CHEMICAL ENGINEERING: PRE-MEDICAL, BSCH

Program pending OSRHE approval for the 2020-2021 Academic Year

Requirements for Students Matriculating in or before Academic Year 2020-2021. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.00
Total Hours: 135

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
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<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
<td></td>
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<tr>
<td>ENGL 1413</td>
<td>Critical Analysis and Writing II</td>
<td></td>
</tr>
<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
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</tbody>
</table>

American History & Government
Select one of the following: 3

- HIST 1103 | Survey of American History | |
- HIST 1483 | American History to 1865 (H) | |
- HIST 1493 | American History Since 1865 (DH) | |
- POLS 1113 | American Government | 3 |

Analytical & Quantitative Thought (A)

- MATH 2144 | Calculus I (A) | 4 |
- MATH 2153 | Calculus II (A) | 3 |
- MATH 2163 | Calculus III | 3 |

Humanities (H)
Any course designated (H) 1 6 |

Natural Sciences (N)
Must include one Laboratory Science (L) course

- CHEM 1515 | Chemistry II (LN) | 5 |
- BIOL 1114 | Introductory Biology (LN) | 4 |

Social & Behavioral Sciences (S)
Any course designated (S) 2 6 |

Hours Subtotal 43

Diversity (D) & International Dimension (I)
May be completed in any part of the degree plan
Select at least one Diversity (D) course
Select at least one International Dimension (I) course

College/Departmental Requirements

Basic Science

- PHYS 2014 | University Physics I (LN) | 4 |
- PHYS 2114 | University Physics II (LN) | 4 |

Chemistry

- CHEM 3053 | Organic Chemistry I | 3 |
- CHEM 3112 | Organic Chemistry Laboratory | 2 |
- CHEM 3153 | Organic Chemistry II | 3 |

Hours Subtotal 41

Major Requirements

Mathematics

- MATH 2233 | Differential Equations | 3 |
- or MATH 3263 | Linear Algebra and Differential Equations |
Select one of the following: 3

- STAT 2013 | Elementary Statistics (A) |
- STAT 2023 | Elementary Statistics for Business and Economics (A) |
- STAT 2053 | Elementary Statistics for the Social Sciences (A) |
- STAT 4013 | Statistical Methods I (A) |
- STAT 4033 | Engineering Statistics |
- STAT 4053 | Statistical Methods I for the Social Sciences (A) |
- STAT 4073 | Engineering Statistics with Design of Experiments |

Chemistry

- CHEM 3433 | Physical Chemistry I | 3 |

Chemical Engineering

- CHE 2033 | Introduction to Chemical Process Engineering |
- CHE 2581 | Chemical Engineering Seminar I | 1 |
- CHE 3013 | Rate Operations I | 3 |
- CHE 3113 | Rate Operations II | 3 |
- CHE 3123 | Chemical Reaction Engineering | 3 |
- CHE 3333 | Introduction to Transport Phenomena | 3 |
- CHE 3473 | Chemical Engineering Thermodynamics | 3 |
- CHE 3581 | Chemical Engineering Seminar II | 1 |
- CHE 4002 | Chemical Engineering Laboratory I | 2 |
- CHE 4112 | Chemical Engineering Laboratory II | 2 |
- CHE 4124 | Chemical Engineering Design I | 4 |
- CHE 4224 | Chemical Engineering Design II | 4 |
- CHE 4581 | Chemical Engineering Seminar III | 1 |
- CHE 4843 | Chemical Process Instrumentation and Control | 3 |

Hours Subtotal 45
## Controlled Electives

### Advanced Chemical Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3023</td>
<td>General Genetics</td>
<td>3</td>
</tr>
<tr>
<td>or MICR 3033</td>
<td>Cell and Molecular Biology</td>
<td></td>
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</tbody>
</table>

### Bioengineering/Bioscience Electives

Select 3 hours of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAE 3113</td>
<td>Biological Applications in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>BAE 4413</td>
<td>Food Engineering</td>
<td></td>
</tr>
<tr>
<td>BIOC 3223</td>
<td>Physical Chemistry for Biologists</td>
<td></td>
</tr>
<tr>
<td>BIOC 3713</td>
<td>Biochemistry I</td>
<td></td>
</tr>
<tr>
<td>BIOC 3653</td>
<td>Survey of Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOC 4113</td>
<td>Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3023</td>
<td>General Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 3214</td>
<td>Human Anatomy</td>
<td></td>
</tr>
<tr>
<td>CHE 4283</td>
<td>Bioprocess Engineering</td>
<td></td>
</tr>
<tr>
<td>CHE 4293</td>
<td>Biomedical Engineering</td>
<td></td>
</tr>
<tr>
<td>CHE 5283</td>
<td>Advanced Bioprocess Engineering</td>
<td></td>
</tr>
<tr>
<td>CHE 5293</td>
<td>Advanced Biomedical Engineering</td>
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</tbody>
</table>

**Hours Subtotal**: 6

**Total Hours**: 135

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1. Humanities courses - should select one from ENGL and one ART, ENGL, FLL, MUSI, PHIL or TH to also meet medical school requirements.

2. Social & Behavioral Sciences courses – should select from ANTH, PSYC, or SOC to also meet medical school requirements.

## Graduation Requirements

1. A minimum GPA of 2.00 is required in all CHE coursework.

2. Must Receive a 'C' or better in the following CHE courses: CHE 2033, CHE 3013, CHE 3113, CHE 3123, CHE 3333, CHE 3473, and CHE 4002.

3. The major engineering design experience, capstone course, is satisfied by CHE 4124 Chemical Engineering Design I and CHE 4224 Chemical Engineering Design II.

## Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.

- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.

- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.

- Degrees that follow this plan must be completed by the end of Summer 2026.