

Biological Systems Engineering

126 credit hours total

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
*MATH 220 (4) Analytic Geometry and Calculus I KSC-3	MATH 221 (4) Analytic Geometry and Calculus II PR: MATH 220 ≥ C	MATH 222 (4) Analytic Geometry and Calculus III PR: MATH 221 ≥ C	MATH 340 (4) Elementary Differential Equations PR: MATH 221 ≥ C	ME 513 (3) Thermodynamics I PR: MATH 222, PHYS 213	ME 571 (3) Fluid Mechanics PR: ME 512 or CE 530, MATH 222 PR/CO: ME 513 or ME 310	●BAE 536 (3) Biological Systems Engineering Senior Design I PR: BAE 331, PR/CO: ME 533 or BAE 545 or BAE 560	●BAE 636 (1) Biological Systems Engineering Senior Design II PR: BAE 536
CHM 210 (4) Chemistry I	CHM 230 (4) Chemistry II PR: CHM 210	*PHYS 213 (5) Engineering Physics I KSC-4 PR/CO: MATH 220	PHYS 214 (5) Engineering Physics II PR: PHYS 213 PR/CO: MATH 221	●BAE 445 (3) Biological Engineering Fundamentals PR: BIOL 198, BAE 345 or CE 533-OR-CHE 354,355	●BAE 331 (1) Professional Practice for Biological Systems Engineering Design	●BAE 545 (3) Biological Process Engineering PR/CO: CHE 530 or ME 571	●BAE 640 (3) Instrumentation and Control for Biological Systems PR: ECE 410 or ECE 519, MATH 340
DEN 160 (1) College of Engineering Orientation	BIOL 198 (4) Principles of Biology	●BAE 460 (3) Computational and Statistical Tools for Engineers PR: MATH 221, SO standing	●BAE 345 (2) Properties of Biological Materials PR: PHYS 213	▲Elective (3) Technical	ECE 519 (3) Electric Circuits for Engineers PR: PHYS 214	▲Elective (3) Technical	▲Elective (3) Technical
DEN 161 (1) Engineering Problem Solving PR/CO: MATH 150	*ENGL 100 (3) Expository Writing I KSC-1	*Elective (3) Arts and Humanities KSC-6	*ENGL 200 (3) Expository Writing II KSC-1 PR: ENGL 100	▲Elective (3) Technical	▲Elective (3) Technical	▲Elective (3) Technical	*Elective (3) Social and Behavioral Sciences KSC-5
*COMM 106 (3) Public Speaking KSC-2			IMSE 530 (2) Engineering Economic Analysis PR: MATH 220	▲Elective (3) Technical	▲Elective (3) Technical	*Elective (3) Institutional KSC-7	*Elective (3) Arts and Humanities KSC-6
*Elective (3) Social and Behavioral Sciences KSC-5				▲Elective (2) Technical	▲Elective (3) Technical		*Elective (3) Institutional KSC-7
BAE 020 (0) (16 credit hours)	BAE 020 (0) (15 credit hours)	BAE 020 (0) (15 credit hours)	BAE 020 (0) (16 credit hours)	BAE 020 (0) (17 credit hours)	BAE 020 (0) (16 credit hours)	BAE 020 (0) (15 credit hours)	BAE 020 (0) (16 credit hours)

KEY

■ = Prerequisite for another course PR = Prerequisite requirement PR/CO = Prerequisite or concurrent requirement
 * = K-State Core (KSC) course ▲ = See department approved electives ● = Only offered in the semester shown

Biological Systems Engineering Curriculum Notes

Students who satisfy all or part of K-State Core Institutional Electives (KSC-7) with courses that satisfy other degree requirements may use additional unrestricted electives to meet the degree requirement of 126 credit hours.

Track Electives

Track electives are to be chosen from an approved departmental list of courses. Three of the 6 credit hours must be engineering courses.

Additional information is available at
bae.k-state.edu/academics/undergraduate/bse/bse-track-electives.pdf.

K-State Core

The K-State Core (KSC) is the university's version of the systemwide general education framework established by the Kansas Board of Regents.

KSC requirement 1 – English (6 hours)

KSC requirement 2 – Communications (3 hours)

KSC requirement 3 – Math and Statistics (3 hours)

KSC requirement 4 – Natural and Physical Sciences (4-5 hours)

KSC requirement 5* – Social and Behavioral Sciences (6 hours)

KSC requirement 6* – Arts and Humanities (6 hours)

KSC requirement 7 – Institutional Electives (6 hours)

To view course lists for each requirement, visit k-state.edu/provost/kstate-core.

**Requires two courses from two different subject areas.*