

The Industrial Engineering Curriculum (link to flowchart:

https://engineering.umass.edu/sites/default/files/mie/undergrad/IE_FlowChartWnotes_10-14.pdf)

consists of 5 types of courses:

1. Core Industrial Engineering (IE):
 - a. Probability and Statistics – Mechanical and Industrial Engineering (MIE) 273
 - b. Engineering Economic Decision Making – MIE 353
 - c. Simulation – MIE 373
 - d. Manufacturing Processes – MIE 375
 - e. Operations Research I and II – MIE 379 and 380
 - f. Quality Control – MIE 422
 - g. Human Factors Engineering – MIE 460
 - h. Production Planning and Control – MIE 477
 - i. IE Senior Design – MIE 478
2. IE technical electives (select from approved courses in business, computer science, kinesiology, math, psychology, resource economics, or civil, electrical, industrial, and mechanical engineering);
3. General Engineering:
 - a. Introduction to Engineering – Engineering 110, 111, 112, or 113
 - b. Computer Programming – Computer Science 121 (Java) or MIE 124 (Matlab)
 - c. Engineering Mechanics – MIE 210 (Statics) and MIE 211 (Strength of Materials)
 - d. Material Science – MIE 201 (Introduction to Material Science)
 - e. Engineering Professionalism Seminar – MIE 395A
 - f. Technical Writing – Engineering 351
4. Technical foundations:
 - a. Mathematics – Math 131 (Calculus I), 132 (Calculus II), 233 (Vector Calculus), 235 (Linear Algebra), and 331 (Differential Equations)
 - b. Science – Physics 151 (Physics I), Physics 152 (Physics II), Chemistry 111 (Chemistry I)
 - c. Writing – English Writing Program 112
5. and General Education electives (link to <http://www.umass.edu/gened/>) required of all university students.