# Chemical (Environmental) Program

## First Year
### Fall Semester
- **GE A**
- **WRIT 150**
- **MATH 125 (GE E)**
- **CHEM 105aL (GE E)**
- **ENGR 102**

### Spring Semester
- **CHE 120**
- **CHE 205**
- **MATH 126 or MATH 129**
- **CHEM 105bL (GE E)**
- **PHYS 151L or 156 or 226**

## Second Year
### Fall Semester
- **CHE 330**
- **CHEM 300L**
- **MATH 226 or MATH 229**
- **PHYS 152L**
- **OPTIONAL ELECTIVE**

### Spring Semester
- **GE B**
- **CHEM 322aL**
- **MATH 245**
- **WRIT 340**
- **CHE 350**

## Third Year
### Fall Semester
- **GE C**
- **CHEM 430**
- **CE 453**
- **CHE 442**
- **PTE 463L**

### Spring Semester
- **GE B**
- **ENE 428L or 429**
- **CE 463L**
- **CHE 443**
- **CHE 444aL**

## Fourth Year
### Fall Semester
- **GE D**
- **CHE 405**
- **CHE 446L**
- **CHE 485**
- **CHE 445**

### Spring Semester
- **GE C**
- **CHE 446**
- **CHE 460L**
- **CHE 480**
- **CHE 486**

## 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 (20 units)
- **CHEM 105aL**: General Chemistry
- **CHEM 105bL**: General Chemistry
- **CHEM 300L**: Analytical 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 (63 units)
- **CE 453**: Water Quality Control
- **CE 463L**: Water Chemistry and Analysis
- **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**: Prob. and Stats. for Chem. Engr.
- **CHE 442**: Chemical Reaction Analysis
- **CHE 443**: Viscous Flow
- **CHE 444AL**: Chem. Engineering Laboratory
- **CHE 444B**: Chem. Engineering Laboratory
- **CHE 445**: Heat Transfer in CHE Processes
- **CHE 446**: Mass Transfer in CHE Processes
- **CHE 460L**: Chemical Process Dynamics
- **CHE 476**: Chemical Engineering Materials
- **CHE 480**: Chem. Process and Plant Design
- **CHE 485**: Computer Aided Process Design
- **CHE 488L**: Design of Environ. Benign Plants
- **ENE 428L**: Air Pollution Fundamentals
- **ENE 429L**: Air Pollution Control
- **ENGR 102**: Engineering Freshman Academy

## 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 C 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 academic advisor for detailed assistance.
- Optional Electives: Consult with your academic advisor to explore optional elective courses. These courses are not required.

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