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 202 Web Foundations
CS 300 Operating Systems
CS 301 Database Management Systems
CS 403 Programming Languages
CS 407 Software Interface Design
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
ME 454 Automotive Electrical and Electronic Systems
Areas 3 & 4: Materials and Devices; Electromagnetics

- CH 341 Physical Chemistry
- 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
- MTE 450 Plasma Processing of Thin Films
- MTE 481 Analytical Methods for Materials

Area 5: General Courses

- Aerospace Engineering and Mechanics – AEM 201, AEM 349
- Mechanical Engineering – ME 215, ME 305, ME 349, ME 372
- GES – GES 400

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).

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

Approved 8/16/22