Industrial Engineering

120 credit hours total

YEAR 1

FALL

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

CHM 210 (4)
Chemistry I

DEN 160 (1)
College of Engineering Orientation

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

✳COMM 106 (3)
Public Speaking
KSC-2

IMSE 015 (0)

(15 credit hours)

SPRING

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

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

▲Elective (3)
Computer Programming
PR: MATH 220

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

Elective (3)
Social and Behavioral Sciences
KSC-5

IMSE 015 (0)

(15 credit hours)

YEAR 2

FALL

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

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

STAT 510 (3)
Introductory Probability and Statistics I
PR: MATH 221

●IMSE 201 (3)
Introduction of Industrial Engineering
PR/CO: MATH 220

IMSE 015 (0)

(15 credit hours)

SPRING

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

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

▲Elective (3)
Data Analytics
PR: STAT 510

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

IMSE 251 (1)
Manufacturing Processes Laboratory
PR/CO: IMSE 250

ACCTG 231 (3)
Accounting for Business Operations

IMSE 015 (0)

(17 credit hours)

YEAR 3

FALL

●IMSE 560 (3)
Introduction to Operations Research I
PR: MATH 222, MATH 551

●IMSE 541 (3)
Statistical Quality Control
PR: Data Analytics Elective

●IMSE 623 (3)
Industrial Ergonomics
PR: STAT 510

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

IMSE 532 (1)
Industrial Project Evaluation
PR/CO: IMSE 530

▲Elective (3)
Engineering

IMSE 015 (0)

(15 credit hours)

SPRING

●IMSE 660 (3)
Operations Research II
PR: IMSE 560, STAT 510

●IMSE 555 (3)
Industrial Facilities Layout and Design
PR: IMSE 251, PR/CO: IMSE 530

●IMSE 050 (0)
Industrial Plant Studies
PR: JR standing IE

✳Elective (3)
Institutional
KSC-7

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

▲Elective (3)
Engineering

IMSE 015 (0)

(15 credit hours)

YEAR 4

FALL

●IMSE 633 (3)
Production Planning and Inventory Control
PR: IMSE 250, PR/CO: IMSE 560

IMSE 643 (3)
Industrial Simulation
PR: Comp. Programming Elective, PR/CO: IMSE 660, Data Analytics Elective

●IMSE 580 (4)
Manufacturing Systems Design and Analysis
PR/CO: IMSE 541, 555, 633, 660

▲Elective (3)
IMSE

IMSE 015 (0)

(13 credit hours)

SPRING

●IMSE 685 (3)
Principles of Manufacturing Information Systems
PR: Comp. Programming Elective, PR/CO: IMSE 633

▲Elective (3)
IMSE

✳Elective (3)
Arts and Humanities
KSC-6

✳Elective (3)
Arts and Humanities
KSC-6

✳Elective (3)
Institutional
KSC-7

IMSE 015 (0)

(15 credit hours)

KEY
- ◨ = Prerequisite for another course
- ✳ = K-State Core (KSC) course
- PR = Prerequisite requirement
- ▲ = See department approved electives
- PR/CO = Prerequisite or concurrent requirement
- ● = Only offered in the semester shown

KANSAS STATE UNIVERSITY | Carl R. Ice College of Engineering

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

Industrial Engineering Curriculum Notes

- The Industrial Engineering Approved Elective Lists and Requirements can be located at **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 ≥ 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 the student 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**.

Requires two courses from two different subject areas.