

**DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**  
**APPROVED LISTING OF MATH/SCIENCE/TECHNICAL ELECTIVES**  
**Spring 2017**

**NOTE:** Electives are governed by the approved list in effect at the time a course is taken. Students should check the current list before enrolling in a course to confirm that the course is an approved elective.

ABET requires a minimum of 32 hours of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences.

ECE technical electives are defined as any course in Engineering (including ES courses), Computer Science, or any Math, Physics, or Stat courses on this list.

**AGROECOLOGY / SOIL SCIENCE**

- AECL 1000 Agroecology (4)
- AECL 3030 Ecological Web: Ecology of Plant Protection (3)
- SOIL 4100 Soil Physics (3)

**ASTRONOMY**

- ASTR 1050 Survey of Astronomy (4)
- ASTR 2310 General Astronomy I (4)
- ASTR 2320 General Astronomy II (4)

**ATMOSPHERIC SCIENCE**

- ATSC 2000 Introduction to Meteorology (4)
- ATSC 2100 Global Warming (3)
- ATSC 3032 Weather Analysis and Forecasting (3)
- ATSC 4001 Modeling the Earth System (4)
- ATSC 4010 Atmospheric Processes I (3)
- ATSC 4031 Atmospheric Dynamics (3)
- ATSC 4033 Atmospheric Remote Sensing (3)
- ATSC 4035 Atmospheric Processes II (3)
- ATSC 4320 The Ocean Environment (3)
- ATSC 4400 The Physical Basis of Climate (3)
- ATSC 4410 Introduction to Micrometeorology (3)

**BOTANY**

- BOT 3000 Plant Ecophysiology/Plant Form and Function (4)
- BOT 3100 Plants and Civilization (3)

**CHEMISTRY**

- CHEM 1030 General Chemistry II (4)
- CHEM 1060 Advanced General Chemistry II (4)
- CHEM 2300 Introductory Organic Chemistry (4)

Plus all Chemistry courses that have CHEM 1020, 1030, 1050, or 1060 as a prerequisite

**GEOLOGY**

- GEOL 1100 Physical Geology (4)
- GEOL 1110 Physical Geology for Engineers (4)
- GEOL 2000 Geochemical Cycles and the Earth Systems (4)
- GEOL 2010 Mineralogy (3)
- GEOL 2020 Introduction to Petrology (2)
- GEOL 2050 Principles of Paleontology (3)
- GEOL 2070 Intro to Oceanography (4)
- GEOL 2080 General Field Geology (3)
- GEOL 2100 Stratigraphy and Sedimentation (4)
- GEOL 2150 Geomorphology (4)

Plus all Geology courses that have GEOL 1100 or 2000 as a prerequisite

## **LIFE SCIENCES (BIOLOGY)**

- LIFE 1010 General Biology (4)
- LIFE 2002 Global Ecology (3)
- LIFE 2022 Animal Biology (4)
- LIFE 2023 Biology of Plants and Fungi (4)
- LIFE 2050 Biology of Aging and Human Development (3)

Plus all Life Sciences courses that have LIFE 1010 as a prerequisite

## **MATH**

- MATH 2250 Linear Algebra (3)
- MATH 2300 Discrete Structures (3)
- MATH 3205 Analysis I: Elementary Real Analysis (3)
- MATH 3310 Applied Differential Equations II (3)
- MATH 3340 Introduction to Scientific Computing (3)
- MATH 3500 Algebra I: Introduction to Rings and Proofs (3)
- MATH 3700 Combinatorics (3)
- MATH 4200 Analysis 2: Advanced Analysis (3)
- MATH 4205 Analysis 3: Undergraduate Topics in Analysis (3)
- MATH 4230 Introduction to Complex Analysis (3)
- MATH 4230 Introduction to Complex Analysis (3)
- MATH 4255 Mathematical Theory of Probability (3)
- MATH 4265 Introduction to the Theory of Statistics (3)
- MATH 4340 Numerical Methods for Ordinary and Partial Differential Equations (3)
- MATH 4420 Advanced Logic (3)
- MATH 4500 Matrix Theory (3)
- MATH 4510 Algebra II: Introduction to Group Theory
- MATH 4520 Algebra III: Topics in Abstract Algebra
- MATH 4550 Theory of Numbers (3)
- MATH 4600 Foundations of Geometry (3)

## **MICROBIOLOGY / MOLECULAR BIOLOGY**

- MICR 2021 General Microbiology (4)
- MICR 2220 Pathogenic Microbiology (4)
- MICR/MOLB 2240 Medical Microbiology (5)

Plus all Micro/Molecular Biology courses that have MICR/MOLB 2021 as a prerequisite

## **PHYSICS**

- PHYS 2250 Thermodynamic Systems in Energy Science
- PHYS 2310 Physics III: Wave and Optics (4)
- PHYS 2320 Physics IV: Modern Physics (3)
- PHYS 4340 Semiconductor Materials and Devices (3)

Plus all Physics courses that have PHYS 1210 or 1310 as a prerequisite

## **STATISTICS**

- STAT 4220 Basic Engineering Statistics (3)
- STAT 4255 Mathematical Theory of Probability (3)
- STAT 4265 Introduction to the Theory of Statistics (3)

## **ZOOLOGY**

- ZOO 2040 Human Anatomy (and Human Anatomy Lab ZOO 2041) (3 + 1)
- ZOO 2450 Principles of Fish and Wildlife Management (3)

Plus all Zoology courses that have LIFE 1010 as a prerequisite