

Approved electives outside the Mathematics Department for the Applied Mathematics Major

Bioengineering

BIOEN 5001: Biophysics

BIOEN 5101: Engineering Principles in Bioinstrumentation

BIOEN 5201: Biomechanics

Chemical Engineering

CH EN 3353: Fluid Mechanics

CH EN 3453: Heat Transfer

CH EN 4253: Process Design

CH EN 5203: State Space Methods

Computer Science

CS 3100: Models of Computation

CS 4150: Algorithms

CS 5150: Advanced Algorithms

CS 5160: Computational Geometry

CS 5310: Robotics

CS 5320: Computer Vision

CS 5600: Introduction to Computer Graphics

CS 5605: Honors Introduction to Computer Graphics

CS 5610: Interactive Computer Graphics

CS 5630: Scientific Visualization

Electrical and Computer Engineering

ECE 3300: Fundamentals of Electromagnetics and Transmission Lines

ECE 3500: Fundamentals of Signals and Systems

ECE 3510: Introduction to Feedback Systems

ECE 3740: Introduction to Quantum Theory and Relativity

ECE 5330: Introduction to Microwave Tubes and Electron Devices

ECE 5340: Numerical Techniques in Electromagnetics

ECE 5510: Random Processes

ECE 5520: Digital Communication Systems

ECE 5530: Digital Signal Processing

ECE 5550: Survey of Function Approximation Methods

ECE 5570: Control of Electric Motors

Geology and Geophysics

GEO 5060: Global Geophysics

GEO 5210: Seismology I: Tectonophysics and Elastic Waves

GEO 5220: Seismology II: Exploration and Engineering Seismology

GEO 5230: Physical Fields I: Gravity, Magnetism, and Thermal Physics

GEO 5240: Physical Fields II: Electromagnetic Methods

GEO 5250: Inversion Theory and Applications

GEO 5310: Heat and Fluids

GEO 5320: Signal and Image Processing in the Geosciences

GEO 5330: Earthquake Seismology and Hazard Assessment

GEO 5360: Fluid Dynamics of Earth Materials

GEO 5390: Solute Transport and Subsurface Remediation

Materials Science and Engineering

MSE 3061: Transport Phenomena in Materials Science and Engineering

Mechanical Engineering

ME EN 5200: Classical Control Systems

ME EN 5210: State Space Methods

ME EN 5300: Advanced Strength of Materials

ME EN 5400: Vibrations

ME EN 5410: Intermediate Dynamics

ME EN 5500: Engineering Elasticity

ME EN 5510: Introduction to Finite Elements

ME EN 5600: Intermediate Thermodynamics

ME EN 5610: Modern Physics in Engineering

ME EN 5700: Intermediate Fluid Dynamics

ME EN 5710: Aerodynamics

ME EN 5720: Computational Fluid Dynamics

ME EN 5810: Thermal Systems Design

Metallurgical Engineering

MET E 5610: Proton Exchange Membrane Fuel Cells

MET E 5670: Mineral Processing I

MET E 5680: Mineral Processing II

MET E 5700: Hydrometallurgy

MET E 5710: High-Temperature Chemical Processing

MET E 5750: Rate Processes

MET E 5760: Process Synthesis, Design, and Economics

Mining Engineering

MG EN 5050: Mine Ventilation and Air Conditioning

MG EN 5060: Heat Energy Systems

MG EN 5150: Mechanics of Materials

MG EN 5160: Rock Mechanics Applications

MG EN 5290: Introduction to Finite Element and other Numerical Models in Geomechanics

Physics

PHYS 3740: Introduction to Quantum Theory and Relativity

PHYS 3760: Principles of Thermodynamics and Statistical Mechanics

PHYS 4410: Classical Physics I (Honors)

PHYS 4420: Classical Physics II (Honors)

PHYS 5010: Theoretical Classical Mechanics and Quantum Mechanics

PHYS 5020: Theoretical Electricity and Magnetism and Statistical Physics

PHYS 5110: Introduction to Nuclear and Particle Physics

PHYS 5450: Introduction to Quantum Mechanics (Honors)

PHYS 5460: Quantum Mechanics and Statistical Mechanics (Honors)

PHYS 5510: Solid-State Physics I (Honors)

PHYS 5520: Solid-State Physics II (Honors)

PHYS 5530: Introduction to Disordered Solids (Honors)

PHYS 5580: Extragalactic Astronomy and Cosmology (Honors)