

# Curriculum in Materials Engineering

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## Freshman

| Fall   | Hours | Spring  | Hours |
|--|-------|---|-------|
| CHEM 1030 Fundamentals Chemistry I           |       | 3 CHEM 1040 Fundamental Chemistry II            | 3     |
| CHEM 1031 Fundamental Chemistry I Laboratory |       | 1 CHEM 1041 Fundamental Chemistry II Laboratory | 1     |
| MATH 1610 Calculus I                         |       | 4 MATH 1620 Calculus II                         | 4     |
| ENGL 1100 English Composition I              |       | 3 PHYS 1600 Engineering Physics I               | 4     |
| ENGR 1100 Engineering Orientation            |       | 0 ENGL 1120 English Composition II              | 3     |
| Core History <sup>1</sup>                    |       | 3   |       |
| ENGR 1110 Introduction to Engineering        |       | 2   |       |
|  |       | 16  | 15    |

## Sophomore

| Fall   | Hours | Spring  | Hours |
|--|-------|---|-------|
| MATH 2630 Calculus III   |       | 4 MATH 2650 Linear Differential Equations           | 3     |
| <b>MATL 2100 Introduction to Materials Science</b>               |       | 3 STAT 3010 Statistics for Engineers and Scientists | 3     |
| COMP 1200 Introduction to Computing for Engineers and Scientists |       | 2 ENGR 2070 Mechanics of Materials                  | 3     |
| ENGR 2050 Statics  |       | 3 ELEC 3810 Fundamentals of Electrical Engineering  | 3     |
| PHYS 1610 Engineering Physics II                                 |       | 4 ECON 2020 Principles of Microeconomics            | 3     |
|  |       | 16  | 15    |

## Junior

| Fall   | Hours | Spring   | Hours |
|--|-------|--|-------|
| MATH 2660 Topics in Linear Algebra                     |       | 3 ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer | 3     |
| PHIL 1020 Introduction to Ethics                       |       | 3 MECH 2220 Computer-Aided Engineering                               | 3     |
| <b>MATL 3100 Engineering Materials - Metals</b>        |       | 3 <b>MATL 3200 Engineering Materials Polymers</b>                    | 3     |
| <b>MATL 3101 Metallography Laboratory</b>              |       | 1 <b>MATL 3201 Polymer and Composites Laboratory</b>                 | 1     |
| <b>MATL 5200 Materials Characterization</b>            |       | 2 <b>MATL 3300 Engineering Materials - Ceramics</b>                  | 3     |
| <b>MATL 5201 Materials Characterization Laboratory</b> |       | 1 Technical Elective II <sup>2</sup>                                 | 3     |
| Technical Elective I <sup>2</sup>                      |       | 3  |       |
|  |       | 16   | 16    |

## Senior

| Fall  | Hours | Spring  | Hours |
|---|-------|---|-------|
| Core Literature   |       | 3 Core Fine Arts  | 3     |
| <b>MATL 4100 Thermodynamics and Kinetics of Materials</b> |       | 3 Core Social Science <sup>1</sup>                              | 3     |
| <b>MATL 4500 Materials Properties and Selection</b>       |       | 4 <b>MATL 4980 Senior Design Project</b>                        | 3     |
| <b>MATL 5400 Physics of Solids</b>                        |       | 3 <b>MATL 5500 Numerical Simulation of Materials Processing</b> | 3     |

|                                      |                              |    |
|--------------------------------------|------------------------------|----|
| Technical Electives III <sup>2</sup> | 3 UNIV 4AA0 Creed to Succeed | 0  |
|                                      | 16                           | 12 |

Total Hours: 122

- <sup>1</sup> The AU Bulletin lists the University Core Curriculum requirements for students in the College of Engineering. Students must complete a sequence in either Literature or History. Because of the discipline specific requirements for the Humanities courses, it is recommended that a History sequence be completed in the Social Sciences courses.
- <sup>2</sup> Technical elective are chosen from a list of coordinated cross-disciplinary sequences. Sequences other than those specified must be approved by the material engineering curriculum committee.