

# Mechanical Engineering *(Nuclear Engineering Option)*

125 credit hours total

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
<b>*MATH 220 (4)</b> Analytic Geometry and Calculus I KSC-3	<b>*MATH 221 (4)</b> Analytic Geometry and Calculus II KSC-7 PR: MATH 220 ≥ C	<b>MATH 222 (4)</b> Analytic Geometry and Calculus III PR: MATH 221 ≥ C	<b>MATH 340 (4)</b> Elementary Differential Equations PR: MATH 221 ≥ C	<b>CE 533 (3)</b> Mechanics of Materials PR/CO: MATH 221 PR: CE 333 ≥ C or 530 ≥ C	<b>ME 533 (3)</b> Machine Design I PR: ME 212, ME 512, CE 533	<b>ME 574 (3)</b> Interdisciplinary Industrial Design Projects I PR: ME 533, ME 535, ME 571 PR/CO: ENGL 200	<b>ME 575 (3)</b> Interdisciplinary Industrial Design Projects II PR/CO: ME 574
<b>CHM 210 (4)</b> Chemistry I	<b>*PHYS 213 (5)</b> Engineering Physics I KSC-4 PR/CO: MATH 220	<b>*PHYS 214 (5)</b> Engineering Physics II KSC-7 PR: PHYS 213 PR/CO: MATH 221	<b>MATH 551 (3)</b> Applied Matrix Theory PR: MATH 220	<b>ECE 519 (3)</b> Electric Circuits for Engineers PR: PHYS 214	<b>ME 535 (3)</b> Measurement and Instrumentation Laboratory PR: ME 513 and ECE 519 or ME 519	<b>ME 573 (3)</b> Heat Transfer PR: MATH 340, ME 400, ME 571	<b>*Elective (3)</b> Arts and Humanities KSC-6
<b>ME 212 (2)</b> Engineering Graphics PR/CO: MATH 205 or 220	<b>CHE 354 (1)</b> Basic Concepts in Materials Science and Engineering (5-week class) PR: CHM 210, PR/CO: PHYS 213	<b>CE 333 (3)</b> Statics PR: MATH 221, PHYS 213	<b>ME 512 (3)</b> Dynamics PR: CE 333, PR/CO: MATH 340	<b>OR</b>	<b>ME 570 (4)</b> Control of Mechanical Systems I PR: MATH 340, ME 400, ME 512 PR/CO: ME 535	<b>*Elective (3)</b> Social and Behavioral Sciences KSC-5	<b>*Elective (3)</b> Arts and Humanities KSC-6
<b>DEN 160 (1)</b> College of Engineering Orientation	<b>CHE 355 (1)</b> Fundamentals of Mechanical Properties (5-week class) PR: CHE 354	<b>IMSE 250 (2)</b> Introduction to Manufacturing Processes and Systems PR/CO: MATH 220	<b>ME 513 (3)</b> Thermodynamics I PR: MATH 221, PHYS 213	<b>ME 571 (3)</b> Fluid Mechanics PR: ME 512 PR/CO: ME 513	<b>IMSE 530 (2)</b> Engineering Economic Analysis PR: MATH 220	<b>*Elective (3)</b> Social and Behavioral Sciences KSC-5	<b>NE 648 (3)</b> Nuclear Reactor Laboratory PR: NE 630, NE 612
<b>DEN 161 (1)</b> Engineering Problem Solving PR/CO: MATH 150	<b>*COMM 106 (3)</b> Public Speaking KSC-2	<b>NE 495 (3)</b> Elements of Nuclear Engineering PR: MATH 221, PHYS 213	<b>▲ Elective (3)</b> Restricted	<b>NE 690 (3)</b> Radiation Protection and Shielding PR: NE 495, PHYS 214, MATH 340	<b>NE 612 (3)</b> Principles of Radiation Detection PR: NE 495	<b>NE 630 (3)</b> Nuclear Reactor Theory PR: NE 495, MATH 340	<b>▲ Elective (3)</b> Nuclear Engineering Option
<b>*ENGL 100 (3)</b> Expository Writing I KSC-1	<b>*ENGL 200 (3)</b> Expository Writing II KSC-1 PR: ENGL 100			<b>ME 400 (3)</b> Computer Applications in Mechanical Engineering PR/CO: MATH 340			

(15 credit hours)

(17 credit hours)

(17 credit hours)

(16 credit hours)



(15 credit hours)

(15 credit hours)

(15 credit hours)

(15 credit hours)

## KEY

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

# Mechanical Engineering Curriculum Notes

- To graduate with a Bachelor of Science in mechanical engineering, students must have a  $\geq 2.200$  GPA in all ME/NE classes  $\geq 400$  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.
- Currently admitted students will only be allowed to transfer in one ME/NE numbered course as required by the curriculum; however, ME 533, ME 574, ME 575 and ME 573 must be taken within the MNE department.
- Currently admitted students will be allowed to transfer one of the three required MNE technical electives with the exception of the  $\geq 600$  level MNE technical elective.

## Technical Electives

Mechanical engineering students can pursue a formal option in nuclear engineering or a mechanical engineering subplan in one the following specialization areas:

- Advanced systems
- Engineering mechanics and materials
- Mechatronics systems
- Thermal and fluids systems

Technical Elective Lists, Mechanical Engineering Specialization Areas and **Nuclear Engineering Option** information can be found at [mne.k-state.edu/student-success/advising](http://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](http://k-state.edu/provost/kstate-core).

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