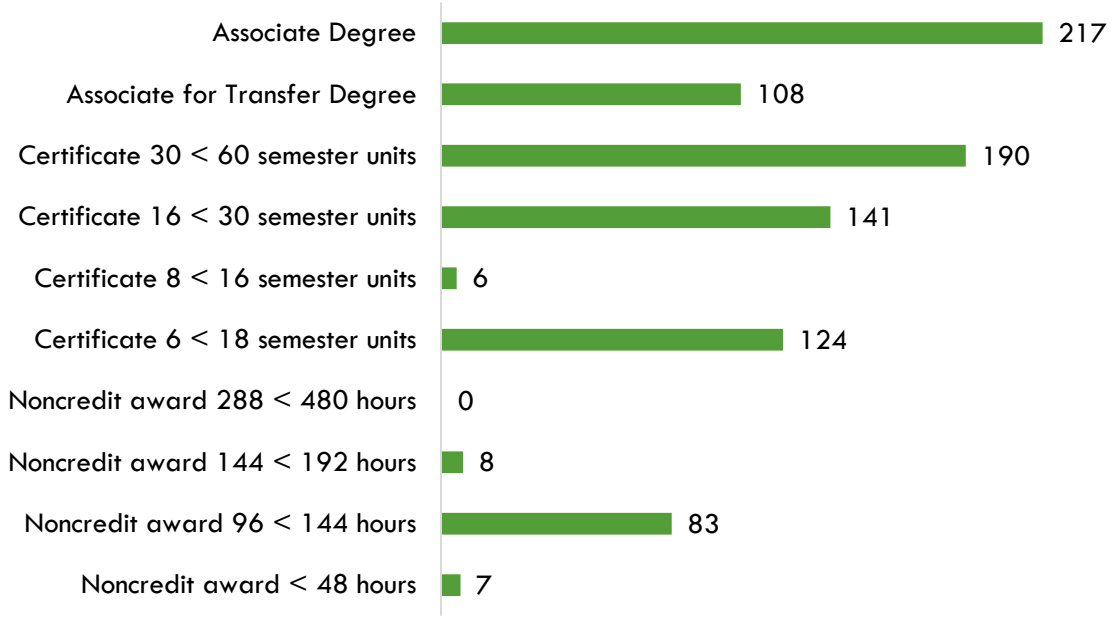
Exhibit 11: Regional Community College Awards (Certificates and Degrees), 2019-2022

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
1306.00	Nutrition, Foods, and Culinary Arts	Citrus	0	4	6	3
		East LA	23	18	21	21
		Glendale	6	0	6	4
		LA City	1	0	4	2
		LA Harbor	0	0	3	1
		LA Mission	4	7	4	5
		LA Southwest	0	2	2	1
		LA Trade	0	0	3	1
		Long Beach	8	19	16	14
		Mt San Antonio	15	19	25	20
		Pasadena	2	10	3	5
		Rio Hondo	1	3	1	2
		Santa Monica	5	9	11	8
		West LA	2	4	5	4
		LA Subtotal	**67**	**95**	**110**	**91**
		Cypress	2	1	3	2
		Fullerton	8	17	13	13
		Orange Coast	20	17	11	16
		Saddleback	19	24	12	18
		Santa Ana	3	1	2	2
		OC Subtotal	**52**	**60**	**41**	**51**
Supply Subtotal/Average			**119**	**155**	**151**	**142**
1306.20	Dietetic Services and Management	Glendale	16	12	23	17
		LA City	7	8	6	7
		Long Beach	5	8	23	12
		LA Subtotal	**28**	**28**	**52**	**36**
		Orange Coast	3	6	3	4
		OC Subtotal	**3**	**6**	**3**	**4**

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
Supply Subtotal/Average			**31**	**34**	**55**	**40**
1306.30	Culinary Arts	Cerritos	86	68	54	69
		LA Harbor	14	40	83	46
		LA Mission	151	74	108	111
		LA Trade	80	71	132	94
		Long Beach	44	46	28	39
		Mt San Antonio	15	3	20	13
		Pasadena	0	0	1	0
		LA Subtotal	**390**	**302**	**426**	**373**
		Cypress	61	58	89	69
		Orange Coast	82	60	88	77
		Saddleback	23	28	18	23
		Santa Ana	0	1	5	2
		Santiago Canyon	55	67	128	83
		OC Subtotal	**221**	**214**	**328**	**254**
Supply Subtotal/Average			**611**	**516**	**754**	**627**
1307.10	Restaurant and Food Services and Management	Cerritos	6	11	10	9
		LA Mission	40	15	18	24
		LA Trade	11	5	13	10
		Mt San Antonio	8	1	5	5
		LA Subtotal	**65**	**32**	**46**	**48**
		Cypress	41	15	26	27
		Orange Coast	0	1	0	0
		OC Subtotal	**41**	**16**	**26**	**28**
Supply Subtotal/Average			**106**	**48**	**72**	**75**
Supply Total/Average			**867**	**753**	**1,032**	**884**

Exhibit 14 shows the annual average community college awards by type from 2019-20 through 2021-22. The plurality of the awards are for associate degrees, followed by certificates between 30 and less than 60 semester units and certificates between 16 and less than 30 semester units.

Exhibit 12: Annual Average Community College Awards by Type, 2019-2022



Community College Student Outcomes:

Exhibit 15 shows the Strong Workforce Program (SWP) metrics for culinary arts programs in South Orange County Community College District (SOCCCD), the Orange County Region, and California. Of the 1,205 culinary arts students in the 2020-21 academic year, 20% (243) attended an SOCCCD college.

SOCCCD students that exited culinary arts programs in the 2020-21 academic year had higher median annual earnings ($36,922 or $17.75 per hour) compared to all culinary arts students in Orange County ($35,744 or $17.18 per hour). A slightly higher percentage of SOCCCD culinary arts students attained the living wage (35%) when compared to all culinary arts students in Orange County (34%).

Exhibit 13: Culinary Arts (1303.30) Strong Workforce Program Metrics, 2020-21[3]

SWP Metric	SOCCCD	OC Region	California
SWP Students	243	1,205	8,072
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	35%	28%	34%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	Insufficient Data	96%	81%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	11	128	680
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	11	26	197
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	40%	62%	68%

[3] All SWP metrics are for 2020-21 unless otherwise noted.

SWP Metric	SOCCCD	OC Region	California
Median Annual Earnings for SWP Exiting Students	$36,922 ($17.75)	$35,744 ($17.18)	$32,340 ($15.55)
Median Change in Earnings for SWP Exiting Students	39%	37%	28%
SWP Exiting Students Who Attained the Living Wage	35%	34%	42%

Non-Community College Supply:

To comprehensively analyze the regional supply, it is crucial to include data from other institutions offering culinary training programs. Exhibit 16 displays the annual and two-year average awards granted by these institutions under the related Classification of Instructional Programs (CIP) Codes: Baking and Pastry Arts/Baker/Pastry Chef (12.0501) and Culinary Arts/Chef Training (12.0503). No awards were conferred for the following CIP codes: Cooking and Related Culinary Arts, General (12.0500) and Foodservice Systems Administration/Management (19.0505).

The available data covers 2019 to 2021. During this period, non-community college institutions in the region conferred an average of 240 awards annually in related training programs.

Exhibit 14: Regional Non-Community College Awards, 2019-2021

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2-Year Award Average
12.0501	Baking and Pastry Arts / Baker / Pastry Chef	Institute of Culinary Education	47	52	50
		University of Antelope Valley	5	3	4
Supply Subtotal/Average			**52**	**55**	**54**
12.0503	Culinary Arts / Chef Training	Hacienda La Puente Adult Education	9	4	7
		Institute of Culinary Education	164	195	180
Supply Subtotal/Average			**173**	**199**	**186**
Supply Total/Average			**225**	**254**	**240**

Regional Demographics

This section examines demographic data for Orange County community college students in culinary arts programs compared to the OC population, along with occupational data, to identify potential diversity and equity issues addressable by community college programs.

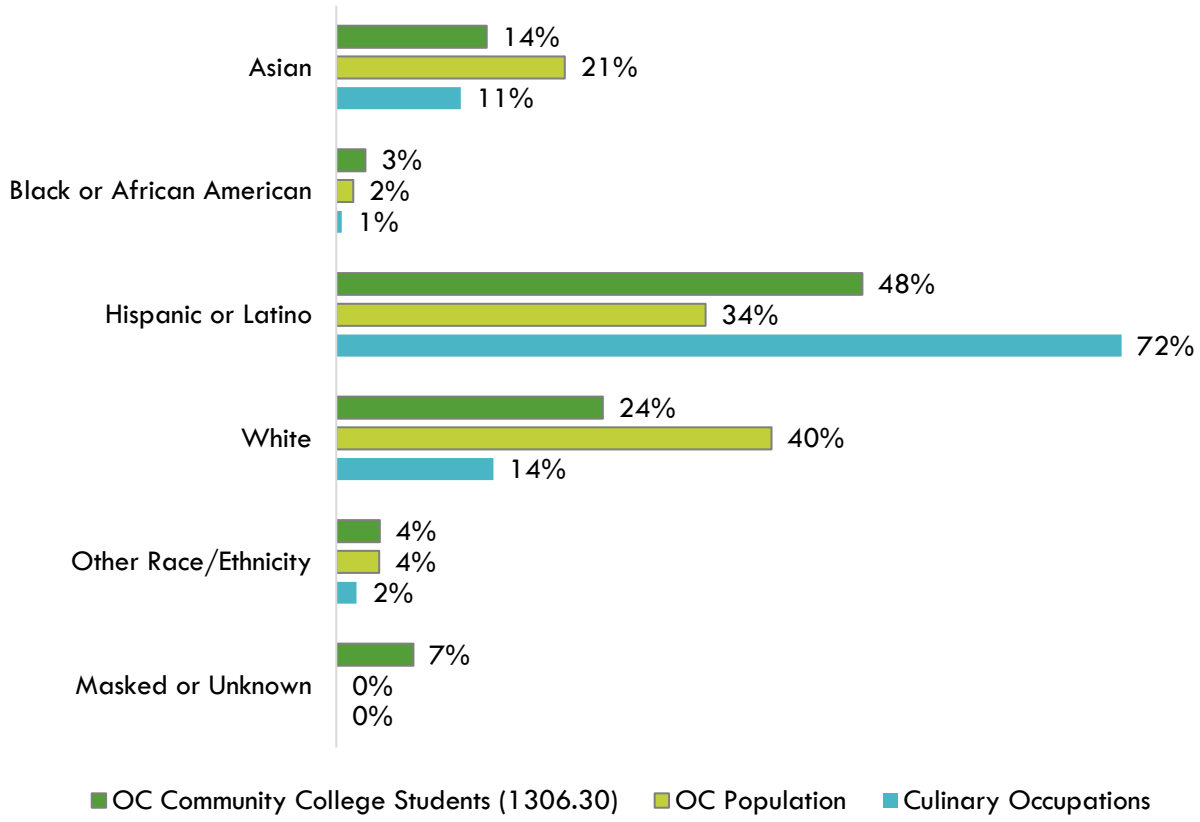
Ethnicity:

Exhibit 17 compares the ethnicity of Orange County community college students enrolled in culinary arts programs, the overall Orange County population, and occupation-specific data for the three culinary occupations included in this report.

Notably, a large majority of workers (72%) in these culinary occupations and the plurality of community college culinary arts students (48%) are Hispanic or Latino, both percentages of which are significantly higher than the Hispanic or Latino share of the county population (34%). Conversely, the plurality of individuals in the county population are white (40%), which is significantly higher than workers in the field (14%) and community college culinary arts students (24%).

Examining disaggregated data for each occupation (not shown), Hispanic or Latino individuals account for the majority of workers across each of the three culinary occupations: *cooks, restaurant*^ (75%), *bakers*^ (66%), and *first-line supervisors of food preparation and serving workers* (62%). The occupation with the highest percentage of white workers is *first-line supervisors of food preparation and serving workers*. This occupation also has the highest entry-level ($16.73 per hour) and education requirements (high school diploma or equivalent) of all three culinary occupations.

Exhibit 15: Program and County Demographics by Ethnicity



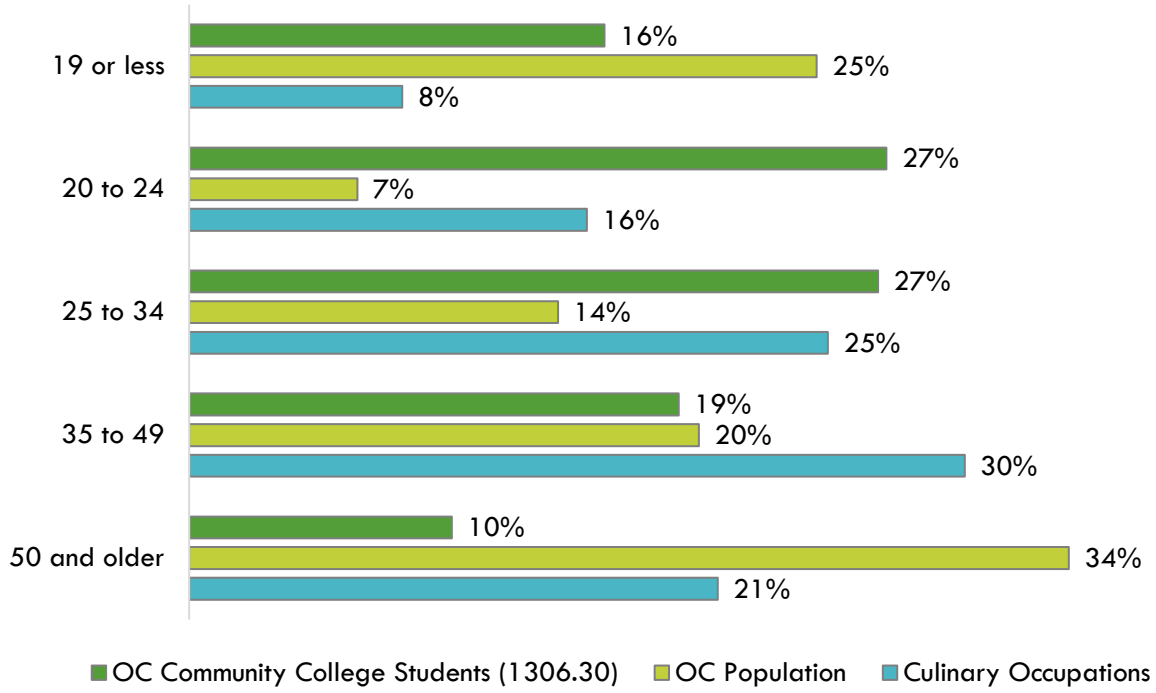
Age:

Exhibit 18 compares the age of Orange County community college students enrolled in culinary arts programs, the overall Orange County population, and occupation-specific data for the three culinary occupations included in this report.

The majority (54%) of community college culinary arts students are 20 to 34, which is higher than their representation amongst workers (41%) in the field and more than double their share of the population (41%). Disaggregated by age range, individuals 20 to 24 and 25 to 34 account for the same percentage (27%) of community college culinary arts students. In addition, though individuals 35 and older account for most individuals in the population (54%) and workers in the field (51%), this age group represents only 29% of community college culinary arts students.

Examining disaggregated data for each occupation (not shown), most (61%) *first-line supervisors of food preparation and serving workers* are 34 or younger. This occupation has the highest entry-level wages ($16.73 per hour) and education requirements (high school diploma or equivalent) of all three culinary occupations. Conversely, workers 35 and older account for most *cooks, restaurant*^ (53%) and *bakers*^ (60%), both occupations of which are classified as below middle-skill.

Exhibit 16: Program and County Demographics by Age



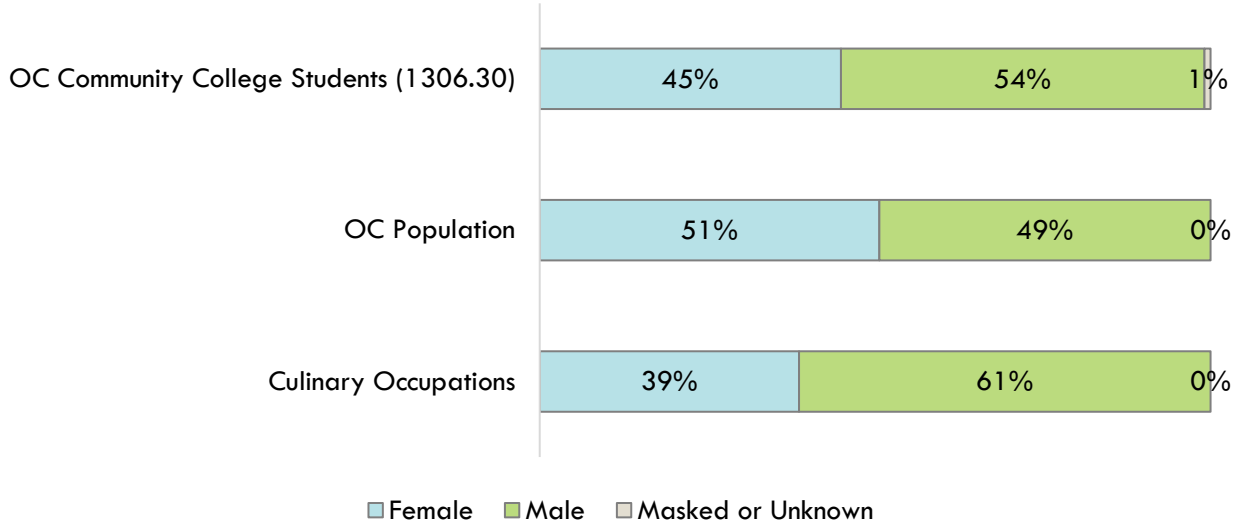
Sex:

Exhibit 19 compares the sex of Orange County community college students enrolled in culinary arts programs, the overall Orange County population, and occupation-specific data for these culinary occupations.

Though the population is split nearly evenly between women and men, only 45% of culinary arts and 39% of workers in the field are women.

Examining disaggregated data for each occupation (not shown), men account for the majority of workers in the below middle-skill occupations. However, 53% of *first-line supervisors of food preparation and serving workers* are women. This occupation has the highest entry-level wages ($16.73 per hour) and education requirements (high school diploma or equivalent) of all three culinary occupations.

Exhibit 17: Program and County Demographics by Sex



Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- 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.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a "supply table" with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/
Living Wage	The living wage is derived from the Insight Center's California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, child care, health care, transportation, and taxes. For more information, see: https://insightcced.org/family-needs-calculator/ The living wage for one adult in Orange County is $20.63 per hour ($42,910.40 annually). This figure is used by the CCCCO to calculate the percentage of students that attained the regional living wage.
Typical Education and Training Requirements, and Educational Attainment	The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/
Educational Supply	The CCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions
Student Metrics and Demographics	LaunchBoard, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://www.calpassplus.org/LaunchBoard/Home.aspx

Data Type	Source
Population and Occupation Demographics	The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml

For more information, please contact the Orange County Center of Excellence:

Jesse Crete, Ed. D., Director
crete_jesse@rsccd.edu

Jacob Poore, Assistant Director
poore_jacob@rsccd.edu

C·O·E
CENTERS OF EXCELLENCE
FOR LABOR MARKET RESEARCH

June 2024