

Program Endorsement Brief: 0956.30/Machining and Machine Tools *Machine Shop Technology*

Los Angeles/Orange County Center of Excellence, June 2019

Summary

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide regional labor market supply and demand data related to machine shop technology. 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 relevant occupations.

The following summarizes key findings from this data brief:

- The number of jobs for occupations related to machine shop technology is projected to decrease by 3% through 2023; however, nearly 2,400 job openings will be available annually due to retirements and workers leaving the field.
- Over the past 12 months, there have been 3,548 online job postings related to machine shop technology in Los Angeles and Orange Counties.
- Five other related program recommendation requests were received during the past 12 months from regional community colleges.
- Fifteen colleges in the region have existing manufacturing and industrial technology; and machining and machine tools programs.
- Between 2015 and 2018, community colleges in the region conferred an average of 304 awards annually (associate degrees and certificates) in related training programs.

Occupational Demand — In Los Angeles/Orange County, the number of jobs related to machine shop technology is projected to decrease by 3%. However, there will be more than 3,600 job openings per year through 2023 due to retirements and workers leaving the field (Exhibit 1).

Exhibit 1: Occupational demand in Los Angeles and Orange Counties¹

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	15,314	14,627	(687)	(4%)	1,494
Orange	8,534	8,591	57	1%	870
Total	23,848	23,217	(631)	(3%)	2,363

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.

Wages — Entry-level wages for occupations related to machine shop technology in the region are between \$11.53 and \$14.34. Entry-level wages for these occupations are lower than the MIT Living hourly wage for one adult in the region (\$14.36 in Los Angeles County and \$15.85 in Orange County). Computer numerically controlled machine tool programmers, metal and plastic is the only machine tool technology occupation that is projected to add new jobs through 2023; this occupation also earns the highest wages (\$14.34 for entry-level wages, \$46.36 for experienced wages).

Job Postings — There were 3,548 online job postings related to machine shop technology listed in the past 12 months. The majority of job postings are for machinist, CNC operator, CNC programmer, CNC lathe operator and CNC lathe machinist. Top specialized skills are: computer numerical control (CNC), machining, and lathes. The top three employers, by number of job postings, in the region are: Arconic, Alcoa, and SpaceX.

Educational Attainment — The BLS lists a high school diploma or equivalent as the typical entry-level education for these occupations. The national-level educational attainment data indicates between 39% and 44% of workers in the field have completed some college or an associate degree. In Los Angeles/Orange County, over 90% of job postings request at least high school or vocational training.

Community College Supply — Appendix A shows the annual and three-year average number of awards conferred by community colleges in Manufacturing and Industrial Technology (0956.00) and Machine Tool Technology (0956.30). The colleges with the most completions in the region are: Orange Coast, Santa Ana, and El Camino. Last year, there were five other related program recommendation requests from regional community colleges.

Appendix A: Regional community college awards (certificates and degrees), 2015-2018

TOP Code	Program	College	2015-16 Awards	2016-17 Awards	2017-18 Awards	3-Year Award Average
0956.00	Manufacturing and Industrial Technology	Cerritos	4	3	6	4
		Compton	-	-	2	2
		El Camino	1	3	3	2
		Fullerton	10	3	11	8
		Irvine	9	7	1	6
		LA Valley	3	4	2	3
		Mt San Antonio	12	19	9	13
		Saddleback	6	5	9	7
		Santa Ana	4	-	1	3
		Santiago Canyon	-	-	27	27
Subtotal/Average			49	44	71	55
0956.30	Machining and Machine Tools	Cerritos	10	22	38	23
		Compton	5	3	1	3
		El Camino	53	39	32	41
		Fullerton	3	5	9	6

	Glendale	8	2	-	5
	LA Pierce	1	11	10	7
	LA Trade	19	19	17	18
	LA Valley	16	7	3	9
	Orange Coast	72	54	92	73
	Pasadena	5	-	-	5
	Santa Ana	51	64	78	64
	Subtotal/Average	243	226	280	250
	Total/Average	292	270	351	304

Appendix B: Occupational demand and wage data by county

Exhibit 2. Los Angeles County

Machinists (51-4041)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Computer-Controlled Machine Tool Operators, Metal and Plastic (51-4011)	11,164	10,642	(522)	(5%)	1,093	\$11.23	\$19.41	\$31.36
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic (51-4012)	3,400	3,234	(166)	(5%)	326	\$11.78	\$17.98	\$29.49
Machinists (51-4041)	749	751	2	0%	74	\$13.08	\$27.49	\$46.64
Total	15,314	14,627	(687)	(4%)	1,494			

Exhibit 3. Orange County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Machinists (51-4041)	5,529	5,559	30	1%	566	\$13.21	\$21.17	\$33.59
Computer-Controlled Machine Tool Operators, Metal and Plastic (51-4011)	2,457	2,455	(2)	(0%)	243	\$11.21	\$17.43	\$26.95
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic (51-4012)	547	576	29	5%	61	\$15.84	\$26.75	\$45.98
Total	8,534	8,591	57	1%	870			

Exhibit 4. Los Angeles and Orange Counties

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Machinists (51-4041)	16,694	16,201	(493)	(3%)	1,659	\$11.65	\$19.96	\$32.28
Computer-Controlled Machine Tool Operators, Metal and Plastic (51-4011)	5,858	5,689	(169)	(3%)	569	\$11.53	\$17.72	\$28.47
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic (51-4012)	1,296	1,327	31	2%	135	\$14.34	\$27.14	\$46.36
Total	23,848	23,217	(631)	(3%)	2,363			

Appendix C: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (EMSI)
- 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)
- MIT Living Wage
- Chancellor’s Office Curriculum Inventory (COCI 2.0)

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