Mechanical Engineering *(Nuclear Engineering Option)*

125 credit hours total

YEAR 1

FALL

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

CHM 210 (4)
Chemistry I

ME 212 (2)
Engineering Graphics
PR/CO: MATH 205 or 220

DEN 160 (1)
College of Engineering Orientation

DEN 161 (1)
Engineering Problem Solving
PR/CO: MATH 150

***ENGL 100 (3)**
Expository Writing I
KSC-1

(15 credit hours)

SPRING

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

***PHYS 213 (5)**
Engineering Physics I
KSC-4
PR/CO: MATH 220

CHE 354 (1)
Basic Concepts in Materials Science and Engineering
(5-week class)
PR: CHM 210, PR/CO: PHYS 213

CHE 355 (1)
Fundamentals of Mechanical Properties
(5-week class)
PR: CHE 354

***COMM 106 (3)**
Public Speaking
KSC-2

***ENGL 200 (3)**
Expository Writing II
KSC-1
PR: ENGL 100

(17 credit hours)

YEAR 2

FALL

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

***PHYS 214 (5)**
Engineering Physics II
PR: PHYS 213
PR/CO: MATH 221

CE 333 (3)
Statics
PR: MATH 221, PHYS 213

IMSE 250 (2)
Introduction to Manufacturing Processes and Systems
PR/CO: MATH 220

NE 495 (3)
Elements of Nuclear Engineering
PR: MATH 221, PHYS 213

(17 credit hours)

SPRING

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

MATH 551 (3)
Applied Matrix Theory
PR: MATH 220

ME 512 (3)
Dynamics
PR: CE 333, PR/CO: MATH 340

ME 513 (3)
Thermodynamics I
PR: MATH 221, PHYS 213

ME 400 (3)
Computer Applications in Mechanical Engineering
PR/CO: MATH 340

(16 credit hours)

YEAR 3

FALL

CE 533 (3)
Mechanics of Materials
PR/CO: MATH 221
PR: CE 333 ≥ C or 530 ≥ C

ECE 519 (3)
Electric Circuits for Engineers
PR: PHYS 214

OR

ME 519 (3)
Electrical Circuits for Mechanical and Nuclear Engineering
PR: PHYS 214, MATH 340, MATH 551

ME 571 (3)
Fluid Mechanics
PR: ME 512 or CE 530, MATH 222
PR/CO: ME 513 or ME 310

NE 690 (3)
Radiation Protection and Shielding
PR: NE 495, PHYS 214, MATH 340

***Elective (3)**
Institutional
KSC-7

(15 credit hours)

SPRING

ME 533 (3)
Machine Design I
PR: ME 212, ME 512, CE 533

***Elective (3)**
Institutional
KSC-7

ME 570 (4)
Control of Mechanical Systems I
PR: MATH 340, ME 400, ME 512
PR/CO: ME 535

IMSE 530 (2)
Engineering Economic Analysis
PR: MATH 220

NE 612 (3)
Principles of Radiation Detection
PR: NE 495

(15 credit hours)

YEAR 4

FALL

ME 574 (3)
Interdisciplinary Industrial Design Projects I
PR: ME 533, ME 535, ME 571
PR/CO: ENGL 200

ME 573 (3)
Heat Transfer
PR: MATH 340, ME 400, ME 571

***Elective (3)**
Social and Behavioral Sciences
KSC-5

***Elective (3)**
Social and Behavioral Sciences
KSC-5

NE 630 (3)
Nuclear Reactor Theory
PR: NE 495, MATH 340

(15 credit hours)

SPRING

ME 575 (3)
Interdisciplinary Industrial Design Projects II
PR/CO: ME 574

***Elective (3)**
Arts and Humanities
KSC-6

***Elective (3)**
Arts and Humanities
KSC-6

▲Elective (3)
Restricted

NE 648 (3)
Nuclear Reactor Laboratory
PR: NE 630, NE 612

(15 credit hours)

KANSAS STATE UNIVERSITY | Carl R. Ice College of Engineering

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

Degree map is for advising purposes only. Students are responsible for complying with University Catalog requirements.

Mechanical Engineering Curriculum Notes

- To graduate with a Bachelor of Science in mechanical engineering, students must have a ≥ 2.200 GPA in all ME/NE classes ≥ 400 level taken for undergraduate credit at Kansas State University. Course grades that have been removed by the K-State Retake policy will not apply to this GPA calculation.

- Before taking classes at another college/university, students should confirm that the courses they wish to take will be accepted in transfer.

Technical Electives

Technical Elective Lists and **Nuclear Engineering Option** information can be found at **mne.k-state.edu/student-success/advising**.

To pursue a minor, please contact your advisor for more information.

FINAN 450 Principles of Finance (3 credit hours) can substitute for IMSE 530 Engineering Economic Analysis (2 credit hours) only for students who successfully complete the Business Minor.

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.*