

**PROGRAM APPROVAL APPLICATION**  
**NEW or SUBSTANTIAL CHANGE or LOCALLY APPROVED**  
**(This application may not exceed 3 pages)**

**Fill In Form**

Machine Technology Level II Certificate

Fall-2018

Proposed Program Title

Projected Program Start Date

Fullerton College  
College

North Orange County Community College District  
District

**Contact Information**

Doug Benoit  
Voting Member

Dean Business & CIS Office  
Title

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Phone Number

dbenoit@fullcoll.edu  
Email

**Goal(s) of Program (Check all that apply):**

- Career Technical Education (CTE)       Transfer       Other

**Type of Program (Check all that apply):**

- Certificate of Achievement 12-17 (or 17-27 quarter) units       Certificate of Achievement 18+ semester (or 27+ quarter) units  
 Associate of Science Degree       Associate of Arts Degree

**Reason for Approval Request (Check One):**

- New Program       Substantial Change       Locally Approved

**Program Information**

0956.00      Recommended [Taxonomy of Program \(TOP\) Code](#)  
 \_\_\_\_\_      Units for Major-Degree  
 \_\_\_\_\_      Total Units for Degree  
 34-36      Required Units-Certificate

**Written Form**

**1. Insert the description of the program as it will appear in the catalog. (See PCAH pp. 142 and 170)**

The Machine Technology Level II certificate is designed for students wishing to pursue a careers in more advanced machining or manufacturing areas. This type of certificate program typically leads to entry or intermediate level careers as a machinist, toolmaker, CNC operator, CNC programmer, manufacturing engineer, process engineer, field service technician as well as a number of other manufacturing/service positions. This Certificate Program requires the completion of 34-36 units of which 25 units are in required courses. An additional 9-11 units must be chosen from the restricted electives listed below. A minimum grade of "C" is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

**2. Provide a brief rationale for the program.**

- In 2013, the **average manufacturing worker earned around \$77,000 annually including benefits**. That pay is \$15,000 more than the average of all industries. (US Bureau of Labor Statistics)
- The United States economy relies on this sector. There are 17.6 million jobs in manufacturing in the United States; that's **1 of every 6 private sector jobs**. It is the foundation of economic stability and the ninth largest economy in the world.
- The median annual Machinist I salary in the Fullerton area is \$43,721 as of February 22, 2016. (Salary.com)
- Per the U.S. Bureau of Labor Statistics it is estimated that 12% of the Orange County workforce is employed in manufacturing jobs. The U. S. Bureau of Labor Statistics show since 2010, manufacturing employment in Orange County has recovered faster than in California and the United States. From 2010 to 2013 there was an 8% increase in manufacturing jobs in Orange County. According to the Boston Consulting Group there is an expected demand of manufacturing related positions due to a “reshoring” trend that is occurring in the United States. This trend has affected the California urban areas where manufacturing is occurring and it is expected to continue.

**3. Summarize the Labor Market Information (LMI) and employment outlook (including citation for the source of the data) for students exiting the program. (See PCAH pp. 85-88, 136, 147, 148, 165, 168, and 176)**

The three-year average supply from regional colleges is 51 per year.

Regional annual openings for the SOC codes listed within the 49 and 51 groups are 790 indicating a gap of 739 hires per year. Source: <http://coecc.net/supply-demand/> For Orange County

EDD enrollment projection stated below.

SOC Code	Occupational Title	Estimated Employment 2012	Projected Employment 2022	Numeric Change 2012-2022	Percent Change 2012-2022	Annual Average Percent Change
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Orange County

514041	Machinist	5,950	6,880	930	15.6	1.6
499041	Industrial Machinery Mechanics	1,520	1,850	330	21.7	2.2
499043	Maintenance Workers, Machinery	590	720	130	22.0	2.2
514011	Computer-Controlled Machine Tool Operators, Metal and Plastic	1,770	2,050	280	15.8	1.6
514012	Numerical Tool and Process Control Programmers	470	650	180	38.3	3.9
514111	Tool and Die Makers	800	830	30	3.8	.38
519061	Inspectors, Testers, Sorters, Samplers, and Weighers	7,010	7,290	280	4.0	.4

California

514041	Machinist	34,000	39200	5200	15.3	1.5
499041	Industrial Machinery Mechanics	20,900	26,100	5,200	24.9	2.5
499043	Maintenance Workers, Machinery	7,000	8,000	1,000	14.3	1.4
499044	Millwrights	2,400	2,800	400	16.7	1.7
514011	Computer-Controlled Machine Tool Operators, Metal and Plastic	8,600	10,000	1,400	16.3	1.6
514012	Numerical Tool and Process Control Programmers	2,500	3,600	1,100	44.0	4.4
514111	Tool and Die Makers	3,200	3,300	100	3.1	.31
519061	Inspectors, Testers, Sorters, Samplers, and Weighers	48,200	52,200	4,000	8.3	.83

4. List similar programs at other colleges in the Los Angeles and Orange County Region which may be adversely impacted. (There is space for 10 listings, if you need more, please contact [laocrc@rscdd.edu](mailto:laocrc@rscdd.edu))

College	Program	Who You Contacted	Outcome of Contact
Cerritos College	Manufacturing Technology	C. Vo and website	Left voice mail
Orange Coast College	Manufacturing Technology	Alan Cervantes	Left email
Santa Ana College	Manufacturing Technology	Dietrich Kanzler	Left email

5. List all courses required for program completion, including core requirements, restricted electives and prerequisites. (There is space for 20 listings, if you need more, please contact [laocrc@rscdd.edu](mailto:laocrc@rscdd.edu)). (See PCAH pp. 143 and 171)

Courses	Course Number	Course Title	Units
Required core (25)	DRAF070 F	Blueprint Reading for the Metal Trades	2
	DRAF173 F	Geometric Dimensioning and Tolerancing	2
	MACH110 F	CNC Machine Set-Up & Operation	3
	MACH101 F	Introduction to Machine Tools	5
	MACH102 F	Intermediate Machine Tools	5
	MACH103 F	Advanced Machine Tools	5
	TECH081 F	Technical Mathematics I	3
Restrictive Electives (9-11 units)	DRAF171 F	Fundamentals of Drafting	2
	METL192 F	Fundamentals of Metallurgy	3

	TECH108 F	Manufacturing Processes	3
	TECH127 F	Industrial Safety	1
	WELD121AF	Introduction to Welding	2
	MACH120 F	Advanced CNC Machining	3
	MACH116 F	Machine Tools	2
Total Units			34-36

**6. Include any other information you would like to share.**