

[ARCHIVED CATALOG]

## Computer Engineering, B.S.

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### Program Learning Outcomes and Educational Effectiveness Evaluation Plans for B.S. in Computer Engineering

Students pursuing the B.S. in Computer Engineering are required to:

- Earn an overall GPA of 2.500 for all required lower division major courses.
- Earn an overall GPA of 2.000 for all required major courses.
- Complete all courses in the major for a letter grade of “C-” or higher, except those where the default grading option is P/NP.
- Complete a minimum of 21 credits from upper division courses in the major.

Majors are required to enroll in [FFC 100B - First Year Foundations: Grand Challenges in Science and Engineering](#) to satisfy their General Education requirement.

### Grand Challenges Initiative (3 credits)

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- [SCI 150 - Grand Challenges in Science and Engineering I](#) 1 credit
- [SCI 200 - Grand Challenges in Science and Engineering II](#) 1 credit
- [SCI 250 - Grand Challenges in Science and Engineering III](#) 1 credit

### lower-division core requirements (39-40 credits)

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requirements (31 credits)

- [ENGR 101 - Foundations of Design and Fabrication](#) 3 credits
- [PHYS 101 - General Physics I](#) 3 credits
- [PHYS 101L - General Physics I Laboratory](#) 1 credit
- [PHYS 102 - General Physics II](#) 3 credits
- [PHYS 102L - General Physics II Laboratory](#) 1 credit
- [PHYS 201 - General Physics III](#) 3 credits
- [EENG 200 - Electronics and Circuits I](#) 3 credits

- [EENG 200L - Lab - Electronics and Circuits I](#) **1 credit**
- [MATH 215 - Introduction to Linear Algebra and Differential Equations](#) **3 credits**
- [CPSC 230 - Computer Science I](#) **3 credits**
- [CENG 231 - Systems Programming](#) **3 credits**
- [CENG 231L - Lab - Systems Programming](#) **1 credit**
- [MATH 250 - Discrete Mathematics I](#) **3 credits**

one of the following sequences (8-9 credits)

sequence 1

- [MATH 110 - Single Variable Calculus I](#) **3 credits**
- [MATH 111 - Single Variable Calculus II](#) **3 credits**
- [MATH 210 - Multivariable Calculus](#) **3 credits**

sequence 2

- [MATH 115 - Accelerated Calculus Part I: Differentiation and Integration](#) **4 credits**
- [MATH 116 - Accelerated Calculus Part II: Series, Differential Equations and Multivariable Calculus](#) **4 credits**

## colloquium requirement (4 credits)

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Students must complete four 1-credit sections of [CENG 298 - Computer Engineering Colloquium](#).

## upper-division requirements (24 credits)

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- [EENG 300 - Electronics and Circuits II](#) **3 credits**
- [EENG 300L - Lab - Electronics and Circuits II](#) **1 credit**
- [CENG 330 - Digital Logic Design I](#) **3 credits**
- [CENG 330L - Lab - Digital Logic Design I](#) **1 credit**
- [CPSC 350 - Data Structures and Algorithms](#) **3 credits**
- [CENG 351 - Computer Architecture I](#) **3 credits**
- [CENG 366 - Digital Logic Design II](#) **3 credits**
- [CENG 366L - Lab - Digital Logic Design II](#) **1 credit**
- [CPSC 380 - Operating Systems](#) **3 credits**
- [CENG 465 - Integrated Circuit Design I](#) **3 credits**

## electives (9 credits)

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Students, in consultation with and approval of the engineering advising committee, will design individual elective programs to suit their academic goals. Electives may be satisfied by any of the following courses.

- [CPSC 349 - Human Factors](#) **3 credits**
- [CENG 350 - Embedded Systems](#) **3 credits**
- [CENG 352 - Computer Architecture II](#) **3 credits**
- [CENG 353 - Wireless Communication](#) **3 credits**
- [CPSC 353 - Data Communications and Computer Networks](#) **3 credits**
- [ISP 363 - Cybersecurity 1](#) **3 credits**
- [CENG 370 - Topics in Computer Engineering](#) **3 credits**
- [CENG 380 - Real-Time Operating Systems](#) **3 credits**
- [CENG 381 - Modeling and Simulation](#) **3 credits**
- [CENG 382 - Digital Signal Processing](#) **3 credits**
- [CENG 390 - Robotics](#) **3 credits**
- [CPSC 453 - Network Implementation and Security](#) **3 credits**
- [CENG 466 - Integrated Circuit Design II](#) **3 credits**

**total credits 79-80**

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