

**COMPLEMENTARY ELECTIVE LIST (0 hours minimum and 3 hours maximum required)****08/01/21****Department of Architectural Engineering and Construction Science and Management Kansas State University**

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. Course offerings may vary as conditions dictate.

|     |     |   |       |     |   |
|-----|-----|---|-------|-----|---|
| ARE | 620 | Problems in Architectural Engineering (V)       | ECE   | 581 | Energy Conversion I (3) (F, S)                        |
|     |     |   | ECE   | 681 | Wind & Solar Engineering (3) (F)                      |
| CE  | 522 | Soil Mechanics I (3) (F,S)                      | ECE   | 685 | Power Systems Design (3) (F)                          |
| CE  | 550 | Water Resource Engg (3) (F)                     | ECE   | 686 | Power Systems Protection (3) (S)                      |
| CE  | 552 | Hydraulic Engineering (3) (S)                   |       |     |   |
| CE  | 732 | Advanced Structural Analysis I (3) (F)          | MATH  | 551 | Applied Matrix Theory (3) (F, S)                      |
| CE  | 742 | Advanced Steel Design (3) (S)                   |       |     |   |
| CE  | 743 | Adv. Reinforced Concrete (3) (S)                | ME    | 573 | Heat Transfer (3) (F, S)                              |
| CE  | 745 | Structural Dynamics (3) (F)                     | ME    | 622 | Environmental Engineering I (3) (S)                   |
| CNS | 629 | Tilt-up Concrete Structures (2) (F)             | THTRE | 579 | Lighting Design (3)                                   |
| CNS | 738 | Mechanical and Electrical Estimating (2) (F, S) | THTRE | 711 | Topics in Technical Theatre (Lighting Class only) (3) |

**DESIGN ELECTIVE LIST ( 9 hours minimum and 12 hours maximum required)****08/01/21****Department of Architectural Engineering and Construction Science and Management Kansas State University**

Architectural Engineering Design Electives are upper level courses selected to develop and enhance a student's knowledge of advanced design methods and applications in Architectural Engineering.

Students may take any of the courses on the following approved list to meet the design 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. Course offerings may vary as conditions dictate.

|     |     |  |     |     |  |
|-----|-----|--|-----|-----|--|
| ARE | 537 | Acoustics (on sufficient demand)             | ARE | 726 | Masonry Structural Design (3) (every 3rd semester) |
| ARE | 711 | Bldg Energy Codes and Standards (2) (S)      | ARE | 729 | Building Seismic Design (3) (Every 3rd semester)   |
| ARE | 712 | Energy Modeling Lab (1) (S)                  | ARE | 731 | Adv. Lighting Design (3) (S)                       |
| ARE | 715 | (A) ASHRAE Competition Team (3) (S)*         | ARE | 733 | Advanced Mech Hydronic Design (3) (S)              |
| ARE | 715 | (B) AEI Competition Team (1/2) (F,S)*        | ARE | 734 | Adv. Mechanical Air Syst Design (3) (F)            |
| ARE | 722 | Bldg Loads & Comp Aided Struct Analy (3) (F) | ARE | 735 | Electrical Systems Design (3) (F)                  |
| ARE | 723 | Timber Structures (3) (every 3rd semester)   | ARE | 736 | Advanced Plumbing Design (3) (F)                   |
| ARE | 724 | Adv. Steel Design (3) (S, Even Years)        | ARE | 741 | Building Communication Sys. (3) (F)                |
| ARE | 725 | Cold-Formed Steel Design (3) (S, Odd Years)  |     |     |  |

\* A maximum of 3 credit hours total may be applied from design competition teams

**ENGINEERING ELECTIVE LIST (6 hours minimum and 9 hours maximum required)****08/01/21****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. Course offerings may vary as conditions dictate.

ECE 519 Electric Circuits & Controls (4) (F,S)

ME 512 Dynamics (3) (F,S)

ME 571 Fluid Mechanics (3) (F, S)

**DEVELOPMENT ELECTIVE LIST (3 hours required)****08/01/21****Department of Architectural Engineering and Construction Science and Management  
Kansas State University**

Development Electives are courses selected to introduce a student to concepts that will enhance non-technical skills 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 Development 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. Course offerings may vary as conditions dictate.

STAT 703 Introduction to Statistical Methods for the Sciences (3) (F,S)

ECON 120 Principles of Microeconomics (3) (F,S,U)

CE 212 Elementary Surveying Engineering (3) (F,S)

CE 680 Economics of Design & Construction (3) (S)

ACCTG 231 Accounting for Business Operations (3) (F,S,U)

IMSE 530 Engineering Economic Analysis (2)

IMSE 532 Industrial Project Evaluation (1)