



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



ELECTIVES LIST

ENGINEERING ELECTIVES

During or before your fourth year in the KU BS ARCE degree program you will choose an area of technical emphasis. These emphases are 1) Building Lighting and Electrical Systems, 2) Building Mechanical and Energy Systems, 3) Building Structural Systems, and 4) Building Construction Management. Choosing a hybrid or emerging area of emphasis such as Sustainability, Pre-Architecture, or Fire Protection is appropriate too.

In support of the technical emphasis, the curriculum includes three credit-hours of engineering science (ES) electives and six to 12 credit-hours of engineering design (ED) electives. In the following tables the asterisked (*) courses are highly recommended for undergraduate students; higher-level courses may be more appropriately reserved for graduate study. When you are ready to enroll in elective courses be sure to obtain an updated version of this *Electives List* from the CEAE/ARCE website and to discuss your options fully with your faculty advisor.

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 644	Electrical Machines & Drives	3* (ED)
ARCE 651	Illuminating Engineering II	3* (ED)
ARCE 663	Energy Management	3 (ED)
ARCE 760	Automatic Control	3 (ED)
ARCH 520	Architectural Acoustics	3* (ED, or AD)
ARCH 521	Electro-Acoustics	3* (ED, or AD)

(Continued, next page)

BUILDING MECHANICAL AND ENERGY SYSTEMS

Dept./No.	Course Title	Credit-Hours
ME 612 OR C&PE 521	Heat Transfer	3* (Engineering Science = ES)
ARCE 663	Energy Management	3* (Engineering Design = ED)
ARCE 664	Fire Protection Engineering	3* (ED)
ARCE 665	Solar Energy Systems Design	3* (ED)
ARCE 675	Sound and Vibration Control	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 763	Design of Prestressed Concrete Structures	3 (ED)
CE 764	Design of Reinforced Concrete Structures	3 (ED)
CE 765	Advanced Steel Design – Building Structures	3 (ED)

BUILDING CONSTRUCTION MANAGEMENT

Dept./No.	Course Title	Credit-Hours
CE 240	Surveying	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 708	Introduction to Sustainable Design & Construction	3* (ED)
CMGT 709	International Construction Management	3 (ED)
CMGT 790	Construction Seminar	3 (ED)

ARCHITECTURAL DESIGN ELECTIVES

The BS ARCE curriculum includes six credit-hours of “architectural or engineering design” electives. Many architectural design (AD) electives are shown below with the asterisked (*) courses being popular or highly recommended. Some courses require permission to enroll from the Architecture Program in Marvin Hall; Pre-Master of Architecture (M.ARCH) students should choose their electives carefully with advice from their ARCE faculty advisers and the Architecture Program office. Architectural (ARCH) structural, mechanical, or lighting/electrical systems courses may not be taken for credit toward the BS ARCE without petition. Engineering design electives are selected from the preceding Engineering Electives tables.

ARCHITECTURAL DESIGN

Dept./No.	Course Title	Credit-Hours
ARCH 209	Architectural Design II, or another in-sequence studio above ARCH 200	6* (Architectural Design = AD)
ARCH 360	Introduction to Landscape Architecture	3 (AD)
ARCH 520	Architectural Acoustics	3* (AD)
ARCH 521	Electro-Acoustics	3* (AD)
ARCH 552	Ethics & Leadership in Professional Practice	3* (AD)
ARCH 560	Site Planning	3 (AD)
ARCH 577	Marketing Architectural Services	3* (AD)
ARCH 600	Special Topics in Architecture	3 (AD)
ARCH 618	Architectural Photography	3* (AD)
ARCH 629	Listening to Architecture	3 (AD)
ARCH 630	Theory & Context of Architecture	3 (AD)
ARCH 648	Historic Preservation	3 (AD)
ARCH 658	Programming	3 (AD)
ARCH 665	History of Urban Design	3 (AD)
ARCH 690	Architecture Study Abroad	3-6* (AD)

BASIC SCIENCE ELECTIVE

The BS ARCE curriculum includes a three credit-hour basic science (“N”-coded courses in the *KU Catalog* and *Schedule of Classes*) elective course. There are many “N” courses available, and some examples are shown below. MATH and computer science courses may not be taken as N electives toward the BS ARCE. The asterisked (*) courses below are popular and/or highly recommended.

BASIC SCIENCE ELECTIVE COURSES

Dept./No.	Course Title	Credit-Hours
ANTH 104	Fundamentals of Physical Anthropology	4
ASTR 191	Contemporary Astronomy	3
ATMO 105	Introductory Meteorology	5*
ATMO 220	Unusual Weather	3
BIOL 100	Principles of Biology	3
CHEM 188	Foundations of Chemistry II (if completed CHEM 184, not CHEM 150)	5
EVRN/GEOG 148	Scientific Principles of Environmental Studies	3*
GEOG 104	Principles of Physical Geography	3
GEOL 101	Introduction to Geology	3*
GEOL 105	History of the Earth	3*
PHSX 313	General Physics III	3*
SPLH 663	Principles of Hearing Science	3

Ideally the area of technical emphasis should be selected before completing the basic science elective course, but this often is not practical. If possible, a student pursuing the Structural or Construction emphasis should take a geology course. Those interested in Mechanical and Energy Systems should take ATMO 105 or EVRN 148. Lighting-emphasis students should take PHSX 313.

HUMANITIES ELECTIVE

The BS ARCE curriculum requires three architectural history (ARCH) courses which give “depth” in humanities. Also included in the curriculum are zero or three credit-hours of elective humanities (“H”- or “WH”-coded courses in the *KU Catalog and Schedule of Classes*) intended for “breadth.” Some popular courses have been:

HUMANITIES ELECTIVE COURSES

Dept./No.	Course Title	Credit-Hours
ANTH 110/310	Introduction to Archaeology	4
ENGL 209	Introduction to Fiction	3
GEOG 111	Maps and Mapping	4
HIST 101	Introduction to History	3
HIST 137	History of Modern Science	3
HIST 340	History of the Second World War	3
MUSC 336	Masterworks of Music	3
PHIL 140	Introduction to Philosophy	3
PHIL 160	Introduction to Ethics	3

SOCIAL SCIENCE ELECTIVE

The BS ARCE curriculum requires three or six credit-hours of social sciences (“S”-coded courses in the *KU Catalog and Schedule of Classes*), also intended for “breadth.” Some popular and/or highly recommended courses (*) have been:

SOCIAL SCIENCE ELECTIVE COURSES

Dept./No.	Course Title	Credit-Hours
ANTH 100	General Anthropology	3*
ECON 104	Introductory Economics	4*
ECON 142	Principles of Microeconomics	3*
ECON 144	Principles of Macroeconomics	3*
GEOG 100	World Regional Geography	3
GEOG 102	Principles of Human Geography	3

ABSC 100	Introduction to Behavioral Science	3
LING/ANTH 106	Introductory Linguistics	3
POLS 110	Introduction to U.S. Politics	3
PSYC 104	General Psychology	3*
SOC 104	Elements of Sociology	3*

PROFESSIONAL SKILLS ELECTIVE

The BS ARCE curriculum includes three credit-hours of electives intended to enhance your professional development. The following courses, with the asterisked (*) courses being highly recommended, are the currently approved electives, but you can submit through your advisor courses that you think should be added to the list. Additions will be considered at a later ARCE faculty meeting. A student may also submit a course substitution petition through his or her advisor. For approval, such a substitution must meet the intention of the Professional Skills Elective.

PROFESSIONAL SKILLS ELECTIVE COURSES

Dept./No.	Course Title	Credit-Hours
ARCH 209	Architectural Design II, or another in-sequence studio above ARCH 200	6*
ACCT 200 OR 205	Financial Accounting	3-4
COMS 130 or 150	Spoken Communication	3
ENGL 362	Foundations of Technical Writing	3*
ENGR 515	Verbal Communications in Engineering	1
ME 508	Numerical Analysis	3*
MEMT 670	Acoustics of Music	3
THR 224	Lighting Production	2
Foreign Language	(not in the student's native language)	3
ROTC lecture courses	(student must complete an ROTC curriculum)	3

Most students are encouraged to take ENGL 362. Pre-Architecture students should take a design studio, with permission of the Architecture Program office. Mechanical/Energy students who will be pursuing graduate study are encouraged to complete ME 508.

Revised: September 28, 2012

Latest version available via www.arce.ku.edu

Please send suggestions/corrections to docrock@ku.edu