PROGRAMS

COMPUTER AIDED DESIGN AND DRAFTING

SCHOOL OF BUSINESS AND TECHNOLOGY

DEAN: Mink Stavenga, DBA, Office 470K, 619-482-6569
DEPARTMENT CHAIR: Marie Vicario-Fisher, M.S., M.P.H.

GENERAL DESCRIPTION

Designed to provide students with the skills and technical knowledge requested by employers using Computer Aided Design and Drafting (CADD) in a variety of disciplines. This program focuses on the development of CADD skills and problem-solving strategies in the development of two- and three-dimensional models. Additional engineering options allow students to acquire advanced CADD skills in areas of special interest.

The CADD technology associate in science degree prepares the student for various job opportunities in a wide variety of disciplines. There is an increasing demand for competent engineering technicians knowledgeable in the use and application of CADD software. Students planning to enroll in a four-year college engineering program will benefit greatly by developing CADD skills used in most engineering departments.

CAREER OPTIONS

Below is a sample of the career options available for the computer aided design major. Some require a certificate of achievement and most require an associate in science degree: mechanical, aeronautical, structural, and civil engineering. New areas of use can be found in animation, simulation, and theatrical departments. While drafting boards are still in use, a large number of companies have integrated drafting boards with monitors and computers, requiring that today's engineers, designers, and draftsmen possess both essential drafting and CADD competencies.

DEGREE/CERTIFICATE OPTIONS

<table>
<thead>
<tr>
<th>DEGREE/CERTIFICATE OPTIONS</th>
<th>MAJOR CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate in Science Degree: Career/Technical</td>
<td>A2571</td>
</tr>
<tr>
<td>Computer Aided Design and Drafting</td>
<td>A2572</td>
</tr>
<tr>
<td>Design Technology</td>
<td></td>
</tr>
<tr>
<td>Certificate of Achievement</td>
<td>A2576</td>
</tr>
<tr>
<td>Computer Aided Design and Drafting—Advanced</td>
<td>A2577</td>
</tr>
<tr>
<td>Design Technology</td>
<td></td>
</tr>
<tr>
<td>Certificate of Proficiency</td>
<td>02569</td>
</tr>
<tr>
<td>Computer Aided Design and Drafting—Basic</td>
<td></td>
</tr>
</tbody>
</table>

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

ASSOCIATE IN SCIENCE DEGREE

COMPUTER AIDED DESIGN AND DRAFTING

ASSOCIATE IN SCIENCE DEGREE

CAREER/TECHNICAL (MAJOR CODE: A2571)

Designed to provide students with the skills and technical knowledge requested by employers using CADD in a variety of departments. The program focuses on the development of CADD skills and problem solving strategies in the development of two- and three-dimensional models. Additional engineering options allow students to acquire advanced CADD skills in areas of special interest.

Program Student Learning Outcome Statement:

- Construct, modify and print existing drawings to meet industry standards.
- Use provided software to construct and analyze solid models.
- Use appropriate technical material to determine and correctly communicate drawing information.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 220</td>
<td>Introduction to CADD/CAM Systems</td>
<td>3</td>
</tr>
<tr>
<td>CAD 222</td>
<td>CAD Mechanical Design I</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 110</td>
<td>Engineering Design and Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CAD 223</td>
<td>CAD Detailing and Dimensioning</td>
<td>3</td>
</tr>
<tr>
<td>CAD 224</td>
<td>CAD Mechanical Design II</td>
<td>2.5</td>
</tr>
<tr>
<td>CAD 230</td>
<td>Introduction to Solidworks</td>
<td>2.5</td>
</tr>
<tr>
<td>MATH 104</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
</tbody>
</table>

Total units 20

Recommended Electives: CAD 272, 276.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 64.

ASSOCIATE IN SCIENCE DEGREE

CAREER/TECHNICAL (MAJOR CODE: A2572)

Designed to provide the student with a sound background in CADD and design elements related to the field of mechanical engineering. The program trains the student in use of CADD software and stresses the fundamentals of design and related topics. Design and presentation software are available to enrolled students. Additional engineering options allow students to acquire, develop, and enhance skills in areas of special interest.

DESIGN TECHNOLOGY
Some courses within this program may require additional coursework that must be completed prior to enrollment in these courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.

Program Student Learning Outcome Statement:
• Modify drawings through evaluation of written instructions.
• Use technical documentation analyze drawings and modify to meet industry required standards.

ENGR 101 Introduction to Engineering Careers 1
ENGR 110 Engineering Design and Graphics 3
ARCH 200 Introduction Computer Aided Design (3)
OR
CAD 220 Introduction to CADD/CAM Systems (3)
MATH 104 Trigonometry 3
ARCH 205 Advanced Architectural CAD (3)
OR
CAD 222 CAD Mechanical Design I (3)
Complete 6 units from electives 6

Total units 19

Electives: CAD 223, 224, 272, 276.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 64.

The program below is undergoing modification and the modification will be placed into an addendum upon Chancellor’s Office approval - see your counselor for further information and visit the college website under http://www.swccd.edu/catalog link for the latest addenda updates.

CERTIFICATES

COMPUTER AIDED DESIGN AND DRAFTING: BASIC

CERTIFICATE OF PROFICIENCY
CAREER/TECHNICAL (MAJOR CODE: 02569)

Program Student Learning Outcome Statement:
• Develop and organize drawings to meet industry mandated standards.
• Use CAD skills construct or modify provided drawings based on written and verbal communications.

CAD 220 Introduction to CADD/CAM Systems 3
CAD 222 CAD Mechanical Design I 3
CAD 223 CAD Detailing and Dimensioning 3
CAD 224 CAD Mechanical Design II 3
ENGR 110 Engineering Design and Graphics 3
MATH 104 Trigonometry 3

Total units 20.5

COMPUTER AIDED DESIGN AND DRAFTING: ADVANCED

CERTIFICATE OF ACHIEVEMENT
CAREER/TECHNICAL (MAJOR CODE: A2576)

Program Student Learning Outcome Statement:
• Organize and print different types of views used in mechanical design.
• Analyze drawings and modify to meet industry required standards.
• Use technical documents student will evaluate mechanical drawings for errors.

GAINFUL EMPLOYMENT:
The U.S. Department of Education requires colleges to disclose a variety of information for any financial aid eligible program that “prepares students for gainful employment in a recognized occupation.”

Students who complete this program will have acquired the necessary analytical tools to successfully secure gainful employment in the field of study.

For more information regarding the data provided for this program and what it means to you as a student, please feel free to visit our SWC Gainful Employment website at: www.swccd.edu/gainfulemployment.
PROGRAMS

DESIGN TECHNOLOGY

CERTIFICATE OF ACHIEVEMENT
CAREER/TECHNICAL (MAJOR CODE: A2577)

Program Student Learning Outcome Statement:
- Organize and print different types of views used in mechanical design.
- Evaluate multiple mechanical drawings for correct form and fit.
- Evaluate and analyze mechanical drawings for errors.

GAINFUL EMPLOYMENT:
The U.S. Department of Education requires colleges to disclose a variety of information for any financial aid eligible program that “prepares students for gainful employment in a recognized occupation.”

Students who complete this program will have acquired the necessary analytical tools to successfully secure gainful employment in the field of study.

For more information regarding the data provided for this program and what it means to you as a student, please feel free to visit our SWC Gainful Employment website at: www.swccd.edu/gainfulemployment.

ENGR 101 Introduction to Engineering Careers 1
ENGR 110 Engineering Design and Graphics 3
ARCH 200 Introduction to Computer Aided Design (3)
OR
CAD 220 Introduction to CADD/CAM Systems (3)
MATH 104 Trigonometry 3
ARCH 205 Advanced Architectural CAD (3)
OR
CAD 222 CAD Mechanical Design I (3)
Complete 6 units from electives 6

Total units 19
Electives: CAD 223, 224, 272, 276.

COMPUTER INFORMATION SYSTEMS

SCHOOL OF BUSINESS AND TECHNOLOGY

DEAN: Mink Stavenga, DBA, Office 470K, 619-482-6569
FACULTY: John J. Davis, B.A.; Julie Grimes, M.S.; Robert Lingvall, M.S.; Kathleen Canney López, B.A.; Thomas Luibel, B.S.; Gregory Mohler, M.A.; Rick Kovacic, M.S.
DEPARTMENT CHAIR: Thomas Luibel, B.S.

GENERAL DESCRIPTION
Computer information systems is the study of the history, theories, principles, processes, procedures, structures, designs, applications, programs, languages, and management of modern information systems and technology. This department explores computer skills, data entry operations, information manipulation, control and data structures, software capabilities, program development, database management, design processes, Web applications, operating systems, and system analysis.

CAREER OPTIONS
Following is a sample of the career options available for computer information systems majors. Most require an associate in science degree, some require a bachelor’s degree, and a few require a graduate-level degree: computer operator, data technician, systems analyst, computer maintenance technician, programmer, systems test engineer, software technician, documentation specialist, local area network (LAN) administrator, personal computer (PC) specialist, Web designer, database designer, and eCommerce technician and administrator positions available in allied professions of computer science, business, and industry.

DEGREE/CERTIFICATE OPTIONS

DEGREE/CERTIFICATE OPTIONS MAJOR CODE
Associate in Arts Degree: Transfer Preparation
Information Systems 01130

Associate in Science Degree: Career/Technical
CIS—Computer Programming With an Emphasis on Applications 02273

Some courses within this program may require additional coursework that must be completed prior to enrollment in these courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.