

Restricted Area Electives

The following is a list of approved Restricted Area Electives for EE and CE students. The electives are grouped by suggested areas of study within Electric and Computer Engineering. However, a student is free to choose any elective listed that does not duplicate other program requirements. Special topics courses such as ECE 491 and ECE 493 may also be approved by petition.

AREA 1: SOFTWARE AND EMBEDDED SYSTEMS

AEM 249 Algorithm Development Implementation
CS 101 Computer Science II
CS 200 Software Design and Engineering
CS 201 Data Structures and Algorithms
CS 300 Operating Systems
CS 301 Database Management Systems
CS 403 Programming Languages
CS 407 Software Interface Design
CS 415 Software Design and Development
CS 434 Compiler Construction
CS 435 Computer Graphics
CS 451 Data Science
CS 460 Introduction to Autonomous Robotics
CS 465 Artificial Intelligence
CS 470 Computer Algorithms
CS 480 Computer Simulations
ECE 408 Communications
ECE 409 Communications Lab
ECE 480 Digital Systems Design
ECE 481 Digital Systems Design Lab
ECE 482 Computer Vision & Digital Image Processing
ECE 483 Introduction to Machine Learning
ECE 484 Computer Architecture
ECE 485 Programmable Logic Controllers
ECE 486 Embedded Systems
ECE 487 Embedded Systems Lab
ECE 488 Computational Intelligence
ME 456 Mechatronics

AREA 2: ELECTROMECHANICAL SYSTEMS

ECE 451 Power Electronics
ECE 452 Power Electronics Lab
ECE 453 Power Systems
ECE 454 Power Systems Lab
ECE 455 Electromechanical Systems
ECE 475 Control Systems Analysis
ECE 476 Control Systems Lab
ECE 479 Digital Control Systems

AREA 3: MATERIALS AND DEVICES

ECE 430 Solid State Devices
ECE 438 Integrated Circuit Fabrication Principles
ECE 439 Thin Film Technology
ECE 440 Electromagnetic Waves
ECE 461 Quantum Well Electronics and Devices
ECE 462 Semiconductor Optoelectronics
ECE 463 Magnetic Materials and Devices
ECE 466 Fundamentals of Nanotechnology
MTE 271 Engineering Materials: Structure and Properties

AREA 4: GENERAL COURSES

Aerospace Engineering and Mechanics – AEM 201, AEM 349

Mechanical Engineering – ME 215, ME 305, ME 372, ME 349

GES – GES 400

Chemistry – CH 341

Mathematics (MATH) – All courses above MATH 238 not duplicating other courses required in the curriculum. Exceptions to this include all courses with math education as the primary emphasis (e.g. MATH 403, 404, 405, 409, 470, and 486).

Physics (PH) – All courses 300 and above not duplicating other courses required in the curriculum.
