

Program Endorsement Brief: 0953.40/ Mechanical Drafting

Computer Aided Design - Mechanical

Los Angeles/Orange County Center of Excellence, April 2021

Summary Analysis

Program Endorsement:	Endorsed: All Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some Criteria Met <input type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Education:	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Emerging Occupation(s)			
	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>

The Los Angeles/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 middle-skill occupation: *mechanical drafters* (17-3013). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹ 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 occupation(s).

Based on the available data, there appears to be a supply gap for *mechanical drafters* in the region. In addition to *mechanical drafters* typically requiring an associate degree, the entry-level wage (\$22.56) exceeds the living wage in both Los Angeles and Orange counties. **Therefore, due to all of the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **168 jobs available annually** in the region due to retirements and workers leaving the field, **which is more than the 66 awards conferred annually** by educational institutions in the region.
- **Living Wage Criteria** – In Los Angeles County, the **typical entry-level hourly wage for mechanical drafters is \$22.56, which is higher than the California Family Needs**

¹ 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.

Calculator hourly wage (living wage) for one adult in the region (\$15.04 in Los Angeles County).²

- **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for *mechanical drafters* (17-3013).
 - National-level educational attainment data indicates **55% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **five community colleges** in the LA/OC region that issue awards related to mechanical drafting, conferring an average of **30 awards annually** between 2017 and 2020.
- Between 2014 and 2017, there was an average of **36 awards conferred annually** in related training programs by non-community college institutions.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for *mechanical drafters* (17-3013). In Los Angeles/Orange County, the number of jobs related to this occupation is projected to decrease by 11% through 2024. However, there will be nearly 200 job openings per year through 2024 due to retirements and workers leaving the field.

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 Counties³

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	1,348	1,154	(194)	(14%)	106
Orange	725	693	(32)	(4%)	62
Total	2,073	1,847	(226)	(11%)	168

² Living wage data was pulled from California Family Needs Calculator on 4/29/2021. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages

The labor market endorsement in this report considers the entry-level hourly wage for *mechanical drafters* (17-3013) in Los Angeles County, as it relates to the county's living wage. Orange 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.

Los Angeles County: The typical entry-level hourly wage for *mechanical drafters* (17-3013) is \$22.56, which is above the living wage for one adult (\$15.04 in Los Angeles County). Experienced workers can expect to earn wages of \$38.30, which is higher than the living wage estimate.

Orange County: The typical entry-level hourly wage for *mechanical drafters* (17-3013) is \$23.30, which is above the living wage for one adult (\$17.36 in Orange County). Experienced workers can expect to earn wages of \$39.17, which is higher than the living wage estimate.

Job Postings

Over the past 12 months, there have been 236 online job postings related to *mechanical drafters*. The highest number of job postings were for drafter, senior electrical engineering technical designer, and mechanical designer. The top skills were AutoCAD, Revit, and Project Management. The top employers, by number of job postings, in the region were The Boeing Company, Sanmina Corporation, and Peak Technical Services Incorporated.

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 an associate degree as the typical entry-level education for *mechanical drafters* (17-3013). National-level educational attainment data indicates 55% of workers in the field have completed some college or an associate degree. Of the 56% of job postings listing a minimum education requirement in Los Angeles/Orange County, 21% (27) requested a high school diploma, 35% (46) requested an associate degree, and 44% (58) requested a bachelor's degree.

Educational Supply

Community College Supply — Exhibit 2 shows the annual and three-year average number of awards conferred by community colleges in Mechanical Drafting (0953.40). The college with the most completions in the region is Long Beach. Over the past 12 months, there were two other related program recommendation requests from regional community colleges.

Exhibit 2: Regional community college awards (certificates and degrees), 2017-2020

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3 Year Award Average
0953.40	Mechanical Drafting	Glendale	-	5	11	5
		LA Pierce	-	1	-	0
		LA Valley	8	5	9	7
		Long Beach	23	8	10	14
		LA Subtotal	31	19	30	27
		Irvine Valley	-	4	5	3
		OC Subtotal	-	4	5	3
Supply Total/Average			31	23	35	30

Non-Community College Supply — It is important to consider the supply from non-community college institutions in the region that provide training programs for mechanical drafting. 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: 15.1301/Drafting and Design Technology / Technician, General; and 15.1302/CAD/CADD Drafting and/or Design Technology/Technician.

Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, non-community college institutions in the region conferred an average of 36 awards annually in related training programs.

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

CIP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-17 Awards	3 Year Award Average
15.1301	Drafting and Design Technology / Technician, General	ITT Technical Institute – Orange	38	-	-	13
		ITT Technical Institute – San Dimas	19	-	-	6
		ITT Technical Institute – Sylmar	7	-	-	2
		ITT Technical Institute – Torrance	12	-	-	4
		Los Angeles ORT College – Van Nuys Campus	1	-	-	0
15.1302	CAD/CADD Drafting and/or Design Technology / Technician	ITT Technical Institute-San Dimas	2	-	-	1
		Los Angeles ORT College-Los Angeles Campus	-	-	10	3
		Los Angeles ORT College-Van Nuys Campus	-	11	9	7
Supply Total/Average			79	11	19	36

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 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Mechanical Drafters (17-3013)	1,348	1,154	(194)	(14%)	106	\$22.56	\$28.94	\$38.30
Total	1,348	1,154	(194)	(14%)	106			

Exhibit 5. Orange County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Mechanical Drafters (17-3013)	725	693	(32)	(4%)	62	\$23.30	\$29.72	\$39.17
Total	725	693	(32)	(4%)	62			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Mechanical Drafters (17-3013)	2,073	1,847	(226)	(11%)	168	Associate degree
Total	2,073	1,847	(226)	(11%)	168	

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)

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