

# COMPUTER-INTEGRATED MANUFACTURING AND TECHNOLOGY

School of Mathematics, Computer Science and Engineering

**Dean:** Dr. Susan M. Cooper

**Academic Chair:** Seth Hochwald

**Faculty:** Dwight Collins

## CURRICULUM

The computer-integrated manufacturing and technology program is part of the college's curriculum in industrial technology. It emphasizes certain aspects of manufacturing, focusing particularly on the application of contemporary computer technology to the manufacturing process. The curriculum stresses contemporary theory and technology; immediate practical experience; adaptability to changing job requirements; and formal study of the various social, environmental, and ethical implications of manufacturing processes. In addition, the curriculum provides a strong grounding in general skills widely required within the manufacturing industry, including writing, analysis, speaking, and various business skills.

## MAJOR

Major elements of computer-aided manufacturing (CAM) include computer-integrated tool design, shop floor technology, and manufacturing production and control technology. Manufacturing technologists work closely with manufacturing engineers in the planning, implementation and evaluation of machines and materials.

Students may pursue the Associate in Science degree or Certificate of Achievement in computer-integrated manufacturing technology with an emphasis in computer-aided manufacturing. Upon completion of the program, students are fully trained and prepared to assume careers in industry within their area of specialization.

## CAREER OPTIONS

Examples of industry segments hiring computer-aided manufacturing technicians include the following:

- Aerospace Products Manufacturing
- Apparel Manufacturing
- Computer Product Manufacturing
- Instrument Manufacturing
- Machinery Manufacturing
- Motor Vehicle Manufacturing

## ASSOCIATE DEGREE

### • Associate in Science Degree in Computer-Aided Manufacturing

Students must complete a minimum of 60 units of credit, including the courses in the major ("Major Requirements") and general education requirements (pages 65-73), with an overall GPA of 2.0 or better. A minimum of 12 units must be completed at Irvine Valley College. See pages 61-64 for further information.

## CERTIFICATE

### • Certificate of Achievement in Computer-Aided Manufacturing

Students must complete all courses in the certificate program ("Major Requirements") with a grade of "C" or better. A minimum of 12 units in the certificate program must be completed at Irvine Valley College. See page 62 for further information.

## TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree at Irvine Valley College may not be the same as those required for completing the major at a transfer institution offering a baccalaureate degree. Students who plan to transfer to a four-year college or university should (1) refer to the University Studies major (page 224) and "Transfer Planning" (page 76); (2) consult the catalog of their prospective transfer institution (see the IVC Transfer Center for assistance); and (3) schedule an appointment with an IVC counselor to develop a plan of study before beginning their program. It may be helpful to meet with the department faculty at IVC.

## MAJOR REQUIREMENTS: COMPUTER-AIDED MANUFACTURING Associate in Science Degree or Certificate of Achievement

### Complete the following courses:

		Units
<b>DR 100</b>	Fundamentals of Drafting and Design	3
<b>ENGR 23</b>	Engineering Graphics and Descriptive Geometry	3
<b>ENGR 183</b>	Computer-Aided Design Techniques	3
<b>ENGT 140</b>	Computer-Aided Manufacturing (CAM) Materials and Processes	3
<b>MATH 124</b>	Trigonometry	3
<b>MGT 103</b>	Business English	3
	<b>TOTAL UNITS:</b>	<b>18</b>

### Recommended Electives:

CS 1