Computer Engineering, B.S.

Program Description

Computer Engineering (CpE) is a dynamic professional field that blends the fields of hardware engineering with software development. Computer engineers are proficient in electrical and electronic engineering, software design, and hardware-software integration. The goal of a computer engineer is to promote the advancement of digital technology, computer networking, and embedded computer systems. Special focus will be placed in this program upon embedded systems design with the integration of sensors, actuators, and communication technologies.

 This program is a part of the Southern Polytechnic College of Engineering and Engineering Technology.

Admission, Enrollment, and Graduation Policies

Admission Requirements

This program does not have specific admission requirements and only admission to Kennesaw State University is required. For more information, please visit the Admissions section of the Catalog.

Enrollment Requirements

Upper division engineering courses require Engineering Standing.

Graduation Requirements

Each student is expected to meet the requirements outlined in Academic Policies 5.0 PROGRAM REQUIREMENTS & GRADUATION.

Program Course Requirements

Core IMPACTS Curriculum (42 Credit Hours)

General Education Core IMPACTS Curriculum

Core IMPACTS Curriculum Requirements Specific to This Major

Engineering Majors: Must take MATH 1190 in Mathematics & Quantitative Skills, MATH 2202 in Applied Math, and PHYS 2211/2211L and PHYS 2212/2212L in Natural Sciences.

Note: Students cannot take both PHYS 1111/L and PHYS 2211/L nor PHYS 1112/L and PHYS 2212/L.

Core Field of Study (18 Credit Hours)

Students must earn a grade of "C" or better in these courses.

- MATH 2306: Ordinary Differential Equations
- STAT 2332: Probability and Data Analysis
- PHYS 2212: Principles of Physics II
- PHYS 2212L: Principles of Physics Laboratory II
- ENGR 1000: Introduction to Engineering
- CPE 1001L: Introduction to Computer Engineering Lab
- CPE 2200: Hardware Programming
  One (1) credit hour carried over from Mathematics & Quantitative Skills.
  Two (2) credit hours carried over from Technology, Mathematics, & Sciences.

Major Requirements (58 Credit Hours)

Students must earn a grade of "C" or better in these courses.

Lower-Division Required Courses (15 Credit Hours)

- EE 2301: Circuit Analysis I
- EE 2501: Digital Logic Design
- MATH 2345: Discrete Mathematics
- CSE 1321: Programming and Problem Solving I
- CSE 1321L: Programming and Problem Solving I Laboratory

Upper-Division Required Courses (43 Credit Hours)

Engineering Standing is required before taking these courses.

- CPE 3000: Computer Organization and Interfacing
- CPE 3020: VHDL Design with FPGAs
- CPE 3030: Advanced Embedded Design
- CPE 4010: Sensors, Actuators and Integration
- CPE 4020: Device Networks
- CPE 4040: Data Collection and Analysis
- CPE 4800: Senior Project Proposal
- CPE 4850: Senior Project Design
- EE 3401: Engineering Electronics
- EE 4201: Control Systems
- ENGR 3325: Engineering Economic Analysis

- CPE 3500: Embedded Digital Signal Processing

Major Electives (9 Credit Hours)

Students must earn a grade of "C" or better in these courses. Select 9 credit hours of 3000-4000 level coursework from the following prefixes: CPE, EE, MTRE, SWE, CS, or ME. Engineering Standing is required before taking these courses.

Program Total (127 Credit Hours)