



## Bachelor of Engineering (BEng) SOFTWARE ENGINEERING

The curriculum of the BEng in Software Engineering is designed for those engineering students who intend to launch a career in the design, 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 analysis and software management – technical organizations, small or large businesses, product design or manufacturing companies, and data-directed services. The breadth of training in hardware, software, computer logic and laboratory tools will enable the graduate to work in a variety of roles in such environments as a software engineer, test and integration manager or technologist in computer applications. The graduate of this curriculum will be a software engineering specialist, but broadly versed in mathematics, physics, computer science, software development and business fundamentals.

Students are advised to not attempt upper division coursework (300 and 400-level classes unless you have earned a GPA of 2.50 or better in all IT, CS, and CT coursework taken at the 100 and 200-level. Failure to maintain an overall GPA of 2.00 or better in all coursework will be sufficient cause for being dropped from the program.

### GENERAL EDUCATION (53 crs)

	COMPLETED	Planned Timeline (By Semester)
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#### Communications (9 crs)

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|---|-------|-------|
| ENG 111 English Composition I (3)<br><i>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</i> | _____ | _____ |
| ENG 116 Technical Writing (3)<br><i>Pre-requisite: ENG 111</i>  | _____ | _____ |
| SPCH 130 Public Speaking (3)<br><i>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</i>      | _____ | _____ |

#### Mathematics (14 crs)

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|--|-------|-------|
| MATH 145 Introduction to Probability & Statistics (3)<br><i>Pre-requisite: MATH 130 or adequate score on the Course Placement Evaluation</i> | _____ | _____ |
| MATH 162 Calculus I (4)<br><i>Pre-requisites: MATH 150 and MATH 155 or MATH 160</i>  | _____ | _____ |
| MATH 163 Calculus II (4)<br><i>Pre-requisite: MATH 155 and MATH 162</i>  | _____ | _____ |
| MATH 312 Linear Analysis (3)<br><i>Pre-requisites: MATH 264 and 316</i>  | _____ | _____ |

#### Laboratory Science (12 crs)

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|---|-------|-------|
| CHEM 121/L General Chemistry I/L (4)<br><i>Pre-requisite: MATH 130, high school chemistry, or an ACT score of 19 or higher in Natural Science</i> | _____ | _____ |
| PHYS 215/L Engineering Physics I/L (4)<br><i>Pre-requisite: MATH 162</i>  | _____ | _____ |
| PHYS 216/L Engineering Physics II/L (4)<br><i>Pre-requisite: PHYS 161/L and MATH 162</i>  | _____ | _____ |

#### Social/Behavioral Sciences (9 crs)

***Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation***

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|-----------------------------|-------|-------|
| ECON 201 Microeconomics (3) | _____ | _____ |
| Elective (3) _____          | _____ | _____ |
| Elective (3) _____          | _____ | _____ |

#### Humanities and Fine Arts (9 crs)

***Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation***

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|---------------------|-------|-------|
| PHIL 220 Ethics (3) | _____ | _____ |
| Electives (3) _____ | _____ | _____ |
| Electives (3) _____ | _____ | _____ |

### HEALTH, PHYSICAL EDUCATION & RECREATION (1 crs)

Electives (1) \_\_\_\_\_

**MAJOR REQUIREMENTS (74 crs)**

**Computer Science (43 crs)**

- CS 132 Introduction to Programming (4)  
*Prerequisite: MATH 102N and CS 102*
- CS 201 Mathematical Foundations of Computer Science (3) (Fall)  
*Pre-requisite: CS 152*
- CS 238L Computer Logic Design (4)  
*Pre-requisite: CS 152*
- CS 241 Data Organization (3) (Fall)  
*Pre-requisite: CS 152L*
- CS 251 Intermediate Program (3) (Spring)  
*Pre-requisite: CS 152L*
- CS 341 Introduction to Computer Architecture and Organization (3) (Fall)  
*Pre-requisite: CS 238L and 241*
- CS 351 Design of Large Programs (3)  
*Pre-requisites: CS 241 and 251*
- CS 352 Software Development (3) (Fall)  
*Pre-requisite: CS 251*
- CS 361 Data Structures and Algorithms (3)  
*Pre-requisites: CS 251 and 341*
- CS 374 Real Time Computing (3)  
*Pre-requisites: CS 251 and 238L*
- CS 442 Introduction to Parallel Processing (3)  
*Pre-requisites: CS 251 and 341*
- CS 490 CS Capstone I (4)  
*Pre-requisite: senior standing*
- CS 491 CS Capstone II (4)  
*Pre-requisite: CS 490*

**Engineering and Information Technology (22 crs)**

- IT 105L Microcomputer Systems (4)  
*Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation*
- IT 210 IT Systems (3)  
*Pre-requisites: CS 152*
- IT 330 Networking (3)  
*Pre-requisites: IT 130*
- IT 342 Wireless and Mobile Comp (3)  
*Pre-requisites: IT 330 and 350*
- IT 350 Database Management (3)  
*Pre-requisite: CS 241L*
- IT 447 Routing and Switching (3)  
*Pre-requisite: IT 330*
- ME 160L Engineering Design I (3)  
*Pre-requisite: MATH 160*

**Business (9 crs)**

- BA 220 Introduction to Business (3)  
*Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation*
- BA 242 Business Information Systems (3)
- BA 435 Project Contracting and Supply Chain Management (3)  
*Pre-requisite: BA 434*

**TOTAL CREDITS 128**