



**BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING (BS ARCE)
THE UNIVERSITY OF KANSAS (KU)**



ELECTIVES LIST FOR KU BS ARCE STUDENTS

ENGINEERING ELECTIVE

During or before your fourth year in the KU BS ARCE degree program you will choose a technical emphasis for your intended career or graduate study. These emphases are 1) Building Construction Management, 2) Building Lighting and Electrical Systems, 3) Building Mechanical and Energy Systems, and 4) Building Structural Systems. A hybrid or emerging emphasis such as Sustainability, Pre-Architecture (toward KU's NAAB-accredited Master of Architecture), Acoustics, or Fire Protection is appropriate as well.

In support of your technical emphasis, the BS ARCE curriculum includes a three credit-hour engineering elective course which may be either an engineering science (ES) or design (ED). In the following tables the asterisked (*) courses are highly recommended for undergraduate students. The higher-level courses may be more appropriate for graduate study which is also recommended and may require as little as one more year at KU; co-enrollment in a graduate program, e.g., our M.S. ARCE, MSCE, or MCM, in your last semester is possible. If you have been admitted to KU's NAAB-accredited Master of Architecture program, three credit-hours of a third ARCH studio course that is required for the M.ARCH degree may be used to fulfill this BS ARCE elective. When you are ready to choose your engineering elective course be sure to obtain the latest version of this *Electives List* from the CEAE/ARCE website and to discuss your career plans with your CEAE faculty advisor.

BUILDING CONSTRUCTION MANAGEMENT

Dept./No.	Course Title	Credit-Hours
CE 240	Geomatics	3 (Engineering Science = ES)
CMGT 701	Construction Planning and Scheduling	3 (Engineering Design = ED)
CMGT 702	Construction Equipment & Methods	3 (ED)
CMGT 703	Construction Quality, Productivity, and Safety	3 (ED)
CMGT 704	Construction Estimating & Bidding	3 (ED)
CMGT 705	Construction Contracts, Bonds, & Insurance	3 (ED)
CMGT 706	Construction Alternative Project Delivery Methods	3 (ED; Catalog listing in progress)
CMGT 707	Engineering Risk and Decision Analysis	3 (ED)
CMGT 708	Introduction to Sustainable Design & Construction	3 (ED)
CMGT 709	Alternative Project Delivery Methods	3 (ED; Catalog listing in progress)

BUILDING LIGHTING AND ELECTRICAL SYSTEMS

Dept./No.	Course Title	Credit-Hours
ME 612 OR C&PE 521	Heat Transfer	3 (Engineering Science = ES)
ARCE 641	Power Systems Engineering II	3* (Engineering Design = ED)
ARCE 642	Power System Protection	3* (ED)
ARCE 644	Electrical Machines & Drives	3* (ED)
ARCE 645	Electrical Energy Production & Storage	3* (ED)
ARCE 647	Power System Analysis I	3* (ED)
ARCE 648	Power System Analysis II	3* (ED)
ARCE 663	Energy Management	3 (ED)
ARCE 750	Daylighting	3* (ED)
ARCE 751	Advanced Lighting Design	3* (ED)
ARCE 752	Light Measurement and Design	3* (ED)
ARCE 760	Automatic Control	3 (ED)

BUILDING MECHANICAL AND ENERGY SYSTEMS

Dept./No.	Course Title	Credit-Hours
ME 612 OR C&PE 521	Heat Transfer	3* (Engineering Science = ES)
ARCE 662	Water Systems Design (if won't take ARCE 698 w/ Prof. Rock in a Spring Semester; same content. Fall ARCE 698 is OK.)	3* (Engineering Design = ED)
ARCE 663	Energy Management	3* (ED)
ARCE 664	Fire Protection Engineering	3* (ED)
ARCE 665	Solar Energy Systems Design	3* (ED)
ARCE 760	Automatic Control	3* (ED)
ARCE 764	Advanced Thermal Analysis of Buildings	3* (ED)

BUILDING STRUCTURAL SYSTEMS

Dept./No.	Course Title	Credit-Hours
CE 487	Soil Mechanics	4* (3 ES, 1 ED)
CE 588	Foundation Engineering	3* (ED; CE 487 Prerequisite)
CE 763	Design of Prestressed Concrete Structures	3* (ED)
CE 764	Advanced Design of Reinforced Concrete Structures	3* (ED)

CE 765	Advanced Steel Design – Building Structures	3* (ED)
CE 768	Design of Timber Structures	3* (ED)
CE 769	Design of Masonry Structures	3* (ED; Edwards Campus/Zoom)

OTHER ARCHITECTURAL ENGINEERING TOPICS

Dept./No.	Course Title	Credit-Hours
ARCE 620	Architectural Acoustics	3 (ED)
ARCE 621	Electro-Acoustical Systems	3 (ED)
ARCE 675	Sound and Vibration Control	3 (ED)

Note: Some elective courses are taught less often so discuss them and alternatives with your advisor and the courses' instructors. ARCE, CE, and CMGT special-problems and directed-readings courses may also be available.

KU CORE ELECTIVES

The University of Kansas requires all undergraduates, including transfer students, to complete the *KU Core*. It is the obligation of each student to ensure meeting its requirements; details, and lists of approved elective-courses, can be found via kucore.ku.edu.

The BS ARCE curriculum requires already many courses that fulfill several goals and learning outcomes of the *KU Core*, but four other elective-courses are still needed for:

General Education (GE)

Goal 2, Communication; Learning Outcome 2, Spoken (GE22 on the BS ARCE curriculum sheet)

Goal 3, Breadth of Knowledge; Learning Outcome 3S, Social Sciences (GE3S)

Advanced Education (AE)

Goal 4, Culture and Diversity; Learning Outcome 1, Human Diversity (AE41)

Goal 5, Social Responsibility and Awareness; Learning Outcome 1 (AE51) {CE 610 highly recommended}

Because approved courses for the *KU Core* will vary over time, it is advised that each student print and retain the list showing that each chosen course, when completed, met the specific requirement at that time. Classes.ku.edu lists all current and recent course offerings.