

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
APPROVED LISTING OF MATH/SCIENCE ELECTIVES
Spring 2020

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.

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)

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| 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

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| 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) |
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| 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

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| 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

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| 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 PHYS 1310 or PHYS 1220 as a prerequisite

STATISTICS

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

ZOOLOGY

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| 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