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## Associate in Engineering in SOFTWARE ENGINEERING

The curriculum in the Associate Degree in Engineering (AEng) in Software Engineering is designed for those who intend to launch a career in the testing, installation, and maintenance of computer software modules and systems. Coursework in the program is practice-oriented and prepares students to work in a variety of computer-intensive environments that involve engineering support: technical organizations, small or large businesses, manufacturing companies, and data-directed services. The breadth of training in hardware, software, troubleshooting equipment, and other computer tools will enable the graduate to work in a variety of roles in such environments as software technician, computer systems technician, data applications or computer technician, or as a test and integration assistant. The graduate of this curriculum will be a software engineering technician versed in mathematics, physics, computer science, software development, and business fundamentals.

### **The program objectives are the following:**

1. Graduates will have demonstrated knowledge and skills to pursue an engineering bachelor program.
2. Graduates will have demonstrated involvement in high technical roles.

### **Completion of this program should result in the following student outcomes:**

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to function on multidisciplinary teams.
3. An ability to communicate effectively.
4. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
5. A knowledge of contemporary issues.
6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

## **GENERAL EDUCATION (34 CRS)**

### **Area I: Communications (9)**

- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

### **Area II: Mathematics (11)**

- MATH 145 Introduction to Probability & Statistics (3)
- MATH 162 Calculus I (4)
- MATH 163 Calculus II (4)

### **Area III: Laboratory Science (8)**

- PHYS 215/L Engineering Physics I with lab (4)
- PHYS 216/L Engineering Physics II with Lab (4)

### **Area IV: Social/Behavioral Sciences (3)**

- ECON 201 Microeconomics (3)

### **Area V: Humanities and Fine Arts (3)**

- PHIL 220 Ethics (3)

### **Health, Physical Education & Recreation (1 cr)**

- Electives (1)

## **PROGRAM REQUIREMENTS (34 CRS)**

### **Business (3)**

BA Lower-Division Elective (3)

### **Computer Science (6)**

CS 201 Mathematical Foundations of Computer Science (3)

CS 241 Data Organization (3)

### **Electrical, Electronic, and Computer Engineering (21)**

EECE 105L Microcomputer Systems (4)

EECE 132 Computer Networks I (3)

EECE 152L Computer Programming I (4)

EECE 238/L Computer Logic Design (4)

EECE 231 Intermediate Programming I (3)

**Elective (3) Choose from: EECE or IT lower division courses**

**TOTAL CREDITS 65**

## **SUGGESTED SEQUENCE OF COURSES**

### **First Semester (14 crs)**

ENG 111 English Composition I (3)

MATH 162 Calculus I (4)

MATH 145 Introduction to Probability and Statistics (3)

ECON 201 Microeconomics (3)

HPER Elective (1)

### **Second Semester (19 crs)**

ENG 116 Technical Writing (3)

MATH 162 Calculus II (4)

PHYS 215/L Engineering Physics I with Lab (4)

EECE 105/L Microcomputer Systems I (4)

EECE 152/L Computer Programming I (4)

### **Third Semester (16 Crs)**

PHYS 216/L Engineering Physics II with Lab (4)

EECE 132 Computer Networks I (3)

EECE 231 Intermediate Programming (3)

CS 241 Data Organization (3)

CS 201 Math Foundations of CS (3)

### **Fourth Semester (16 Crs)**

SPCH 130 Public Speaking (3)

EECE 238/L Computer Logic Design (4)

PHIL 220 Ethics (3)

BS Elective (3)

EECE/IT/CS Elective in 2XX (3)