# CHEMICAL (POLYMERS/MATERIALS)

## FIRST YEAR
### FALL SEMESTER
- **GE A**
- **WRIT 150**
- **MATH 125 (GE F)**
- **CHEM 105aL (GE E)**
- **ENGR 102**

### SPRING SEMESTER
- **CHE 120 (MATH 125, CHEM 106L)**
- **CHE 205**
- **MATH 126 or MATH 129**
- **CHEM 105bL (GE E)**
- **PHYS 151L (GE E)**

## SECOND YEAR
### FALL SEMESTER
- **CHE 330**
- **CHEM 300L**
- **MATH 226 or MATH 229**
- **PHYS 152L**
- **OPTIONAL ELECTIVE**

### SPRING SEMESTER
- **CHEM 322aL**
- **CHEM 330**
- **MATH 245**
- **WRIT 340**
- **OPTIONAL ELECTIVE**

## THIRD YEAR
### FALL SEMESTER
- **POLYMER/MATERIALS SCI. ELECTIVE**
- **CHEM 430**
- **CHE 442**
- **CHE 472**
- **OPTIONAL ELECTIVE**

### SPRING SEMESTER
- **CHEMISTRY ELECTIVE**
- **CHEM 444aL**
- **CHEM 444**
- **CHE 476 or MASC 310**
- **OPTIONAL ELECTIVE**

## FOURTH YEAR
### FALL SEMESTER
- **GE D**
- **CHE 444bL**
- **CHE 445**
- **CHE 485**
- **POLYMER/MATERIALS SCI. ELECTIVE**

### SPRING SEMESTER
- **GE C**
- **CHE 446**
- **CHE 460L**
- **CHE 480**
- **POLYMER/MATERIALS SCI. ELECTIVE**

## 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 or BUAD 301: Technical Entrepreneurship
- **CHE 442**: Chemical Reactor Analysis
- **CHE 443**: Viscous Flow
- **CHE 444aL**: 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 483**: 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 17 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 pp. 16-17 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/MAT ELECTIVES**: Select 3 units from BME 410, CHE 474L, 475, 477, 487, EE 436L, or MASC 440.