

# Industrial Engineering

120 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 PR: MATH 220 ≥C	<b>MATH 222 (4)</b> Analytic Geometry and Calculus III PR: MATH 221 ≥C	<b>MATH 551 (3)</b> Applied Matrix Theory PR: MATH 220	<b>●IMSE 560 (3)</b> Introduction to Operations Research I PR: MATH 222, MATH 551	<b>●IMSE 660 (3)</b> Operations Research II PR: IMSE 560, STAT 510	<b>●IMSE 633 (3)</b> Production Planning and Inventory Control PR: IMSE 250, PR/CO: IMSE 560	<b>●IMSE 685 (3)</b> Principles of Manufacturing Information Systems PR: Comp. Programming Elective, PR/CO: IMSE 633
<b>CHM 210 (4)</b> Chemistry I	<b>ME 212 (2)</b> Engineering Graphics PR/CO: MATH 220	<b>*PHYS 213 (5)</b> Engineering Physics I KSC-4 PR/CO: MATH 221	<b>PHYS 214 (5)</b> Engineering Physics II PR: MATH 221, PHYS 213	<b>●IMSE 541 (3)</b> Statistical Quality Control PR: Data Analytics Elective	<b>●IMSE 555 (3)</b> Industrial Facilities Layout and Design PR: IMSE 251, PR/CO: IMSE 530	<b>IMSE 643 (3)</b> Industrial Simulation PR: Comp. Programming Elective, PR/CO: IMSE 660, Data Analytics Elective	<b>▲Elective (3)</b> IMSE
<b>DEN 160 (1)</b> College of Engineering Orientation	<b>▲Elective (3)</b> Computer Programming PR: MATH 220	<b>STAT 510 (3)</b> Introductory Probability and Statistics I PR: MATH 221	<b>▲Elective (3)</b> Data Analytics PR: STAT 510	<b>●IMSE 623 (3)</b> Industrial Ergonomics PR: STAT 510	<b>●IMSE 050 (0)</b> Industrial Plant Studies PR: JR standing IE	<b>●IMSE 580 (4)</b> Manufacturing Systems Design and Analysis PR/CO: IMSE 541, 555, 633, 660	<b>*Elective (3)</b> Arts and Humanities KSC-6
<b>*ENGL 100 (3)</b> Expository Writing I KSC-1	<b>*ENGL 200 (3)</b> Expository Writing II KSC-1 PR: ENGL 100	<b>●IMSE 201 (3)</b> Introduction of Industrial Engineering PR/CO: MATH 220	<b>IMSE 250 (2)</b> Introduction to Manufacturing Processes and Systems PR/CO: MATH 220	<b>IMSE 530 (2)</b> Engineering Economic Analysis PR: MATH 220	<b>*Elective (3)</b> Institutional KSC-7	<b>▲Elective (3)</b> IMSE	<b>*Elective (3)</b> Arts and Humanities KSC-6
<b>*COMM 106 (3)</b> Public Speaking KSC-2	<b>Elective (3)</b> Social and Behavioral Science KSC-5	<b>●IMSE 251 (1)</b> Manufacturing Processes Laboratory PR/CO: IMSE 250	<b>IMSE 251 (1)</b> Manufacturing Processes Laboratory PR/CO: IMSE 250	<b>IMSE 532 (1)</b> Industrial Project Evaluation PR/CO: IMSE 530	<b>*Elective (3)</b> Social and Behavioral Sciences KSC-5	<b>▲Elective (3)</b> IMSE	<b>*Elective (3)</b> Institutional KSC-7
<b>IMSE 015 (0)</b> (15 credit hours)	<b>IMSE 015 (0)</b> (15 credit hours)	<b>IMSE 015 (0)</b> (15 credit hours)	<b>IMSE 015 (0)</b> (17 credit hours)	<b>IMSE 015 (0)</b> (15 credit hours)	<b>IMSE 015 (0)</b> (15 credit hours)	<b>IMSE 015 (0)</b> (13 credit hours)	<b>IMSE 015 (0)</b> (15 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

# Industrial Engineering Curriculum Notes

- The Industrial Engineering Approved Elective Lists and Requirements can be located here : [imse.k-state.edu/academics/undergraduate/degree-requirements/](https://imse.k-state.edu/academics/undergraduate/degree-requirements/)
  - **Analytics Elective:** Choose one course from the approved department elective list.
  - **Computer Programming Elective:** Choose one course from the approved department elective list.
  - **Engineering Electives:** Choose 6 hours from the approved departmental list.
  - **IMSE Electives:** Choose 6 hours of IMSE courses from the IMSE department.
- **Substitutions:** IMSE 591 and IMSE 592 can substitute for IMSE 580
- **IMSE Graduation Criterion:** To graduate with a Bachelor of Science in industrial engineering, students must have a  $\geq 2.200$  GPA in all IMSE classes 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.
- **IMSE Course Retake Criterion:** Any IMSE course being taken for a third time in any five-year period may not be used to fulfill a student's B.S.I.E. graduation requirements.
- **IMSE Assembly Requirement:** Each semester a student must enroll in IMSE 015 unless he/she is a concurrent B.S./M.S.I.E. student, in which case he/she must enroll in either IMSE 015 or IMSE 892.

## 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](https://k-state.edu/provost/kstate-core).

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