

Materials Engineering

2020-2021 Catalog

128 Total Credits

First Year

Semester 1

- 4 Chem 177 (General Chemistry I)
- 1 Chem 177L (Gen Chemistry I Lab)
- 3 Engr 150 (Critical Think & Comm)
- R Engr 101 (Engr Orientation)
- 3 Engr 160 (Engr Problem Solving)
- 4 Math 165 (Calculus I)
- 1 Lib 160 (Library)

16 Total Credits

Semester 2

- 3 Chem 178 (General Chemistry II)
- 1 Chem 178L (Gen Chemistry II Lab)
- 4 Math 166 (Calculus II)
- 3 Gen Ed Elective
- 3 Gen Ed Elective
- 3 US Diversity

17 Total Credits

Sophomore Year

Semester 3

- 4 Math 265 (Calculus III)
- 3 Mat E 215 (Intro to Matl Sci & Engr I)
- 1 Mat E 215L (Intro to MatE Lab)
- 5 Phys 221 (Physics I)
- 3 Engr 250 (WOVE Comp)

16 Total Credits

Semester 4

- 4 Math 267 (Differential Equations)
- 3 Mat E 214 (Structure of Materials)
- 3 Mat E 216 (Intro to Matl Sci & Engr II)
- 1 Mat E 216 L (Mat E lab II)
- 4 Phys 232 (Classical Physics II)
- 1 Phys 232L (Classical Physics II lab)

16 Total Credits

Junior Year

Semester 5

- 3 Mat E 311 (Thermo in Materials)
- 3 Mat E 317 (Electronic Properties)
- 3 Specialization
- 3 Materials Elective
- 3 Mat E 319 (Mechanics of Struc/Materials)

15 Total Credits

Semester 6

- 3 Mat E 314 (Kinetics/Phase Equil)
- 3 Stat 305 (Engr Statistics)
- R Mat E 301 (Mat E Prof. Planning)
- 3 Specialization
- 3 Technical Elective
- 3 International Perspective

15 Total Credits

Senior Year

Semester 7

- 3 Mat E 413 (Mat E Design I)
- 3 Technical Elective
- 3 Mat E 418 (Mech Behavior of Mat)
- 3 Materials Elective
- 3 Specialization
- 3 Technical Writing

18 Total Credits

Semester 8

- 3 Mat E 414 (Mat E Design II)
- 3 Specialization
- 3 Technical Elective
- 3 Free Elective
- 3 Technical Elective

15 Total Credits

Specialization Options:

Ceramic Materials: 321, 322, 425, 433

Metallic Materials: 341, 342, 443, 444

Polymeric Materials: 350, 351, 453, 454

Shading indicates Basic Program courses

Compiled from official ISU catalog 4-year plans (catalog.iastate.edu/undergraduatemajors-alpha/)