MATH/SCIENCE ELECTIVES FOR ELEC/WIRE MAJORS

The intent of the math/science elective is to allow you to choose a class that you find interesting or useful, while partially satisfying the ABET requirement of one year of mathematics and basic science. The following guidelines are provided to assist you with your selection.

The three-credit math/science elective must be satisfied from the following list of COSAM courses in Biological Sciences, Chemistry, Discrete and Statistical Sciences, Geology, Mathematics, and Physics. (This list takes into account prerequisite courses that would normally be taken in the ELEC/WIRE curricula.)

**Biology:**
- BIOL 1020/1021 – Principles of Biology
- BIOL 1027 – Honors Biology

**Chemistry** (CHEM 1030/1031 required for ELEC/WIRE)
- CHEM 1040/1041 – Fund. of Chemistry II
- CHEM 1127/1128 – Honors General Chemistry II

**Geology**
- GEOL 1100/1101 – Physical Geology
- GEOL 3150 – Engineering Geology

**Physics** (Curriculum requires PHYS 1600/1601, 1610/1611)
- PHYS 1150/1151 – Astronomy
- PHYS 2100 – Intermediate Mechanics
- PHYS 2200 – Introductory Quantum Physics and Relativity
- PHYS 3100 – Intermediate Electricity and Magnetism
- PHYS 3500/3501 – Physics of the World Around Us

**Statistics**
- STAT 3010 – Statistics for Engineers and Scientists
- STAT 3600 – Probability and Statistics I
- STAT/MATH 5670 - Probability and Stochastic Processes I
- STAT/MATH 5690 - Chaotic and Random Phenomena

**Mathematics:** See reverse side for list
Mathematics (Curriculum requires MATH 1600,1610,2630,2650,2660)
MATH 3100 – Introduction to Advanced Math
MATH 3710 – Discrete Mathematics
MATH 5000 – Mathematical Modeling: Continuous
MATH 5010 – Vector Calculus
MATH 5030 – Complex Variables with Applications I
MATH 5050 – Matrix Theory and Applications
MATH 5060 – Elementary Partial Differential Equations
MATH 5120 – Information Theory
MATH 5130 – Calculus of Variation
MATH 5140 – Data Compression
MATH 5150 – Algebraic Coding Theory
MATH 5160 – Introduction to Applied Mathematics
MATH 5180 - Cryptography
MATH 5190 – Introduction to Approximation Theory
MATH 5280 – Systems of Differential Equations and Applications
MATH 5300 – Theory of Difference Equations
MATH 5370 – Linear Algebra
MATH 5380 – Intermediate Euclidean Geometry I
MATH 5470 – Dynamical Systems I
MATH 5620 – Mathematical Computation and Scientific Visualization
MATH 5630 – Introduction to Numerical Analysis I
MATH 5650 – Theory of Nonlinear Optimization
MATH/STAT 5670 - Probability and Stochastic Processes I
MATH/STAT 5690 - Chaotic and Random Phenomena
MATH 5710 – Linear Optimization
MATH 5730 – Enumeration
MATH 5750 – Graph Theory
MATH 5770 – Combinatorial Designs