CNC Operator and CNC Machinist – 0956.00
August 2018

Prepared by the South Central Coast Center of Excellence for Labor Market Research

Labor Market Information

This report was compiled by the South Central Coast[1] Center of Excellence to provide regional labor market data for occupations and programs related to CNC Operators and CNC Machinists. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study that align with this occupation group.

Overview

- In the South Central Coast region, the number of jobs related to CNC Operator and CNC Machinist are expected to remain steady over the next five years. Growth is expected for Computer-Controlled Machine Tool Operators, Metal and Plastic (3%) and Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic (10%).
- In 2017 there were three regional institutions with completions in Industrial Production Technologies/Technicians (15.06) resulting in 157 annual completions, 584 annual openings.
- Typical entry level education for occupations related to CNC Operator and CNC Machinist is High School Diploma or Equivalent or Postsecondary nondegree award, with Moderate-term or Long-term-on-the-job training.
- 1,713 students across the region took related courses in 2015-16
- The median annual wage after program completion for students across the state is $30,064
- 60% of students from programs across the state are earning a living wage
- 70% of students are employed after a year

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[1] The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

Currently, there are three occupations in the standard occupational classification (SOC) system that are related to the proposed certificates for CNC Operator and CNC Machinist. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

Exhibit 1 – Occupation, description, and sample job titles

SOC Code	Title	Description	Sample of Reported Job Titles
51-4011	**Computer-Controlled Machine Tool Operators, Metal and Plastic**	Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.	Brake Press Operator; Computer Numerical Control Lathe Operator; Computer Numerical Control Machine Operator; Computer Numerical Control Machinist; Computer Numerical Control Mill Operator; Computer Numerical Control Operator; Computer Numerical Control Set-Up and Operator; Machine Operator; Machine Set-Up, Operator; Machinist
51-4012	**Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic**	Develop programs to control machining or processing of metal or plastic parts by automatic machine tools, equipment, or systems.	CAD CAM Programmer. Computer Numerical Control Machine Operator, Computer Numerical Control Machining Center Operator, Computer Numerical Control Machinist. Computer Numerical Control Operator, Computer Numerical Control Programmer, Machine Shop Lead Man, Machining Manager, Process Engineer, Programmer
51-4041	**Machinists**	Set up and operate a variety of machine tools to produce precision parts and instruments. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, mathematics, metal properties, layout, and machining procedures.	Gear Machinist, Journeyman Machinist, Machine Operator, Machine Repair Person, Machinist, Maintenance Machinist, Maintenance Specialist, Production Machinist, Set-Up Machinist, Tool Room Machinist

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to CNC Operator and CNC Machinist are expected to remain steady over the next five years. Growth is expected for Computer-Controlled Machine Tool Operators, Metal and Plastic (3%) and Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic (10%). Exhibit 2 contains detailed employment projections data for these occupations.

Exhibit 2 – Five-year projections for CNC Operator and CNC Machinist in the South Central Coast region

SOC	Occupation	2017 Jobs	2022 Jobs	2017-2022 Change	2017-2022% Change	Annual Openings
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	779	803	24	3%	85
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	147	162	15	10%	18
51-4041	Machinists	3,044	3,042	-2	0%	314

Source: Economic Modeling Specialists International (EMSI)

*Total Jobs (2017), Average Change (2017-2022), and Median Hourly Earnings for Selected Occupations

3,976	+1%	$20.48/hr
Jobs (2017)	**% Change (2017-2022)**	**Median Hourly Earnings**
17% above National average	Nation: +3.5%	Nation: $20.19/hr

Earnings

Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 10th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 90th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for CNC Operator and CNC Machinist related occupations in the South Central Coast region

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	$15.10	$20.27	$26.76
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	$20.19	$28.39	$38.56
51-4041	Machinists	$15.36	$20.32	$24.93

Source: Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is employing those in the CNC Operator and CNC Machinist field, and what they are looking for in potential candidates.

Top Occupations

In 2017, there were 304 employer postings for the occupations selected for CNC Operator and CNC Machinist.

Exhibit 4 – Job Postings, Full Year 2017 (n=304)

SOC Code	Occupation	Job Postings, Full Year 2017
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	65
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	20
51-4041	Machinists	219

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for CNC Operator and CNC Machinist occupations are listed in Exhibit 5. CNC Machinist is mentioned as the job title in 31% of all relevant job postings (304 postings).

Exhibit 5 –Job titles (n=304)

Title	Job Postings, Full Year 2017
CNC Machinist	94
Machinist	89
CNC Machine Operator	23
CNC Lathe Machinist	14
CNC Operator	14

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the CNC Operator and CNC Machinist field. Top employers posting job ads included Rexnord, Lockheed Martin Corporation, Coorstek Incorporated, ITT Industries Incorporated, and Northrop Grumman. The top worksite cities in the region for these occupations were Simi Valley, Santa Clarita, Ventura, Oxnard, and Palmdale.

Exhibit 6 – Top employers (n=304)

Employer	Job Postings, Full Year 2017
Rexnord	20
Coorstek Incorporated	7
ITT Industries Incorporated	7
Lockheed Martin Corporation	6
Northrop Grumman	5

Source: Labor Insight/Jobs (Burning Glass)

Top Job Skills

Machining is the most sought after skill for employers hiring for CNC Operator and CNC Machinist. The other top job-specific skills desired by employers relate to computer numerical control (CNC), lathes, machine tools, and computerized numerical control lathes.

Exhibit 7 – Top Job skills (n=283)

Skills	Job Postings, Full Year 2017
Machining	267
Computer Numerical Control (CNC)	252
Lathes	172
Machine Tools	94
Computerized Numerical Control Lathes	65

Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

CNC Operator and CNC Machinist jobs in the South Central Coast region are most often found in the manufacturing industry. Exhibit 9 shows the industries where most in the field of CNC Operator and CNC Machinist are employed.

Exhibit 9 – Top Industries employing CNC Operator and CNC Machinist, 2017 (n=304)

Industry	Occupation Group Jobs in Industry	% of Occupation Group in Industry
Manufacturing	156	71%
Professional, Scientific, and Technical Services	41	19%
Administrative and Support and Waste Management and Remediation Services	9	4%
Public Administration	6	3%
Finance and Insurance	4	2%

Education and Training

Exhibit 10 shows the typical entry-level education requirement for the occupation of interest, along with the typical on-the-job training.

Exhibit 10 – Education and training requirements (2017)

SOC	Occupation	Typical entry-level education	Typical on-the-job training
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	High School Diploma or Equivalent	Moderate-term on-the-job training
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	Postsecondary nondegree award	Moderate-term on-the-job training
51-4041	Machinists	High School Diploma or Equivalent	Long-term on-the-job training

Source: Economic Modeling Specialists International, Bureau of Labor Statistics Employment Projections (Educational Attainment)

Currently, five of the eight community colleges in the South Central Coast courses related to the field of CNC Operator and CNC Machinist. Exhibit 11 displays the total number of students taking related courses and annual average community college awards for each of the colleges training in this field.

Exhibit 11 – Students taking related Courses and Completers 2016-17 (by TOP and College)

TOP Code	Program	College	Students taking Related Courses	Awards
		Allan Hancock	435	28
		Antelope Valley	161	14
		Canyons	313	32
0956	CNC Operator and CNC Machinist	Cuesta	417	4
		Moorpark	-	-
		Oxnard	-	-
		Santa Barbara	-	-
		Ventura	299	14

Source: California Community Colleges Chancellor's Office MIS Data Mart

In 2017 there were three regional institutions with completions in Industrial Production Technologies/Technicians (15.06) resulting in 157 annual completions, 584 annual openings.

3	157	584
Regional Institutions – Completions last 15 years	**Completions (2017)**	**Openings (2017)**

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of CNC Operator and CNC Machinist programs in the South Central Coast region for the 2015-16 academic year.

- 1,713 students across the region took related courses in 2015-16
- The median annual wage after program completion for students across the state is $30,064
- 60% of students from programs across the state are earning a living wage
- 70% of students are employed after a year

Source: CTE LaunchBoard

Sources
O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes
Data included in this analysis represents the labor market demand for positions most closely related to CNC Operator and CNC Machinist. Standard occupational classification (SOC) codes were chosen based on the training goals of the proposed certificates. 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.