Biomedical Engineering

YEAR 1

FALL

- MATH 220 (4)
  Analytic Geometry and Calculus I
  KSC-3

- CHM 210 (4)
  Chemistry I
  PR: CHM 210

- ENG 160 (1)
  College of Engineering Orientation

SPRING

- MATH 221 (4)
  Analytic Geometry and Calculus II
  PR: MATH 220 ≥ C

- CHM 230 (4)
  Chemistry II
  PR: CHM 210

- BME 200 (3)
  Introduction to Biomedical Engineering
  PR/CO: MATH 150

YEAR 2

FALL

- MATH 340 (4)
  Elementary Differential Equations
  PR: MATH 221 ≥ C

- BME 390 (2)
  Skill Development Experience
  PR: CHM 210, BME 200

- BIOL 198 (4)
  Principles of Biology
  PR: MATH 222 ≥ C

- CHM 531 (3)
  Organic Chemistry I
  PR: CHM 230 or CHM 250

SPRING

- MATH 222 (4)
  Analytic Geometry and Calculus III
  PR: MATH 221 ≥ C

- BIOL 441 (4)
  Human Body I
  PR: BIOL 198, CHM 230

- ECE 519 (3)
  Electric Circuits for Engineers
  PR: MATH 221 ≥ C

- ENG 212 (2)
  Introduction to Electrical and Computer Engineering
  PR/CO: MATH 205 or 220

YEAR 3

FALL

- BME 430 (3)
  Biomaterials
  PR: BIOL 198, CHM 230

- BIOL 442 (4)
  Human Body II
  PR: BIOL 441 ≥ C

- ECE 450 (3)
  Applied Scientific Computing for Engineers
  PR: ECE 214, BME 200

SPRING

- ECE 540 (3)
  Undergraduate BME Design Experience
  PR/CO: BIOL 441 or ENGL 200

- CHE 320 (3)
  Chemical Process Analysis
  PR: CHM 210, MATH 220

YEAR 4

FALL

- BME 590 (3)
  Senior Design Experience I
  PR: ECE 410 or 519, MATH 340, ECE 540

- BME 591 (2)
  Senior Design Experience II
  PR: BME 401, ECE 540, and ENGL 200

SPRING

- BME 575 (3)
  Clinical Systems Engineering
  PR: ECE 540

- BME 674 (3)
  Medical Imaging
  PR: ECE 512

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Biomedical Engineering Curriculum Notes

For the good and benefit of the student and their future employer, the ECE department enforces a C-prerequisite policy for all courses listed by number in the curriculum and for any in-major technical elective course applied toward the degree. A grade of C or better must be earned in all prerequisites to such a course before enrolling in that course.

Technical Electives
Emphasis electives must come from lists of approved courses.

No more than 12 credit hours of courses in electrical engineering, computer engineering, or biomedical engineering may be transferred to Kansas State University for credit toward a bachelor’s degree in biomedical engineering. Further, those courses selected for transfer credit must be equivalent to courses in the list below and must be such that the prerequisites for the listed course are also satisfied. Any courses transferred must be taken from ABET accredited programs: ECE 241, ECE 512, ECE 519, ECE 540, ECE 772, ECE 773, BME 200, BME 390, BME 430, BME 470, BME 490, BME 491, BME 575, BME 590, BME 591, BME 674.

Students who participate in exchange programs or transfer in from outside the United States may request waivers of this policy. Waivers must be obtained in advance of the exchange semester.

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.