

Approved Electives for ARE

Updated October 2013

ARE General Elective List

AMST 2400 Introduction to Historic Preservation (3)
BUSN 2000 Introduction to International Business (3)
CE 2070 Engineering Surveying
COJO 1010 Public Speaking (3)
ERS/ENR 1000 Energy and Society (3)
ENR 2000 Environment and Society (3)
ES 4910 Survey of Engineering Management
ESS 3480 Environmental Change (3)
FIN 2010 Personal Finance and Investments (3)
GEOL 4310 Planning Theory (3)
GEOL 4330 Land Use Planning (3)
MGT 1040 Legal Environment of Business (3)
MGT 2000 Introduction to Business (3)
MGT 3210 Management and Organization (3)
Any (additional) course from the ARE Math/Science Electives List (below)
Any (additional) course from the Junior Electives List (below)
Any (additional) course from the Senior Electives List (below)
Any (additional) course from the Major Electives List (below)

Mathematics / Science Electives

ATSC 2000 Introduction to Meteorology (4)
CHEM 1030 General Chemistry II (4)
GEOL 1100 Physical Geology (4)
GEOL 1200 Historical Geology (4)
GEOL 1500 Water, Dirt, and the Earth's Environment (4)
GEOL 1600 Global Sustainability (4)
GEOL 2000 Foundations of Geology (4)
GEOL 2080 General Field Geology (4)
LIFE 1010 General Biology (4)
MATH 2250 Elementary Linear Algebra (3)
MATH 3310 Applied Differential Equations II (3)
MATH 4230 Introduction to Complex Analysis (3)
MATH 4255 Mathematical Theory of Probability (3)
MATH 4440 Partial Differential Equations I (3)
PHYS 1220 Engineering Physics II (4)
STAT 4255 Mathematical Theory of Probability (3)

Junior Electives must take two

ARE 3300 Plumbing & Electrical Systems (3)
ARE 3400 HVAC of Buildings (3)
CE 3600 Soil Mechanics (3)

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Senior Electives must take **five** or **six**

Third Junior Elective (3)

Structural Courses

- ARE 4200 Structural Analysis II (3)
- ARE 4250 Structural Steel Design (3)
- ARE 4260 Structural Concrete Design (3)
- ARE 4280 Reinforced Masonry Design (3)
- ARE 4290 Structural Timber Design (3)
- CE 4610 Foundation Engineering (3)
- CE 4620 Rock & Soil Slope Engineering (3)
- CE 4630 Geotechnical Engineering (3)
- CE 4820 Groundwater and Drainage Engineering (3)
- CE 5010 Advanced Mechanics of Materials (3)
- CE 5020 Finite Element Analysis (3)
- CE 5200 Advanced Structural Analysis (3)
- CE 5220 Structural Dynamics (3)
- CE 5240 Structural Framing Systems Design (5)
- CE 5255 Advanced Steel Design (3)
- CE 5260 Prestressed Concrete Design (3)
- CE 5270 Highway Bridge Engineering (3)
- CE 5600 Advanced Soil Mechanics (3)

Mechanical Courses

- ARE 3360 Fundamentals of Transport Phenomena
- ARE 4330 Building Electrical Systems (3)
- ARE 4390 Bldg Safety & Fire Protection (3)
- ARE 4430 HVAC Systems Analysis and Design (3)
- ARE 4490 Modeling and Optimization of Energy Systems (3)
- ME 3040 Thermodynamics II (3)
- ME 3170 Machine Design (3)
- ME/ESE 4460 Solar and Geothermal Energy (3)
- ME/ESE 4470 Wind and Tidal Energy (3)

Major Electives may take **zero** or **one** (to total six with category above)

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| AMST 4900 Field Studies in Historic Preservation (3) | CE 3300 Hydraulics Engineering (3) |
| AMST 5400 American Built Environment (3) | CE 3400 Intro to Environmental Engineering (3) |
| ARE 4030 History of Green Building (3) | CE 3500 Transportation Engineering (3) |
| ARE/AMST 4040 Historic Preservation & Sustainability (3) | CE 4970 Design Squad Coop (3) |
| ARE 4920 Special Topics (3) | CE 4975 Civil and Architectural Engineering Internship (3) |
| ARE 5600 Collaborative BIM Design | ENR 4600 Campus Sustainability (3) |
| ARE 5700 Architectural Engineering Problems I | FCSC 5101 Special Topics: Green Design (3) |