**CHEMICAL (POLYMERS/MATERIALS)**

### FIRST YEAR

#### FALL SEMESTER

- **GE A**
  - WRIT 150 4
- **MATH 125 (GE F)** 4
- **CHEM 105aL (GE E)** 4
- **ENGR 102** 2

#### SPRING SEMESTER

- **CHE 120**
  - MATH 126 or MATH 129 4
- **CHEM 105bL**
- **PHYS 151L (GE E)**
- **OPTIONAL ELECTIVE** 2

### SECOND YEAR

#### FALL SEMESTER

- **CHE 330**
- **CHEM 300L**
- **MATH 226 or MATH 229**
- **PHYS 152L**
- **CHE 350**
- **OPTIONAL ELECTIVE** 2

#### SPRING SEMESTER

- **GE B**
  - **CHEM 322aL**
- **MATH 245**
- **CHE 472**
- **CHE 442**
- **CHE 444aL**
- **CHE 443**
- **CHE 476**
- **CHE 480**

### THIRD YEAR

#### FALL SEMESTER

- **CHEM 430**
- **CHE 442**
- **CHE 472**
- **GE C**
- **OPTIONAL ELECTIVE** 1

#### SPRING SEMESTER

- **CHEMISTRY ELECTIVE**
- **CHEM 444aL**
- **CHE 443**
- **CHE 476 or MASC 310**
- **OPTIONAL ELECTIVE** 1

### FOURTH YEAR

#### FALL SEMESTER

- **GED**
  - **CHE 444bL**
- **CHE 445**
- **CHE 485**
  - **CHE 446L**
  - **CHE 460L**
  - **CHE 480**
- **POLYMER/MATERIALS SCI. ELECTIVE** 3
- **OPTIONAL ELECTIVE** 1

#### SPRING SEMESTER

- **GE C**
  - **CHE 446**
- **CHE 460L**
- **CHE 480**
- **POLYMER/MATERIALS SCI. ELECTIVE** 3
- **MASC 350L**
  - **CHEM 322bL or 431**

### MATHEMATICS (16 UNITS)

- **MATH 125**: Calculus I
- **MATH 126** or **MATH 129**: Calculus II
- **MATH 226** or **MATH 229**: Calculus III
- **MATH 243**: Mathematics of Phys. and Engr.

### PHYSICS (8 UNITS)

- **PHYS 151L**: Mechanics and Thermodynamics
- **PHYS 152L**: Electricity and Magnetism

### CHEMISTRY (24 UNITS)

- **CHEM 105AL**: General Chemistry
- **CHEM 105BL**: General Chemistry
- **CHEM 300L**: Analytical Chemistry
- **CHEM 322AL**: Organic Chemistry
- **CHEM 430**: Physical Chemistry: Thermodynamics & Kinetics
- **CHEMISTRY ELECTIVE**: CHEM 322bL or 431

### GENERAL EDUCATION (32 UNITS)

- **GE A** The Arts (1 Course)
- **GE B** Humanistic inquiry (2 Courses)
- **GE C** Social Analysis (2 Courses)
- **GE D** Life Sciences (1 Course)
- **GE E** Physical Sciences (1 Course)
- **GE F** Quantitative Reasoning (1 Course)
- **GE G,H** Global Perspectives (2 Courses)*
- **GESM** General Education Seminar (1 Course)*

### WRITING (7 UNITS)

- **WRIT 150**: Writing and Critical Reasoning
- **WRIT 340**: Advanced Writing

### ENGINEERING (57 UNITS)

- **CHE 120**: Intro. to Chemical Engineering
- **CHE 205**: Numerical Methods in Chemical Engineering
- **CHE 330**: Chemical Engr. Thermodynamics
- **CHE 350**: Intro. to Separation Processes
- **CHE 405**: Probability and Statistics for CHE or ISE 460: Engineering Economy
- **CHE 442**: Chemical Reactor Analysis
- **CHE 443**: Viscous Flow
- **CHE 444bL**: Chemical Engineering Lab
- **CHE 445**: Heat Transfer in CHE Processes
- **CHE 446**: Mass Transfer in CHE Processes
- **CHE 460L**: Chemical Process Dynamics
- **CHE 472**: Polymer Science & Engineering
- **CHE 476**: Chemical Engineering Materials or MASC 310: Materials Behavior and Processing
- **CHE 480**: Chem. Process and Plant Design
- **CHE 485**: Computer Aided Process Design
- **ENGR 102**: Engineering Freshman Academy
- **MASC 350L**: Nanomaterials: Design, Synthesis, and Processing

### POLYMER/MATERIALS ELECTIVES

* SPECIAL NOTES

Courses with this symbol may be satisfied with AP, IB or A-Level exams. See page 22 for more information.

**GE**: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 21 for more information and consult your advisor for detailed assistance.

**OPTIONAL ELECTIVES**: Consult with your academic advisor to explore optional elective courses. These courses are not required.

**POLYMER/MATERIALS ELECTIVES**: Select 9 units from BME 410, CHE 474L, 475, 477, 487, EE 438L, or MASC 440.