COMPLEMENTARY ELECTIVE LIST (0 hours minimum and 3 hours maximum required) **08/24/23**

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	460	ARE Professional Practice (3) (V)
ARE	620	Problems in Architectural Engineering (V)
CE	212	Elementary Surveying (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	660	Economics of Des/Constr (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)
CNS	629	Tilt-up Concrete Structures (2) (F)
CNS	738	Mechanical and Electrical Estimating (2) (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)
IMSE	530	Engineering Economic Analysis (2) (F,S)
IMSE	532	Industrial Project Evaluation (1) (F,S)
MATH	551	Applied Matrix Theory (3) (F, S)
ME	573	Heat Transfer (3) (F, S)
ME	622	Environmental Engineering I (3) (S)
STAT	703	Intro to Statistical Methods for the Sciences (3) (F,S)
THTRE	579	Lighting Design (3)
THTRE	711	Topics in Technical Theatre (Lighting Class only) (3)

DESIGN ELECTIVE LIST (9 hours minimum and 12 hours maximum required) **08/24/23**

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	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 (1/2) (F,S)*
ARE	722	Bldg Loads & Comp Aided Struct Analy & Design (3) (F)
ARE	723	Timber Structural Analysis (3) (every 3rd semester)
ARE	724	Steel Design II (3) (S, Even Years)
ARE	725	Cold-Formed Steel Design (3) (S, Odd Years)
ARE	726	Masonry Structural Design (3) (every 3rd semester)
ARE	729	Building Structural Seismic Design (3) (Every 3rd semester)
ARE	731	Adv. Lighting Design (3) (S)
ARE	733	Advanced Mech Hydronic Syst Design (3) (S)
ARE	734	Adv. Mechanical Air Syst Design (3) (F)
ARE	735	Electrical Systems Design (3) (F)
ARE	736	Advanced Plumbing Design (3) (F)
ARE	741	Building Communication Sys. (3) (F)

* 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) **08/24/23**

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 571 Fluid Mechanics (3) (F, S)