Courses not on this list can only be taken with the approval of the student’s academic advisor and department chair.

**Electrical Engineering**
- EGRE 303 Electronic Devices (CpE majors only)
- EGRE 307 Integrated Circuits
- EGRE 309 Electromagnetic Fields (CpE majors only)
- EGRE 310 Microwave and Photonic Engineering
- EGRE 336 Introduction to Communication Systems (CpE majors only)
- EGRE 365 Digital Systems (EE majors only)
- EGRE 426 Computer Organization and Design (EE majors only)
- EGRE 427 Advanced Digital Design (EE majors only)
- EGRE 435 Microscale and Nanoscale Fabrication
- EGRE 436 Advanced Microscale and Nanoscale Fabrication
- EGRE 444 Communication Systems
- EGRE 455 Control Systems Design
- EGRE 520 Electron Theory of Solids I
- EGRE 521 Advanced Semiconductor Devices
- EGRE 522 Micro-Electro-Mechanical Systems (MEMS)
- EGRE 525 Fundamentals of Photonics Engineering
- EGRE 526/CMSC 506 Computer Networks and Communications
- EGRE 531 Multicore and Multithreaded Programming
- EGRE 533 VLSI Design
- EGRE 535 Digital Signal Processing (Not with EGRB 408)
- EGRE 540 Electromagnetics and Passive RF Components
- EGRE 555 Dynamics and Multivariable Control I
- EGRM 410 Mechatronics
- ENGR 315 Process and Systems Dynamics
- ENGR 334 Introduction to Microfabrication
- ENGR 410 Review of Internship (Completion of internship required)
- ENGR 427 Robotics
- ENGR 454 Automatic Controls

**Computer Science**
- CMSC 302 Introduction to Discrete Structures
- CMSC 303 Introduction to the Theory of Computation
- CMSC 312 Introduction to Operating Systems (EE majors only)
- CMSC 355 Program Design and Implementation Practicum (EE majors only)
- CMSC 401 Algorithm Analysis with Advanced Data Structures
- CMSC 403 Programming Languages
- CMSC 404 Compiler Construction
- CMSC 420 Software Engineering Practicum (EE majors only, not with CMSC 519)
- CMSC 501 Advanced Algorithms
- CMSC 502 Parallel Programming
- CMSC 508 Data Base Theory
- CMSC 509 Artificial Intelligence
- CMSC 511 Computer Graphics
- CMSC 519 Software Engineering: Specification and Design (EE majors only, not with CMSC 420)
- CMSC 525 Introduction to Software Analysis, Testing and Verification
- CMSC 526 Theory of Programming Languages

**Mathematical Sciences**
- MATH 305 Elementary Number Theory
- MATH 307 Multivariate Calculus (CpE majors only)
- MATH 310 Linear Algebra
- MATH 327 Mathematical Modeling
- MATH 351 Applied Abstract Algebra
- MATH 407 Advanced Calculus
- MATH 501 Introduction to Abstract Algebra
- MATH 504 Algebraic Structures and Functions
- MATH 505 Modern Geometry
- MATH 507 Bridge to Modern Analysis
- MATH 508 Analysis II
- MATH 509-510 General Topology I-II
- MATH 511 Applied Linear Algebra
- MATH 512 Complex Analysis for Applications
- MATH 515 Numerical Analysis I
- MATH 516 Numerical Analysis II
- MATH 517-518 Methods of Applied Mathematics
- MATH 520 Game Theory and Linear Programming
- MATH 521 Introduction to Algebraic Number Theory
- MATH 525 Introduction to Combinatorial Mathematics
- MATH 527 Deterministic Operations Research
- MATH 528 Stochastic Operations Research
- MATH 532 Ordinary Differential Equations I
- MATH 533 Partial Differential Equations I
- MATH 534 Applied Discrete Dynamical Systems
- STAT 503 Introduction to Stochastic Processes
- STAT 513-514/BIOS 513-514 Mathematical Statistics I-II
- STAT 523/BIOS 523 Nonparametric Statistical Methods
- STAT 543/BIOS 543 Statistical Methods I
- STAT 544/BIOS 544 Statistical Methods II
- STAT 546 Linear Models

**Biomedical Engineering**
- EGRB 307 Biomedical Instrumentation
- EGRB 310 Biomechanics
- EGRB 403 Tissue Engineering
- EGRB 405 Finite Element Analysis in Solid Mechanics
- EGRB 406 Artificial Organs
- EGRB 407 Physical Principles of Medical Imaging
- EGRB 408 Advanced Biomedical Signal Processing (Not with EGRE 535)
- EGRB 421 Human Factors Engineering
- EGRB 427 Biomaterials (Not with EGRM 436)
- EGRB 507 Biomedical Electronics and Instrumentation

**Chemical and Life Science Engineering**
- CLSE 320 Instrumentation Laboratory
- CLSE 325 Bioengineering

**Mechanical Engineering**
- EGRM 300 Mechanical Systems Design
EGRM 303 Thermal System Design
EGRM 308 Automatic Controls
EGRM 309 Material Science for Engineers
EGRM 311 Solid Mechanics Lab
EGRM 312 Thermal Sciences Lab
EGRM 321 Numerical Methods
EGRM 420 CAE Design
EGRM 421 CAE Analysis
EGRM 425 Introduction to Manufacturing Systems
EGRM 426 Manufacturing Processes
EGRM 428 Polymer Processing
EGRM 436 Engineering Materials (Not with EGRB 427)
EGRM 437 Principles of Polymer Engineering
EGRM 510 Solid Mechanics and Materials Behavior
EGRM 512 Engineering Mathematics
EGRM 515 Vibrations
EGRM 525 Feedback Control
EGRM 545 Energy Conversion Systems
EGRM 551 Experimental Methods for Engineers
EGRM 561 Advanced Fluid Mechanics
EGRM 566 Advanced Computer-aided Design and Manufacturing
EGRM 568 Robot Manipulators
EGRM 573 Engineering Acoustics

**Nuclear Engineering**
EGRN 310 Fundamentals of Nuclear Engineering
EGRN 320 Reactor Design and Systems
EGRN 331 Nuclear Instrumentation and Measurements
EGRN 420 Nuclear Power Plants
EGRN 450 Nuclear Reactor Control and Dynamics

**Physics**
PHYS 301 Classical Mechanics I
PHYS 302 Classical Mechanics II
PHYS 307/MHIS 307 The Physics of Sound and Music
PHYS 315/ENVS 315 Energy and the Environment
PHYS 320 Modern Physics
PHYZ 320 Modern Physics Laboratory
PHYS 340 Statistical Mechanics and Thermodynamics
PHYS 380 Quantum Physics I
PHYS 420 Quantum Physics II
PHYS 422 Optics
PHYS 440 Introduction to Condensed Matter Physics
PHYS 550 Techniques in Material Research
PHYS 571 Theoretical Mechanics
PHYS 573 Analytical Methods in Physics
PHYS 576 Electromagnetic Theory
PHYS 580 Quantum Mechanics
NANO 570 Nanoscale Physics
NANO 571 Nanoscale Chemistry