Higher Level EECE Electives

Students must take 5 classes (20 credits) of Higher Level EECE Electives chosen from the following list. The student's chosen concentration requires 3 specific Higher Level EECE Electives to be taken, leaving 2 for the student to choose.

EECE 321 ELECTRONIC SYSTEMS (4)
EECE 333 DIGITAL SYSTEM DESIGN (4)
EECE 361 SIGNAL PROPAGATION (4)
EECE 362 WIRELESS NETWORKING AND APPLIC. (4)
EECE 372 ELECT POWER & ELECTROMECH DEVICES (4)
EECE 374 ENERGY PROCESSING (4)
EECE 378 POWER SYS ANALYSIS & THE SMART GRID (4)
EECE 383 MACHINE LEARNING FOR ENGINEERS (4)
EECE 384 AI AND REINFORCEMENT LEARNING (4)
EECE 385 CYBER-PHYSICAL SYSTEMS (4)
EECE 433 DIG. SIGNAL PROCESSSING (4)
EECE 460 DIGITAL COMMUNICATIONS (4)

Approved Technical Electives

The following courses are pre-approved to be used toward the degree requirement of 15 credits[†] of technical electives. At least 3 of the 15 credits must be from mathematics or basic science courses indicated below with an asterisk (*). Other courses in supporting disciplines that are not on this list may fulfill the technical elective requirement if the student obtains approval from the EECE Program in consultation with their advisor.

EECE 300- and 400-level Higher Level EECE Electives[§]
EECE 400 INDEPENDENT STUDY
EECE 495 DIRECTED RESEARCH IN EECE

BIOL 204, 205, 206 INTRODUCTORY SERIES (5)
BIOL 348 HUMAN ANATOMY AND PHYSIOLOGY (5)
*CHEM 161, 162, or 163 GENERAL CHEMISTRY I, II, III (5,5,5)
CSCI 145 COMP. PROG. & LINEAR DATA STRUCT. (4)
CSCI 247 COMPUTER SYSTEMS I (5)
CSCI 241 DATA STRUCTURES (4)
CSCI 300- and CSCI 400-level
ENGR 170 INTRO TO MATERIALS SCIENCE & ENGR (4)
ENGR 214 STATICS (4)
ENGR 225 MECHANICS OF MATERIALS (4)
ENRG 320 SCIENCE OF ENERGY RESOURCES (4)
ENRG 360 ENERGY EFFICIENT DESIGN (4)
ENRG/ESCI 380 ENERGY AND ENVIRONMENT (4)
ENRG/ECON 386 ECONOMICS OF ELEC. MARKETS (4)
ENRG 420 ENERGY SCIENCE II (3)
ENRG 464 SUSTAINABLE BUILDING ANALYSIS (4)
ENRG 480 APPLICATIONS ENERGY PRODUCTION (4)
ENRG 486 ELECTRIC UTILITY PLANNING (4)
*MATH 225 MULTIVARIABLE CALC. AND GEOM. II (4)
*MATH 226 LIMITS AND INFINITE SERIES (4)
*MATH 302 INTRO TO PROOFS VIA NUMBER THEORY (4)
*MATH 304 LINEAR ALGEBRA (4)
*MATH 307 MATHEMATICAL COMPUTING (4)
*MATH 309 INTRO TO PROOF IN DISCRETE MATH (4)
MATH 312 PROOFS IN ELEMENTARY ANALYSIS (4)
*MATH 342 STATISTICAL METHODS I (4)
MATH 343 STATISTICAL METHODS II (4)
MATH 410 MATHEMATICAL MODELING (4)
MATH 421 METHODS OF MATHEMATICAL ANALYSIS I (4)
MATH 422 METHODS OF MATHEMATICAL ANALYSIS II (4)
MATH 424 TOPICS IN ANALYSIS (4)
MATH 430 FOURIER SERIES/DIFFERENTIAL EQUATIONS (4)
MATH 431 ANALYSIS OF PARTIAL DIFFERENTIAL EQS (4)
MATH 432 SYSTEM OF DIFFERENTIAL EQUATIONS (4)
MATH 438 INTRODUCTION TO COMPLEX VARIABLES (4)
MATH 441 PROBABLITY (4)
MATH 442 MATHEMATICAL STATISTICS (4)
MATH 443 LINEAR STATISTICAL MODELS (4)
MATH 445 COMPUTATIONAL STATISTICS (4)
MATH 446 NONPARAMETRIC STATISTICAL INFERENCE (4)
MATH 447 MULTIVARIATE STATISTICS (4)
MATH 451 NUMBER THEORY (4)
MATH 456 APPLIED TIME SERIES ANALYSIS (4)
MATH 457 BAYESIAN STATISTICS (4)
MATH 458 STOCHASTIC PROCESSES (4)
MATH 473 NUMERICAL LINEAR ALGEBRA (4)
M/CS 335/375 LINEAR OPTIMIZATION (4)
M/CS 435/475 NONLINEAR OPTIMIZATION (4)
MFGE 341 QUALITY ASSURANCE (4)
MFGE 342 DESIGN OF EXPERIMENTS (4)
MFGE 453 INDUSTRIAL ROBOTICS (4)
OPS 360 OPERATIONS MANAGEMENT (4)
OPS 460 DESIGNING AND IMPROVING OPERATIONS (4)
OPS 461 PROJECT MANAGEMENT (4)
OPS 463 ENTERPRISE RESOURCE PLANNING SYS (4)
*PHYS 220 PHYSICS W/ CALCULUS IV (4)
PHYS 224 MODERN PHYSICS I (4)
PHYS 225 MODERN PHYSICS II (3)
*PHYS 345 QUANTUM COMPUTING (3)
PHYS 339 OPTICS (3)
PHYS 350 ENGINEERING THERMODYMAMICS (3)
*PHYS 365 MATHEMATICAL PHYSICS (4)
PHYS 368 ELECTROMAGNETISM I (3)
PHYS 369 ELECTROMAGNETISM II (3)
PHYS 475 PHYSICS OF SOLIDS AND MATERIALS I (3)
PHYS 476 PHYSICS OF SOLIDS AND MATERIALS II (3)
PHYS 486 COMPUTATIONAL PHYSICS (3)

[†] Students admitted to EECE prior to 2024 must only take 10 credits of technical electives, plus CHEM 161 (5 credits), and do not need to take an additional mathematics or basic science course.

[§] Courses may not be double counted to simultaneously fulfill the Higher Level EECE Elective and the technical elective requirements. Only those Higher Level EECE Electives taken beyond the required 20 credits will count as technical electives.

Last updated 14-Dec-2023.