Architectural Engineering

Architectural Engineering Complimentary Electives are upper level courses selected to develop and enhance a student's knowledge of a specialty area in Architectural Engineering.

Students may take any of the courses on the following approved list to meet the complimentary elective requirements. Students are responsible for checking current semester offerings and prerequisites and meeting any such requirements prior to enrolling in any of the following courses, including those prerequisites for the ARE Capstone course that may be on the list below.

**Architecture Engineering Courses:**

- ARE 499 Honors Research (V)
- ARE 537 Acoustics (on sufficient demand)
- ARE 620 Problems in Architectural Engineering (V)
- ARE 630 Introduction to LEED (V) (Int)
- ARE 711 Bldg Energy Codes and Standards (2) (S)
- ARE 712 Energy Modeling Lab (1) (S)
- ARE 715 (A) ASHRAE Competition Team (3) (S)
- ARE 715 (B) AEI Competition Team (V) (F,S)
- ARE 720 Topics in Architectural Engr. (V)
- ARE 723 Timber Structures (3) (Offering Varies)
- ARE 724 Adv. Steel Design (3) (S, Even Years)
- ARE 725 Cold-Formed Steel Design (3) (S, Odd Years)
- ARE 726 Masonry Structural Design (3) (Offering Varies)
- ARE 729 Building Seismic Design (3) (Offering Varies)
- ARE 731 Adv. Lighting Design (3) (S)
- ARE 734 Adv. Mechanical Sys. Design (3) (F, S)
- ARE 735 Electrical Systems Design (3) (F, S)
- ARE 736 Advanced Plumbing Design (3) (F)
- ARE 741 Building Communication Sys. (3) (F)

**Civil Engineering Courses:**

- BAE 640 Instrument. & Control for Biol. Sys. (3) (S)
- BAE 651 Air Pollution Engineering (3) (S)

**Environmental Engineering Courses:**

- CE 212 Elem. Survey Engg (3) (F, S)
- CE 522 Soil Mechanics I (3) (F,S)
- CE 550 Water Resource Engg (3) (F)
- CE 552 Hydraulic Engineering (3) (S)
- CE 703 Responsibility in Engineering (3) (S)
- CE 732 Advanced Structural Analysis I (3) (F)
- CE 742 Advanced Steel Design (3) (S)
- CE 743 Adv. Reinforced Concrete (3) (S)
- CE 745 Structural Dynamics (3) (F)

**Electrical Engineering Courses:**

- CNS 610 Pre-Engineered Metal Buildings (2) (Int)
- CNS 629 Tilt-up Concrete Structures (2) (Int)
- CNS 634 Building Systems Commissioning (2) (Int)
- CNS 738 Mechanical and Electrical Estimating (2) (F, S)

**Engineering Law Courses:**

- DEN 550 Engineering Law (3) (Offering Varies)

**Electrical and Computer Engineering Courses:**

- ECE 525 Electronics I (3) (F, S)
- ECE 526 Electronics II (3) (F, S)
- ECE 557 Electromagnetic Theory I (4) (F, S)
- ECE 581 Energy Conversion I (3) (F, S)
- ECE 681 Wind & Solar Engineering (3) (F)
- ECE 685 Power Systems Design (3) (F)
- ECE 686 Power Systems Protection (3) (S)
- ECE 758 Electromagnetic Theory II (3) (F)

**Industrial and Mechanical Engineering Courses:**

- IMSE 555 Industrial Facilities Layout and Design (3) (F, S)
- MATH 551 Applied Matrix Theory (3) (F, S)
- ME 573 Heat Transfer (3) (F, S)
- ME 622 Environmental Engineering I (3) (S)
- ME 720 Intermediate Fluid Mechanics (3) (S)
- PHYS 651 Introduction to Optics (3) (F)

**Theatre Courses:**

- THTRE 579 Fundamentals of Stage Lighting (3)
- THTRE 711 Topics in Technical Theatre (Lighting Class only) (3)
ENGINEERING ELECTIVE LIST

Department of Architectural Engineering and Construction Science and Management
Kansas State University

Engineering Electives are upper level courses selected to develop and enhance a student's knowledge of a technical subject area outside of, but related to, the practice of and research into Architectural Engineering.

Students may take any of the courses on the following approved list to meet the Engineering Elective requirements. Students are responsible for checking current semester offerings and prerequisites and meeting any such requirements prior to enrolling in any of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
</tr>
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<tbody>
<tr>
<td>ECE 519</td>
<td>Electric Circuits &amp; Controls (4)</td>
<td>(F,S)</td>
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<tr>
<td>IMSE 530</td>
<td>Engineering Economic Analysis (2)</td>
<td>(F,S)</td>
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<tr>
<td>ME 512</td>
<td>Dynamics (3)</td>
<td>(F,S)</td>
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<tr>
<td>ME 571</td>
<td>Fluid Mechanics (3)</td>
<td>(F, S)</td>
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<tr>
<td>STAT 703</td>
<td>Introduction to Statistical Methods for the Sciences (3)</td>
<td>(F,S)</td>
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SCIENCE ELECTIVE LIST

Department of Architectural Engineering and Construction Science and Management
Kansas State University

Science Electives are courses selected to introduce a student to basic sciences concepts that may be outside of, but related to, the practice of and research into Architectural Engineering.

Students may take any of the courses on the following approved list to meet the Science Elective requirements. Students are responsible for checking current semester offerings and prerequisites and meeting any such requirements prior to enrolling in any of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
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<tbody>
<tr>
<td>BIOL 198</td>
<td>Principles of Biology (4)</td>
<td>(F,S)</td>
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<tr>
<td>CHEM 230</td>
<td>Chemistry II (4)</td>
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<tr>
<td>GEOG 235</td>
<td>Atmospheric Science (4)</td>
<td>(F)</td>
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<td>GEOG 340</td>
<td>Geography of Natural Resources (3)</td>
<td>(F)</td>
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<td>GEOG 350</td>
<td>Earth System Geography (4)</td>
<td>(U - GC)</td>
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<tr>
<td>GEOG 360</td>
<td>Sustainability Concepts &amp; Issues (3)</td>
<td>(S)</td>
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<tr>
<td>GEOL 100</td>
<td>Earth in Action (3)</td>
<td>(S)</td>
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<tr>
<td>GEOL 125</td>
<td>Natural Disasters (3)</td>
<td>(F,S)</td>
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