

BSBCHE Biochemical Engineering
Fall 2017

This document is an example of a BSBCHE program of study. Several factors can affect the course scheduling sequence. For a copy of the official curriculum, please go to the UGA Bulletin: <http://bulletin.uga.edu/>

Major Requirements

Students must earn a grade of "C" (2.0) or better in the courses indicated in **bold**.

High Demand Entrance Requirements

To be considered as a candidate for BSBCHE, students must complete the courses indicated in *italics*. For more information on entrance requirements, please refer to the UGA Bulletin: <http://bulletin.uga.edu/> and our website.

| YEAR ONE | | | | | |
|---------------------------|------------------------------|--------------|---------------------------|--------------------------------|--------------|
| Fall Semester | | Hours | Spring Semester | | Hours |
| MATH 2250 | <i>Calculus I</i> | 4 | MATH 2260 | <i>Calculus II</i> | 4 |
| ENGR 1920 | Intro to Engineering | 1 | CHEM 1212&L | <i>Freshman Chemistry II</i> | 4 |
| ENGR 1120 | Engineering Graphics | 2 | PHYS 1251 | <i>Physics for Engineers I</i> | 3 |
| CHEM 1211&L | Freshman Chemistry I | 4 | ENGR 1140 | Computational Engr. Methods | 2 |
| <i>ENGL 1101</i> | <i>English Composition I</i> | 3 | BIOL 1107&L | <i>Principles of Biology I</i> | 4 |
| FYOS | First-Year Odyssey | 1 | | | |
| Total Credit Hours | | 15 | Total Credit Hours | | 17 |

| YEAR TWO | | | | | |
|---------------------------|---------------------------------|--------------|---------------------------|-------------------------------|--------------|
| Fall Semester | | Hours | Spring Semester | | Hours |
| MATH 2500 | Multivariable Calculus | 3 | MATH 2700 | Differential Equations | 3 |
| ENGR 2120 | Statics | 3 | ENGR 3160 | Fluid Mechanics | 3 |
| PHYS 1252 | Physics for Engineers II | 3 | ENGR 3140 | Thermodynamics I | 3 |
| BCHE 2910 | Intro Biochemical Engr. Design | 3 | ENGL 1102 | English Composition II | 3 |
| CHEM 2211&L | Organic Chemistry I | 4 | COMM 1100 | Intro to Public Speaking | 3 |
| Total Credit Hours | | 16 | Total Credit Hours | | 15 |

| YEAR THREE | | | | | |
|---------------------------|--------------------------------------|--------------|---------------------------|------------------------------------|--------------|
| Fall Semester | | Hours | Spring Semester | | Hours |
| BCHE 3520 | Mass Transport/Rate Phenomena | 3 | ENGR 3150 | Heat Transfer | 3 |
| BCHE 3145 | Equilibrium Thermodynamics | 3 | ENGR 2110 | Engineering Decision Making | 3 |
| BCMB 3100 | Intro Biochem./Molecular Biology | 4 | BCHE 3420 | Kinetics & Reactor Design | 3 |
| MIBO 3500 | Intro Microbiology | 3 | BCHE 3180 | Biochemical Engineering Lab | 2 |
| | World Lang & Culture Elective | 3 | BCHE 4510 | Biochemical Engineering | 3 |
| Total Credit Hours | | 16 | Total Credit Hours | | 15 |

| YEAR FOUR | | | | | |
|---------------------------|----------------------------------|--------------|---------------------------|--------------------------------------|--------------|
| Fall Semester | | Hours | Spring Semester | | Hours |
| BCHE 4910 | BCHE Capstone Design I | 2 | BCHE 4911 | BCHE Capstone Design II | 2 |
| | Biochemical Engineering Elective | 3 | BCHE 4180 | Advanced Biochemical Engineering Lab | 3 |
| | Social Sciences Elective | 3 | BCHE 4360 | Biochemical Process Control | 3 |
| | Social Sciences Elective | 3 | | Biochemical Engineering Elective | 3 |
| | World Lang & Culture Elective | 3 | | Biochemical Engineering Elective | 3 |
| | World Lang & Culture Elective | 3 | | Social Sciences Elective | 3 |
| Total Credit Hours | | 17 | Total Credit Hours | | 17 |

Biochemical Engineering Electives

Select three (3) courses from the list below. Courses with BCHE prefixes are preferred over BIOE prefixes.

| | |
|---------------------|--|
| BCHE 4350 | Bioprocess Quality Control |
| BCHE 4460 | Bio-refinery Engineering |
| BCHE/ENVE 4490/6490 | Environmental Engineering Remediation Design |
| BCHE 4520 | Design of Biochemical Separation Processes |
| BCHE 4550 | Bioprocess Design & Simulation |
| BCHE 4645 | Biocatalysis & Protein Engineering |
| BCHE 4655/6655 | Metabolic Engineering and Synthetic Biology |
| BCHE 4710 | Bio-electrochemical Engineering |
| *BIOE/CHEM 4615 | Soft Materials |
| BIOE 4625 | Tissue Engineering |
| *BIOE 4740 | Biomaterials |
| ENGR 4490 | Renewable Energy Engineering |

*Students may only choose one of these.