### Electrical Engineering (Bioengineering)

#### YEAR 1

**FALL**
- MATH 220 (4) Analytic Geometry and Calculus I
  - KSC-3
- CHM 210 (4) Chemistry I
- CIS 209 (3) Computer Programming for Engineers
  - PR: MATH 220 ≥ C
- ENGL 100 (3) Expository Writing I
  - KSC-1
- COMM 106 (3) Public Speaking
  - KSC-2
- *Elective (3)*

**SPRING**
- MATH 221 (4) Analytic Geometry and Calculus II
  - PR: MATH 220 ≥ C
- PHYS 213 (5) Engineering Physics I
  - KSC-4
- ENGL 200 (3) Expository Writing II
  - KSC-1
- *Elective (3)*

#### YEAR 2

**FALL**
- MATH 340 (4) Elementary Differential Equations
  - PR: MATH 221 ≥ C
- PHYS 214 (5) Engineering Physics II
  - PR: MATH 221
- MATH 511 (4) Circuit Theory I
  - PR: MATH 222
  - PR: MATH 340, ECE 410
- *Elective (3)*

**SPRING**
- MATH 222 (4) Analytic Geometry and Calculus III
  - PR: MATH 221 ≥ C
- PHYS 511 (4) Circuit Theory II
  - PR: MATH 340, ECE 410
- ECE 431 (3) Microcontrollers
  - PR: ECE 241, CIS 209
- *Elective (3)*

#### YEAR 3

**FALL**
- ECE 512 (3) Linear Systems
  - PR: ECE 410 or ECE 519, MATH 340
- PHYS 557 (4) Electromagnetic Theory I
  - PR: ECE 410, MATH 222, PHYS 214
- ECE 511 (3) Arts and Humanities
  - KSC-6
- *Elective (3)*

**SPRING**
- ECE 525 (3) Electronics I
  - PR: ECE 410 or ECE 519
- ECE 526 (3) Electronics II
  - PR: ECE 511, 525
- ECE 502 (2) Electronics Laboratory
  - PR: ECE 511, PR/CO: ECE 526
- *Elective (3)*

#### YEAR 4

**FALL**
- ECE 540 (3) Applied Scientific Computing for Engineers
  - PR: STAT 510 and CIS 209 or CIS 200
- ECE 590 (3) Senior Design Experience I
  - PR: ECE 502, ECE 519, ECE 540, MATH 340
- ECE 772 (2) Theory and Techniques of Bioinstrumentation
  - CO: ECE 773
- *Elective (3)*

**SPRING**
- ECE 530 (3) Control Systems Design
  - PR: MATH 340, ECE 512
- ECE 647 (3) Digital Signal Processing
  - PR: ECE 512 ≥ C
- *Elective (3)*

### Course Descriptions

- **MATH 220**: Analytic Geometry and Calculus I
- **MATH 221**: Analytic Geometry and Calculus II
- **MATH 340**: Elementary Differential Equations
- **MATH 222**: Analytic Geometry and Calculus III
- **CHM 210**: Chemistry I
- **CIS 209**: Computer Programming for Engineers
- **ENGL 100**: Expository Writing I
- **ENGL 200**: Expository Writing II
- **COMM 106**: Public Speaking
- **DEN 160**: College of Engineering Orientation
- **DEN 161**: Engineering Problem Solving
- **KSC-1**: K-State Core (KSC) course
- **KSC-2**: K-State Core (KSC) course
- **KSC-3**: K-State Core (KSC) course
- **KSC-4**: K-State Core (KSC) course
- **KSC-5**: K-State Core (KSC) course
- **KSC-6**: K-State Core (KSC) course
- **KSC-7**: K-State Core (KSC) course

*Degree map is for advising purposes only. Students are responsible for complying with University Catalog requirements.*
Electrical Engineering Curriculum Notes

Students pursuing a B.S. in electrical engineering degree are required to complete one of the subplan options. These options include bioengineering, electronics and communications, and power systems.

For the good and benefit of the student and their future employer, the ECE department enforces a C-prerequisite policy for ECE or BME all courses listed by number in the curriculum and for any in-major ECE or BME 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
Technical electives must be selected to complete one of the option areas.

See list of option areas and required electives at ece.k-state.edu/academics/undergraduate/electrical-engineering/specialization/.

No more than 12 credit hours of courses with prefix ECE may be transferred to Kansas State University for credit toward a bachelor’s degree in either electrical engineering or computer 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 210, ECE 241, ECE 410, ECE 525, ECE 557, ECE 581.

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.