# 2016-17 Suggested Course Plan

## CHEMICAL ENGINEERING

### FIRST YEAR

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<td>MATH 125</td>
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<tr>
<td>CHEM 105aL</td>
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<td>ENGR 102</td>
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### SECOND YEAR

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<td>MATH 245</td>
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### FOURTH YEAR

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<tr>
<td>CHEMISTRY ELECTIVE</td>
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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 (9 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)*

### GENERAL EDUCATION SEMINAR (1 Course)*

### ADVANCED WRITING (7 UNITS)

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

### ENGINEERING (54-57 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
- CHE 442: Chemical Reactor Analysis
- CHE 443: Viscous Flow
- CHE 444AL: Chemical Engineering Lab
- CHE 444BL: Chemical Engineering Lab
- CHE 445: Heat Transfer in CHE Processes
- CHE 446: Mass Transfer in CHE Processes
- CHE 460L: Chem. Proc. Dynamics & Control
- CHE 476: Chemical Engineering Materials
- CHE 480: Chem. Process and Plant Design
- CHE 485: Computer Aided Process Design
- ENGR 102: Engineering Freshman Academy

### APPROVED ELECTIVES

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 academic advisor.

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

**TECHNICAL ELECTIVE:** Any upper-division CHE course that is not already required.

**APPROVED ELECTIVES:** 8-9 units of approved electives including CE 205 (2), EE 438L (3), and IE 480 (3) or BUAD 301 (3) or other courses with department approval.
## CHEMICAL (BIOCHEMICAL)

### FIRST YEAR

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

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

### SECOND YEAR

#### FALL SEMESTER
- **CHE 330** (GE C)
- **CHEM 300L**
- **MATH 226 or MATH 229**
- **PHYS 152L**
- **OPTIONAL ELECTIVE**

#### SPRING SEMESTER
- **GE B**
- **WRIT 340** (WRIT 150)
- **MATH 245**
- **CHEM 322aL**
- **CHE 350** (CHEM 105bL)

### THIRD YEAR

#### FALL SEMESTER
- **GE C**
- **BISC 320L (GE D)**
- **CHEM 430**
- **CHE 442**
- **OPTIONAL ELECTIVE**

#### SPRING SEMESTER
- **GE B**
- **BISC 330L**
- **BISC 300L**
- **CHE 443**
- **CHE 444aL**

### FOURTH YEAR

#### FALL SEMESTER
- **BIOELECTIVE**
- **CHE 444bL**
- **CHE 405 or ISE 460**
- **CHE 485**
- **CHE 445**
- **OPTIONAL ELECTIVE**

#### SPRING SEMESTER
- **GE C**
- **CHE 446**
- **CHE 460L**
- **CHE 480**
- **CHE 489**
- **BME 410**

### MATHEMATICS (18 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 Engineering
- **CHEM 300L**: Analytical Chemistry
- **CHEM 322aL**: Organic Chemistry
- **CHEM 430**: Physical Chemistry: Thermodynamics & Kinetics

### BIOLOGY (12 UNITS)
- **BISC 300L**: Intro. to Microbiology
- **BISC 320L**: Molecular Biology
- **BISC 330L**: Biochemistry

### 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)

### WRITING (7 UNITS)
- **WRIT 150**: Writing and Critical Reasoning
- **WRIT 340**: Advanced Writing

### ENGINEERING (15-52 UNITS)
- **BME 410**: Intro. to Biomaterials
- **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**: Applications of Probability & Statistics for Chemical Engineers or ISE 460: Engineering Economy
- **CHE 442**: Chemical Reactor Analysis
- **CHE 443**: Viscous Flow
- **CHE 444aB**: Chem. Engineering Laboratory
- **CHE 445**: Mass Transfer in CHE Processes
- **CHE 446**: Heat Transfer in CHE Processes
- **CHE 460L**: Chemical Process Dynamics
- **CHE 480**: Chem. Process and Plant Design
- **CHE 485**: Computer-Aided Plant Design
- **CHE 489**: Biochemical Engineering
- **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 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 academic advisor to explore optional elective courses. These courses are not required. Consult with your academic advisor for detailed assistance.

**BIOELECTIVE**: Approved Bioengineering course or BISC 403

**BISC 403**: Must have 48 engineering units in order to register for this class.
# A Suggested Course Plan for: Chemical (Environmental)

## First Year

### Fall Semester

<table>
<thead>
<tr>
<th>GE A</th>
<th>WRIT 150</th>
<th>MATH 125 (GE F)</th>
<th>CHEM 105aL (GE E)</th>
<th>ENGR 102</th>
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<th>CHEM 205 (MATH 125)</th>
<th>MATH 126 or MATH 129</th>
<th>CHEM 105bL (CHEM 105aL)</th>
<th>PHYS 151L (CHEM 105aL)</th>
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### Spring Semester

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<th>MATH 126 or MATH 129</th>
<th>CHEM 105bL (CHEM 105aL)</th>
<th>PHYS 151L (CHEM 105aL)</th>
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## Second Year

### Fall Semester

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<th>MATH 226 or MATH 229</th>
<th>PHYS 152L (CHEM 105aL, MATH 226)</th>
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<th>WRIT 340</th>
<th>CHEM 350 (CHEM 105bL)</th>
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### Spring Semester

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<th>MATH 226 or MATH 229</th>
<th>PHYS 152L (CHEM 105aL, MATH 226)</th>
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## Third Year

### Fall Semester

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### Spring Semester

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## Fourth Year

### Fall Semester

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### Writing (7 Units)

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

### Mathematics (18 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 430L: 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)*

## Optional Electives

- ISE 460: Engineering Economy
- BUAD 301: Technical Entrepreneurship
- PTE 463L: Trans. Processes in Porous Media

* 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 academic advisor for detailed assistance.

Optional Electives: Consult with your academic advisor to explore optional elective courses. These courses are not required.
# A Suggested Course Plan for:  
**Chemical (Nanotechnology)**

## First Year

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<th>Courses</th>
<th>Units</th>
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<tr>
<td><strong>Fall Semester</strong></td>
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<td>CHE 491</td>
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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 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
- CHEM 453: Advanced Inorganic Chemistry

## General Education (32 Units)
- GE A: The Arts (1 Course)
- GE B: Humankind 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)*
- GESEM: General Education Seminar (1 Course)*

## Writing (7 Units)
- WRIT 150: Writing and Critical Reasoning
- WRIT 340: Advanced Writing

## Engineering (54 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 391: Intro to Nanotechnology Research
- CHE 405: Applications of Prob. & Stats. for ChE or ISE 460: Engineering Economy or BUAD 301: Technical Entrepreneurship
- CHE 442: Chemical Reactor Analysis
- CHE 443: Viscous Flows
- CHEM 444ABL: Chemical Engineering Lab
- CHE 445: Heat Transfer in CHE Processes
- CHE 446: Mass Transfer in CHE Processes
- CHEM 460L: Chemical Process Dynamics & Control
- CHEM 480: Chem. Process and Plant Design
- CHEM 485: Comp.-Aided Chemical Process Design
- CHEM 487: Nanotech and Nanoscale Engineering
- CHEM 491: Nanotech Research for Undergrads
- 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 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 satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. 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.
- Nanotech. Elective: EE/MASC 438L, CHE 489, or CHE/PTE 493L.
- CHE 391, 491: Technical electives may be taken in place of these courses. Contact the department for approved courses.
**GENERAL EDUCATION (32 UNITS)**

| GE  | A: The Arts (1 Course) | B: Humanistic Inquiry (2 Courses) | C: Social Analysis (2 Courses) | D: Life Sciences (1 Course) | E: Physical Sciences (1 Course) | F: Quantitative Reasoning (1 Course) | General Education Seminar (1 Course)* |

**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 (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 |

**ENGLISH (7 UNITS)**

| WRIT 150: Writing and Critical Reasoning | WRIT 340: Advanced Writing |

**ENGINEERING (60 UNITS)**


**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 academic advisor for detailed assistance.

OPTIONAL ELECTIVES: Consult with your academic advisor to explore optional elective courses. These courses are not required.
# 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 123, CHEM 105aL)
- **CHE 205** (MATH 125)
- **MATH 126 or MATH 129**
- **CHEM 105bL**
- **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 300L**
- **MATH 245**
- **WRIT 340**
- **CHE 350**

## THIRD YEAR

### FALL SEMESTER
- **POLYMER/MATERIALS SCI. ELECTIVE**
- **CHEM 430**
- **CHE 442**
- **CHE 472**
- **GE C**

### SPRING SEMESTER
- **CHEMISTRY ELECTIVE**
- **CHEM 444aL**
- **CHE 445**
- **CHEM 443**
- **CHE 476**
- **OPTIONAL ELECTIVE**

## FOURTH YEAR

### FALL SEMESTER
- **CHE 444bL**
- **CHE 445**
- **CHE 485**
- **POLYMER/MATERIALS SCI. ELECTIVE**
- **CHE 405 or ISE 460 or BUAD 301**

### SPRING SEMESTER
- **CHE 446**
- **CHE 460L**
- **CHE 480**
- **POLYMER/MATERIALS SCI. ELECTIVE**
- **MASC 350L**

## 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 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 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 academic 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 9 units from BME 410, CHE 474L, 475, 477, 487, EE 438L, or ISE 322L or PHYS 152 or MASC 440.
# 2016-17 Suggested Course Plan

## A SUGGESTED COURSE PLAN FOR:

**CHEMICAL (SUSTAINABLE ENERGY)**

### FIRST YEAR

<table>
<thead>
<tr>
<th>FALL SEMESTER</th>
<th>SPAN</th>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
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<tr>
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<td>WRIT 150</td>
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<td>SPRING SEMESTER</td>
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<td>Mathematics (16 Units)</td>
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<td>MATH 125 (GE F)</td>
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### SECOND YEAR

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<td>MATH 225 or MATH 129</td>
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<td>PHYS 152L</td>
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<tr>
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<td>OPTIONAL ELECTIVE</td>
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</table>

| SPRING SEMESTER | CHEM TECH. ELECTIVE | GE C | CHEM 405 or IS 460 or *BUAD 301 | OPTIONAL ELECTIVE | 3 |

### THIRD YEAR

<table>
<thead>
<tr>
<th>FALL SEMESTER</th>
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| SPRING SEMESTER | CHEM TECH. ELECTIVE | GE C | CHEM 444bL | CHEM 444aL or 444 (444) | CHEM 444 | CHEM 443 | CHEM 476 or MASC 350L | OPTIONAL ELECTIVE | 3 |

### FOURTH YEAR

<table>
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<th>Course Code</th>
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<td>CHEM 480</td>
<td>GE B</td>
<td>OPTIONAL ELECTIVE</td>
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</table>

### 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 (34 UNITS)

- CHEM 105A: General Chemistry
- CHEM 105B: General Chemistry
- CHEM 300L: Analytical Chemistry
- CHEM 322AL: Organic Chemistry
- CHEM 430L: Physical Chemistry: Thermodynamics & Kinetics

### CHEMISTRY TECHNICAL ELECTIVES:

- CHEM 322AL: Organic Chemistry
- CHEM 431: Physical Chemistry: Quantum Mechanics
- CHEM 453: Advance Inorganic Chemistry

### GENERAL EDUCATION (32 UNITS)

- GA: 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)*

**GEMS:** General Education Seminar (1 Course)*

### WRITING (7 UNITS)

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

### ENGINEERING (54 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: Applications of Prob. & Stats. for ChE or IS 460: Engineering Economy or BUAD 301: Technical Entrepreneurship
- CHE 442: Chemical Reactor Analysis
- CHE 443: Viscous Flows
- CHE 444AL: Chemical Engineering Lab
- CHE 444: Heat Transfer in CHE Processes
- CHE 446: Mass Transfer in CHE Processes
- CHE 450: Sustainable Energy
- CHE 460L: Chemical Process Dynamics & Control
- CHE 480: Chem. Process and Plant Design
- CHE 485: Comp.-Aided Chemical Process Design

**ENGR 102:** Engineering Freshman Academy

### *SPECIAL NOTES

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- 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 GEMS 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.

- SUSTAINABLE ENERGY ELECTIVE (3):
  - Biofuel (CHE 301 or CHEM 488 or CHE 489)
  - Solar (CHE 487 or EE 513)
  - Geothermal (PTE 463L)

*Must have 49 engineering units to be able to take BUAD 301.*

2016-17 Suggested Course Plan

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