

**DEPARTMENT OF MECHANICAL ENGINEERING  
APPROVED SCIENCE, MATH AND BUSINESS ELECTIVES LIST**

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

**BUSINESS ELECTIVES**

**ACCOUNTING**

ACCT 2010 Principles of Accounting I (3)  
ACCT 2020 Principles of Accounting II (3)  
ACCT 2110 Managerial Accounting (3)

**BLOCKCHAIN**

BKCH 3021 Fundamentals of Blockchain (3)  
BKCH 4021 Business Applications of Blockchain (3)

**DECISION SCIENCE**

DSCI 2100 (3210) Intro Op Supp Chain Mgmt (3)  
DSCI 4260 Project Management (3)  
DSCI 4280 Supply Chain Management (3)

**ENGINEERING SCIENCES**

ES 4910 Survey of Engineering Mgt (3)  
ES 4920 Entrepreneurship for Engineers (3)

**FINANCE**

FIN 3250 Corporate Finance (3)  
FIN 3310 Investment Management (3)  
FIN 4250 Advanced Corporate Finance (3)

**MARKETING**

MKT 2100 (3210) Intro to Marketing (3)  
MKT 4430 Marketing Management (3)  
MKT 4450 Advanced Marketing Mgmt (3)  
MKT 4540 International Marketing (3)

**MANAGEMENT**

MGT 2010 (1040) Legal Environ of Business (3)  
MGT 2100 (3210) Management & Organization (3)  
MGT 2030 (3110) Principle-Based Business Ethics (3)

**MECHANICAL ENGINEERING**

ME 3975 Mechanical Engineering Internship

**MATH ELECTIVES**

MATH 2250 Elementary Linear Algebra (3)  
MATH 4300 Intro to Math. Modeling (3)  
MATH 4440 Part. Differential Equations (3)  
MATH 3205 Elementary Real Analysis (3)  
MATH 3500 Alg I: Intro to Rings/Proofs (3)  
MATH 3700 Combinatorics (3)

MATH 4200 Advanced Analysis (3)  
MATH 4230 Intro to Complex Analysis (3)  
MATH 4255 Math Theory of Probability (3)  
MATH 4265 Intro to Theory of Statistics (3)  
MATH 4340 Num Methods for Ord and Partial Diff Eq (3)  
MATH 4500 Matrix Theory (3)

**SCIENCE ELECTIVES**

**ASTRONOMY**

ASTR 2310 General Astronomy I (4)  
ASTR 2320 General Astronomy II (4)

**CHEMISTRY**

CHEM 1030 General Chemistry II (4)  
CHEM 1060 Gen. Chem & Quant. Ana II (4)  
CHEM 2230 Quantitative Analysis (4)  
CHEM 2300 Intro Organic Chemistry (4)  
CHEM 2420 Organic Chemistry I (4)  
CHEM 2440 Organic Chemistry II (4)  
CHEM 3020 Environmental Chemistry (3)  
CHEM 4507 Physical Chemistry I (3)  
CHEM 4508 Physical Chemistry II (3)

**ATMOSPHERIC SCIENCE**

ATSC 2100 Global Warming (3) \*  
ATSC 4010 Atmospheric Processes I (3)  
ATSC 4320 The Ocean Environment (3)?

**GEOLOGY**

GEOL 1100 Physical Geology (4)  
GEOL 1110 Physical Geology for Engineers (4)  
GEOL 2010 Mineralogy (3)  
GEOL 2020 Intro to Petrology (2)  
GEOL 2050 Principles of Paleontology (3)  
GEOL 2070 Intro to Oceanography (4)  
GEOL 2100 Stratigraphy & Sed (4)  
GEOL 2150 Geomorphology (4)  
GEOL 3005 Principles of Geophysics (4)  
GEOL 4000 Paleomag in Geol/Geoph (3)  
GEOL 4001 Modeling the Earth System (4)  
GEOL 4025 Igneous & Metamor Petr (4)  
GEOL 4050 Geology of Wyoming (3)  
GEOL 4113 Geological Remote Sensing (4)  
GEOL 4125 Igneous Petrology (2)  
GEOL 4280 Paleobotany (4)

## LIFE SCIENCE

LIFE 1010 General Biology (4) \*  
LIFE 2002 Global Ecology (3)  
LIFE 2022 Animal Biology (4)  
LIFE 2023 Biology for Plants and Fungi (4)  
LIFE 2050 Biol of Aging and Human Dev (3)  
LIFE 3050 Genetics (3)  
LIFE 3400 General Ecology (3)  
LIFE 3410 Intro to Field Ecology (2)  
LIFE 3500 Evolutionary Biology (3)  
LIFE 3600 Cell Biology (3)

## PHYSICS

PHYS 1210 Engineering Physics I (4) \*\*  
PHYS 1310 College Physics I (4)\*\*  
PHYS 2310 Physics III: Waves and Optics (4)  
PHYS 2320 Physics IV: Modern Physics (3)  
PHYS 4000 Applied Laser Science (3)  
PHYS 4210 Classical Mechanics (3)  
PHYS 4220 Classical Mechanics II (4)  
PHYS 4310 Quantum Mechanics (3)  
PHYS 4340 Semiconductor Mat'ls/Device (3)\*Cross listed EE 4340  
PHYS 4350 Adv Quantum Mechanics (3)  
PHYS 4410 Electricity and Magnetism I (3)  
PHYS 4420 Electricity and Magnetism II (3)  
PHYS 4510 Thermo and Statistical Mech (3)  
PHYS 4710 Solid State Physics (3)

## MOLECULAR BIOLOGY

MOLB 2021 General Microbiology (4)  
MOLB 2240 Medical Microbiology (4)  
MOLB 3000 Intro to Molecular Biology (3)  
MOLB 3610 Principles of Biochemistry (4)  
MOLB 4440 Microbial Genetics (3)

**ME Technical Elective (for Catalog years prior to 2023):** Must have prior approval of the advisor. May be chosen from the list of math, science or business electives above. Engineering courses from other disciplines can be considered, including COSC courses. COSC 1010, 1015, and 1200, ARE 3030, CE 1010, and FYS courses are explicitly excluded.

**ESE Electives** - Choose 2 from: ECON 1300, ENR 2000, ENR/PHIL 2300, ENR 2330, ENR/PHIL 2345, POLS 4051, POLS 4350, GEOL 3500, GEOL 3650, PETE 4000, ENR 4890 (Applied GIS or Econ Nat Resource), CE 4470 (Water for Energy)

**ESE Technical Electives** – Choose 5 from: ES 2800, PETE 2050, GEOL 4190, CHEM 4050, CE 3400, CE/CHE 4430, ME 3400, ME 3450, ME 3975, ME 4340, ME 4430, ESE/ME 4455, ESE/ME 4460, ESE/ME 4461, ESE/ME 4470, ARE 4740

**\* ATSC 2100 and LIFE 1010 are required courses for students in the ESE program, and cannot also be used to satisfy the science elective requirement for the ESE degree.**

**\*\*PHYS 1210/1310 should be taken prior to or concurrently with ES 2120**