### CHEMICAL (ENVIRONMENTAL)

#### FIRST YEAR

**FALL SEMESTER**
- **GE A**
- **WRIT 150**
- **MATH 125**
- **CHEM 105aL**
- **ENGR 102**

**SPRING SEMESTER**
- **CHEM 120**
- **MATH 126 or MATH 129**
- **PHYS 151L**
- **CHEM 105bL**
- **OPTIONAL ELECTIVE**

#### SECOND YEAR

**FALL SEMESTER**
- **CHEM 322aL**
- **MATH 245**
- **CHEM 430**
- **CHE 486 or CHE 450 or PTE 463L**
- **OPTIONAL ELECTIVE**

**SPRING SEMESTER**
- **CHE 442**
- **CHE 444bL**
- **CHE 447**
- **CHE 444cL**
- **OPTIONAL ELECTIVE**

#### THIRD YEAR

**FALL SEMESTER**
- **CHE 460L**
- **CHE 485**
- **CE 453**
- **CE 463L**
- **OPTIONAL ELECTIVE**

**SPRING SEMESTER**
- **CHE 480**
- **WRIT 340**
- **OPTIONAL ELECTIVE**

#### FOURTH YEAR

**FALL SEMESTER**
- **CHE 485**
- **CE 480**
- **CE 460L**
- **CE 485**
- **OPTIONAL ELECTIVE**

**SPRING SEMESTER**
- **OPTIONAL ELECTIVE**

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**MATHEMATICS (16 UNITS)**
- **MATH 125**: Calculus I
- **MATH 126 or MATH 129**: Calculus II
- **MATH 226 or MATH 229**: Calculus III
- **MATH 245**: Mathematics of Phys. and Engr.

**PHYSICS (8 UNITS)**
- **PHYS 151L**: Mechanics and Thermodynamics
- **PHYS 152L**: Electricity and Magnetism

**CHEMISTRY (16 UNITS)**
- **CHEM 105AL**: General Chemistry
- **CHEM 105BL**: General Chemistry
- **CHEM 322AL**: Organic Chemistry
- **CHEM 430**: Physical Chemistry: Thermodynamics & Kinetics

**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 (61 UNITS)**
- **CE 453**: Water Quality Control
- **CE 463L**: Water Chemistry and Analysis
- **CHE 120**: Intro. to Chemical Engineering
- **CHE 305**: Numerical & Statistical Analysis for Chemical Engineers
- **CHE 330**: Chemical Engr. Thermodynamics
- **CHE 350**: Intro. to Separation Processes
- **CHE 442**: Chemical Reactor Design
- **CHE 443**: Viscous Flow
- **CHE 444L**: Chem. Engineering Laboratory
- **CHE 447**: Heat and Mass Transfer in Chemical Engineering Processes
- **CHE 460L**: Chemical Process Dynamics & Control
- **CHE 480**: Chem. Process and Plant Design
- **CHE 485**: Computer Aided Chemical Process Design
- **CHE 486**: Design of Environ. Benign Plants
- **OR CHE 450**: Sustainable Energy
- **OR PTE 463L**: Introduction to Trans. Processes in Porous Media

**ENE 428 or 429**: Air Pollution Fundamentals
**OR ENE 429**: Air Pollution Control
**ENGR 102**: Engineering Freshman Academy

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**SPECIAL NOTES**

Courses with the AP/IB 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 page 21 for more information and consult your advisor for detailed assistance.