# Bachelor of Chemical Engineering Curriculum

*(for class of 2006 and later)*

## Freshman Fall Semester
- CHS1000 Ancient, Med. & Ren. Thgt. 3
- CHM1151 General Chemistry I 4
- CHM1103 General Chemistry Lab I 1
- EGR1700 Introduction to Engineering 3
- MAT1500 Math Analysis I 4
- THL1050 Christianity: Trad. & Trans. 3

**Total credits 18**

## Freshman Spring Semester
- CHS1001 Modern Thought 3
- CHM1156 General Chemistry II 4
- EGR1705 Engineering Computation 3
- MAT1505 Math Analysis II 4
- PHY2400 Physics I, Mechanics 3

**Total credits 17**

## Sophomore Fall Semester
- CHE2041 Chemical Process Calcs. 4
- CHM2211 Organic Chemistry I 3
- CHM2201 Organic Chemistry Lab I 1
- MAT2705 Diff. Eqs. & Linear Algebra 4
- PHY2402 Physics II, Elect./Magnetism 3

**Total credits 18**

## Sophomore Spring Semester
- CHE2032 ChemE Thermodynamics I 3
- CHE2232 Fluid Flow Operations 3
- CHE2212 Organic Chemistry II 3
- CHE2202 Organic Chemistry Lab II 1
- PHY2403 Physics Lab for Engineers 1

**Total credits 17**

## Junior Fall Semester
- CHE3031 Heat Transfer Operations 3
- CHE3131 ChemE Thermodynamics II 3
- CHE2432 Modeling & Numerical Meth. I 3
- CHE3841 Applied Statistics 2
- CHE3911 ChemE Laboratory I 1

**Total credits 18**

## Junior Spring Semester
- CHE3032 Mass Transfer Operations 3
- CHE3232 Simulation and Control 3
- CHE3842 Safety Analysis (or in sr spring) 2
- CHE3922 ChemE Laboratory II 2
- CHE3416 Physical Chemistry for ChemE 3

**Total credits 17**

## Senior Fall Semester
- CHE4131 Process Design I 3
- CHE4031 ChemE Reactor Engr. I 3
- CHE4831 ChemE Research I 3
- CHE4821 Tech. Lit. Investigations 1
- CHE4921 ChemE Laboratory III 2

**Total credits 15**

## Senior Spring Semester
- CHE4832 ChemE Research II 3
- --------- Technical Elective 3
- --------- Technical Elective 3
- --------- Technical Elective 3
- --------- Humanities/Social Sci. Elec. 3

**Total credits 15**

**TOTAL CREDITS 135**

**note: 3 credit free elective can be taken in each semester of the senior year**
**Technical Electives (6)**

1 must be from an Advanced Chemical Engineering Mathematics Area (ACEM)
   - Modeling and Numerical Methods II
   - Transport Phenomena
   - Process Control Theory

2 must be from an Advanced Process Engineering Area (APE)
   - Chemical Engineering Economics
   - Chemical Reactor Engineering II
   - Process Design II

3 must be from a Breadth of Chemical Engineering Area (allowed 1 outside the department)
   -- all three can be from the same subgroup (a concentration in an area)
   -- or one can be taken from a variety of subgroup

- **Biological Engineering Systems**
  - Introduction to Biotechnology
  - Biochemistry I and II
  - Bioseparations

- **Environmental Engineering Systems**
  - Introduction to Air Pollution Control
  - Industrial Liquid and Solid Waste
  - Approved Civil or Tech. course outside dept.

- **Advanced ChemE Science**
  - ACEM elective not previously taken
  - APE elective not previously taken

- **Advanced Materials Engineering**
  - Introduction to Material Science
  - Nanomaterials/Surface Science
  - Polymer Science and Engineering

**Humanities/Social Science Electives (5)**

1 must be a THL (Theology and Religious Studies) course at the 2000 level or higher
1 must be an approved Ethics course in any department
1 course must be chosen from the following:
   - THL course at the 2000 level or higher
   - Any Philosophy course, including PHI 2150 (Engineering Ethics)
   - EGR 2001 (The Humanistic Context)
   - Any Peace and Justice Course
   - ETH 2050 (College Ethics)

2 courses from a humanities or social science department

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<thead>
<tr>
<th>Humanities</th>
<th>Social Sciences</th>
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<tbody>
<tr>
<td>Arab &amp; Islamic Studies</td>
<td>Economics</td>
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<tr>
<td>Art History (not skills courses)</td>
<td>Geography</td>
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<tr>
<td>Classical Studies</td>
<td>Peace and Justice</td>
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<tr>
<td>Communications (not skills courses)</td>
<td>Political Science</td>
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<tr>
<td>English (literature courses)</td>
<td>Psychology</td>
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<tr>
<td>History</td>
<td>Sociology</td>
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<tr>
<td>Honors Program (must be accepted)</td>
<td>Women’s Studies (selected courses only)</td>
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<td>Modern Languages (can not be native language)</td>
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<tr>
<td>Philosophy</td>
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<tr>
<td>Theology and Religious Studies (2000 and above)</td>
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<tr>
<td>Theatre (not skills courses)</td>
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