



## 1. Catalog description of the program (program goals and objective)

De Anza College's Manufacturing and Computer Numerical Control (CNC) Technology program offers state-of-the-art instruction in computerized machining, model making, and materials processing. The curriculum is ideally suited to those who are new to the field, as well as conventional machinists and machine operators who wish to update their skills and advance in this rapidly changing industry. The Certificate of Achievement in Manufacturing Systems Technician is the initial point of entry into the Manufacturing and CNC program. Students who complete this program will have a solid foundation in basic manufacturing systems and processes with the opportunity to choose a further specialization in the areas of CNC Machinist, CNC Research and Development Machinist, or Product Model Making.

De Anza College's Manufacturing and CNC Technology program offers state-of-the-art classroom and lab facilities. Student have the opportunity to work with CNC lathes, mini mills, a self-enclosed machining center, coordinate measuring machines, inspection equipment, and a CAD/CAM programming lab. Manufacturing and CNC students also have access to conventional machining equipment. Manufacturing and CNC Technology offers an accelerated day program, designed for those who need to reenter the workforce quickly. Courses are also offered in the evening to accommodate incumbent workers. The Manufacturing and CNC Technology program is a Hass Technical Education Center (HTEC) and is in the process of becoming a certified Mastercam training provider. The program maintains strong industry connections with manufacturing facilities and job shops around the Bay Area, as well as major equipment manufacturers, software developers, and distributors.

## 2. Certificate and degree programs offered (title and units)

Skills Certificate (*not transcribed*) – **CAD/CAM - Mastercam** – 13.5 units  
Skills Certificate (*not transcribed*) – **CNC Machine Operator** – 13.5 units

Certificate of Achievement – **Manufacturing Systems Technician** – 22.5 units

Certificate of Achievement-Advanced – **CNC Machinist** – 40.5 units

Certificate of Achievement-Advanced – **CNC Research and Development Machinist** – 48 units

Certificate of Achievement-Advanced – **Product Model Making** – 41 units

A.S. Degree – **CNC Machinist** – 40.5 units plus General Education

A.S. Degree – **CNC Research and Development Machinist** – 48 units plus General Education

A.S. Degree – **Product Model Making** – 41 units plus General Education

### **3. Program-level Student Learning Outcomes**

### **4. Data on certificate and degree awards for previous year (2009-10)**

#### Certificates of Achievement

CNC Machine Operator – 1

#### Certificates of Achievement-Advanced *formerly Certificates of Proficiency*

CNC Machinist – 2

CNC Research and Development Machinist – 2

Product Model Making - 1

#### Associate in Science degrees

CNC Machinist – 5

CNC Research and Development Machinist – 2

Product Model Making – 3

### **5. Regional and State Labor Market Data**

Employment opportunities for Manufacturing and CNC Technology program graduates exist in large manufacturing facilities and small, independent design shops. Individuals with a background in manufacturing technology can also parlay their skills into other related positions in the industry: CAD/CAM programmers, PLC programmers, and tool and die makers. According to the California Employment Development Department's Labor Market Information data for the San Jose-Sunnyvale-Santa Clara MSA, there are projected to be 131 combined annual openings for the period 2006-2016 for individuals with this set of skills. The strongest demand will be for machinists with 57 annual openings and a steady growth rate of 6.1%. There will also be demand for computer-controlled machine tool operators with 45 annual openings and growth rate of 18.5%. There will be a limited demand for tool and die makers with only 2 annual openings.

De Anza College's Manufacturing and CNC Technology Department Coordinator is a member of numerous regional consortia for the manufacturing technology industry. The program maintains strong affiliations with the Haas Technical Education Network and CNC Technology (Mastercam software manufacturer). Through the strength of these industry connections, graduates from De Anza's Manufacturing and CNC Technology certificate and A.S. degree programs have increased potential to secure employment or a promotion.

**6. Areas for new course and/or program development**

**7. Recommendations of Advisory Committee (retain or delete program)**