Technical Elective Suggestions for EVEN Students

Any of the courses listed in the options are good technical electives. Other example Technical Elective Courses for EVEN are listed below. If a course is not on this list, you may request approval on a petition form. Check for prerequisites with your advisor and in the catalog: https://catalog.colorado.edu/. Some graduate-level classes (5000+) can also be taken as technical electives -- check with your advisor. Note, however, that prerequisites are not listed in the catalog for graduate courses; instructor’s permission may be required.

Courses marked with an asterisk (*) fulfill the earth sciences technical elective requirement (geology, meteorology or soil science). Courses marked with † will fulfill the air/earth sciences lab/field requirement. New courses added in red

Arts & Sciences

AIRR 3010 (3) Air Force Leadership Studies I

APPM 3010 (3) An Introduction to Nonlinear Systems: Chaos
APPM 3050 (3) Scientific Computing in Matlab
APPM 3170 (3) Discrete Applied Mathematics
APPM 3310 (3) Matrix Methods and Applications
APPM-3350 (3) Advanced Engineering Calculus
APPM 3570 (3) Applied Probability
APPM 4120 (3) Introduction to Operations Research
APPM 4350 (3) Methods in Appl Math: Fourier Series/Boundary Value Prob
APPM 4360 (3) Methods in Appl Math: Complex Variables & Appl
APPM 4380 (3) Modeling in Applied Mathematics
APPM 4390 (3) Modeling in Mathematical Biology
APPM-4440 (3) Undergraduate Applied Analysis 1
APPM 4540 (3) Introduction to Time Series
APPM-4450 (3) Undergraduate Applied Analysis 2
APPM 4560 (3) Markov Processes, Queues, Monte Carlo Sims
APPM 4580 (3) Statistical Applications: Software & Methods
APPM 4650 (3) Intermediate Numerical Analysis 1 APPM
4660 (3) Intermediate Numerical Analysis 2
APPM 4720 (3) Open Topics in Applied Mathematics

ASTR 1030 (4) Accelerated Intro Astronomy 1
ASTR 3830 (3) Astrophysics 2 - Galactic and Extragalactic
ASTR 4330 (3) Cosmochemistry

ATOC 1050 (3) Weather and the Atmosphere *
ATOC 1060 (3) Our Changing Environment: El Nino, Ozone and Climate *
ATOC 1070 (1) Weather and the Atmosphere Lab * †
ATOC/GEOL 3070 (3) Introduction to Oceanography *
ATOC 3050 (3) Principles of Weather
ATOC 3180 (3) Aviation Meteorology *
ATOC 3300 (3) Analysis of Climate and Weather Observation *
ATOC 3500/CHM 3151 (3) Air Chemistry and Pollution *
ATOC 3600 (3) Principles of Climate *
ATOC/ASTR 3720 (3) Planets and Their Atmospheres
ATOC-4200 (3) Biogeochemical Oceanography
ATOC 4500 (1-3) Special Topics in Atmospheric and Oceanic Sciences
ATOC 4500 (3) Boundary Layer Meteorology
ATOC 4500 (3) The Physics and Chemistry of Clouds & Aerosols
ATOC 4700 (3) Weather Analysis and Forecasting
ATOC 4720 (3) Intro to Atmospheric Physics & Dynamics * ATOC 4750 (3) Desert Meteorology and Climate *
CHEM 3151/ATOC 3500 (3) Air Chemistry and Pollution
CHEM 3311 (4) Organic Chemistry 1
CHEM 3321 (1) Lab in Organic Chemistry 1
CHEM 3331 (4) Organic Chemistry 2
CHEM 3341 (1) Lab in Organic Chemistry 2
CHEM 4011 (3) Modern Inorganic Chemistry
CHEM 4021 (3) Inorganic Laboratory
CHEM-4131 (3) Chemistry of Global Health
CHEM 4141 (3) Environmental Water and Soil Chemistry
CHEM 4171 (3) Instrumental Analysis
CHEM 4181 (4) Instrumental Analysis Lab with Environ Emphasis
CHEM 4261 (3) Organic Materials: Structures and Functions
CHEM 4271 (3) Chemistry of Solar Energy
CHEM 4531 (3) Physical Chemistry 2
CHEM 4581 (1) Physical Chemistry Lab 1
CHEM 4591 (2) Physical Chemistry Lab 2
CHEM 4611 (3) Survey of Biochemistry
CHEM 4731 (3) General Biochemistry 2
CHEM 4761 (4) Biochemistry Laboratory

EBIO 1030 (3) Biology: A Human Approach 1
EBIO 1040 (3) Biology: A Human Approach 2
EBIO 1050 (1) Biology: A Human Approach Laboratory
EBIO 1210 (3) General Biology 1
EBIO 1220 (3) General Biology 2
EBIO 1230 (1) General Biology Laboratory 1
EBIO 1240 (1) General Biology Laboratory 2
EBIO 1300 (1-3) Topics in Biological Sciences
EBIO 2010 (1-3) Environmental Issues and Biology
EBIO 2040 (4) Principles of Ecology
EBIO 2070 (4) Genetics: Molecules to Populations
EBIO-2090 (3) Tropical Island and Marine Ecology
EBIO-2091 (1) Marine Ecology, Oceanography and Island Ecology

Field Studies

EBIO 3010 (1-2) Teaching Biology
EBIO 3040 (4) Conservation Biology
EBIO 3080 (4) Evolutionary Biology
EBIO 3180 (3) Global Ecology
EBIO 3190 (3) Tropical Marine Ecology
EBIO 3240 (4) Animal Behavior
EBIO 4155 (3) Ecosystem Ecology
EBIO 3850 (4) Animal Diversity: Invertebrates
EBIO 4030 (3) Limnology
EBIO 4050 (4) Fish Biology
EBIO 4060 (3) Landscape Ecology
EBIO 4090 (2) Coral Reef Ecology
EBIO 4100 (3) Advanced Ecology
EBIO 4120 (2-4) Advanced Ecology
EBIO 4140 (3) Plant Ecology
EBIO 4290 (3) Plant Ecology
EBIO 4290 (3) Molecular Systematics and Evolution
EBIO 4410 (4) Biometry

EBIO 4460 (3) Mycology
EBIO 4500 (4) Plant Biodiversity and Evolution
EBIO 4510 (4) Plant Anatomy and Development
EBIO 4520 (4) Plant Systematics
EBIO 4640 (2-4) Plant Field Studies
EBIO 4660 (4) Insect Biology
EBIO 4750 (4) Ornithology
EBIO 4760 (4) Mammalogy
MCDB 1041 (3) Fundamentals of Human Genetics MCDB
1150 (3) Introduction to Cellular and Molecular Biology
MCDB 1151 (1) Introduction to Cell and Molecular Biology Lab
MCDB-1152 (1) Problem Solving Co-Seminar for Introduction to Molecular and Cellular Biology
MCDB 1161 (2) From Dirt to DNA: Phage Genomics Laboratory I
MCDB 2161 (2) From DNA to Genes, Phage Genomics Laboratory II
MCBD 2150 (3) Principles of Genetics
MCBD 2151 (3) Principles of Genetics Laboratory
MCBD 3135 (3) Molecular Cell Biology I
MCBD 3140 (2) Cell Biology Laboratory
MCBD 3150 (3) Biology of the Cancer Cell
MCBD 3350 (3) Fertility, Sterility, and Early Mammalian Development
MCBD 3501 (3) Structural Methods for Biological Macromolecules
MCBD 3650 (3) The Brain - From Molecules to Behavior
MCBD 3651 (3) The Brain: Dysfunction to Disease MCBD
3990 (3) Introduction to Systems Biology for Biologists
MCBD 4201 (3) From Bench to Bedside: The Role of Science in Medicine
MCBD 4300 (3) Immunology
MCBD 4314 (3) Algorithms for Molecular Biology
MCBD 4361 (3) Evolution and Development
MCBD 4410 (3) Human Molecular Genetics
MCBD 4425 (3) Cellular Stress Responses: Molecular Mechanisms,
Physiology, and Human Diseases
MCBD 4426 (3) Cell Signaling and Developmental Regulation
MCBD 4427 (3) Biology of the Visual System
MCBD 4444 (3) Cellular Basis of Disease
MCBD 4471 (3) Mechanisms of Gene Regulation in Eukaryotes
MCBD 4520 (3) Bioinformatics and Genomics
MCBD 4550 (3) Cells, Molecules and Tissues: A Biophysical Approach
MCBD 4615 (3) Biology of Stem Cells
MCBD 4650 (3) Developmental Biology
MCBD 4680 (3) Mechanisms of Aging
MCBD 4750 (3) Animal Virology MCBD
4777 (3) Molecular Neurobiology
MCBD 4790 (3) Experimental Embryology
MCBD 4811 (3-4) Teaching and Learning Biology

PHYS 1230 (3) Light and Color for Nonscientists
PHYS 1240 (3) Sound and Music
PHYS 2130 (3) General Physics 3
PHYS-2150 (1) Experimental Physics
PHYS 2170 (3) Foundations of Modern Physics
PHYS 2210 (3) Classical Mechanics and Math Methods 1
PHYS-3000 (3) Science and Public Policy
PHYS/ENVS 3070 (3) Energy and the Environment
PHYS 3210 (3) Classical Mechanics and Mathematical Methods 2
PHYS 3220 (3) Quantum Mechanics and Atomic Physics 1
PHYS 3310 (3) Principles of Electricity and Magnetism 1
PHYS 3320 (3) Principles of Electricity and Magnetism 2
PHYS 3330 (2) Electronics for the Physical Sciences
PHYS 4130 (2) Biological Electron Microscopy
PHYS 4150 (3) Plasma Physics
PHYS 4230 (3) Thermodynamics and Statistical Mechanics
PHYS 4340 (3) Introduction to Solid State Physics
PHYS 4410 (3) Quantum Mechanics and Atomic Physics 2
PHYS 4420 (3) Nuclear and Particle Physics
PHYS 4510 (3) Optics

College of Engineering and Applied Science
AREN 1027 (3) Engineering Drawing (formerly AREN 1017)
AREN 2050 (3) Building Materials and Systems
AREN 3010 (3) Mechanical Systems for Buildings
AREN 3040 (3) Circuits for Architectural Engineers
AREN 3050 (3) Environmental Systems for Buildings 1
AREN 3060 (3) Environmental Systems for Buildings 2
AREN 3140 (3) Illumination Laboratory
AREN 3540 (3) Illumination 1
AREN 4010 (3) HVAC System Modeling and Control
AREN 4035 (3) Architectural Structures 1
AREN 4045 (3) Architectural Structures 2
AREN 4110 (3) HVAC Design
AREN 4130 (3) Optical Design for Illumination and Solid State Lighting
AREN 4315 (2) Design of Masonry Structures
AREN 4317 (5) Architectural Engineering Design
AREN 4506 (3) Project Management 1
AREN 4530 (3) Advanced Lighting Design
AREN 4540 (3) Exterior Lighting Systems
AREN 4550 (3) Illumination 2
AREN 4560 (3) Luminous Radiative Transfer
AREN 4570 (3) Building Electrical Systems Design 1
AREN 4580 (3) Daylighting
AREN 4590 (3) Computer Graphics in Lighting Engineering
AREN 4606 (3) Project Management 2: Project Execution and Control
AREN 4830 (1-3) Special Topics for Seniors/Grads.
AREN 5020 (3) Building Energy Audits
ASEN 3111 (4) Aerodynamics
ASEN 3112 (4) Structures
ASEN 3128 (4) Aircraft Dynamics
ASEN 3200 (4) Orbital Mechanics/Attitude Dynamics & Control
ASEN 3300 (4) Aerospace Electronics and Communications
ASEN 4012 (3) Aerospace Materials
ASEN 4013 (3) Foundations of Propulsion
ASEN 4114 (3) Automatic Control Systems
ASEN 4128 (3) Human Factors in Engineering and Design
ASEN 4138 (3) Aircraft Design
ASEN/ATOC 4215 (3) Oceanography *

CHEN 2810 (3) Biology for Engineers
CHEN 3220 (3) Separations and Mass Transfer
CHEN 4130 (2) Chemical Engineering Lab 2
CHEN 4330 (3) Reaction Kinetics
CHEN 4440 (3) Chemical Engineering Materials CHEN 4450 (3) Polymer Chemistry
CHEN 4520 (3) Chemical Process Synthesis.
CHEN 4521 (3) Physical Chemistry for Engineers
CHEN 4530 (2) Chemical Engineering Design Project
CHEN 4570 (4) Instrumentation and Process Control
CHEN 4630 (1) Intellectual Property Law and Engineering
CHEN 4650 (3) Particle Technology
CHEN 4801 (3) Pharmaceutical Biotechnology
CHEN 4805 (3) Biomaterials
CHEN 4810 (2) Biological Engineering Laboratory
CHEN 4820 (3) Biochemical Separations
CHEN 4830 (3) Chemical Engineering Biokinetics
CHEN 4836 (3) Nanomaterials
CHEN 4838 (3) Sp Top: Energy Fundamentals
EMEN 4400 (3) Quality Management for Engineers
EMEN 4405 (3) Fundamental of Systems Engineering
EMEN 4800 (3) Technology Ventures and Marketing
EMEN 4825 (3) Entrepreneurial Business Plan Preparation
EMEN 4830 (3) Entrepreneurial Management and Leadership
EMEN 4830 (3) Principles and Practices of the Sustainable Enterprise
EMEN 4830 (3) Resilience Engineering Management
EMEN 4600 (3) Energy Engineering Projects
EMEN 4830 (3) Principles and Practices for Sustainable Enterprise

EVEN 2840 (1-3) Independent Study
EVEN 4100 (3) Environmental Sampling and Analysis
EVEN 4830 (3) Environmental Engineering Process Modeling
EVEN 4830-002 (3) Cad/Gis
EVEN 4834 (3) International Environmental Impact Assessment
EVEN 4840 (1-3) Independent Study
EVEN 4969 (3) Water and Sanitation
EVEN 4980-4990 (6) Senior Thesis
GEEN 1017 (3) CAD course
GEEN 2010 (3) Engineering Tools and Analysis
GEEN 3400 (3) Invention and Innovation

MCEN 1025 (3) Computer-Aided Design and Fabrication
MCEN 2024 (3) Materials Science
MCEN 2063 (3) Mechanics of Solids
MCEN 3017 (3) Circuits and Electronics
MCEN 3025 (3) Component Design
MCEN 3030 (3) Computational Methods
MCEN 4026 (3) Manufacturing Processes and Systems
MCEN 4115 (3) Mechatronics and Robotics I
MCEN 4117 (3) Anatomy and Physiology for Engineers
MCEN 4135 (3) Wind Energy and Wind Turbine Design
MCEN 4141 (3) Indoor Air Pollution
MCEN 4151 (3) Flow Visualization
MCEN 4152 (3) Introduction to Combustion
MCEN 4162 (3) Energy Conversion
MCEN 4173 (3) Finite Element Analysis
MCEN 4174 (3) Failure of Engineering Materials
MCEN 4183 (3) Mechanics of Composite Materials
MCEN 4228 (3) Sp Top: Energy Conservation and Storage
MCEN 4228 (3) Sp Top: Environmental Modeling
MCEN 4228 (3) Sp Top: Renewable and Sustainable Energy
MCEN 4228 (3) Sp Top: Air Measurement Wind Energy
MCEN 4228/5228 (3 together) Sp Top: Project-Based Learning in Rural Schools
MCEN 4135 (3) Wind Energy and Wind Turbine Design
MCEN 5228 (3) Environmental Law for Engineers