

Chemical Engineering - Biological & Pharmaceutical Engineering, B.S.

Plan Name Chemical Engineering - Biological & Pharmaceutical Engineering, B.S.
Assigned To Tommy Trojan
USC ID
Created By Mork Family Department
Primary
Total Units 134.00

Personal Program Plan Terms

Freshman Year - Semester 1

16 Units

- CHEM-105A General Chemistry (4.0 Units)
 - GE-A The Arts (4.0 Units)
 - MATH-125 Calculus I (4.0 Units)
 - WRIT-150 Writing and Critical Reasoning--Thematic Approaches (4.0 Units)
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Freshman Year - Semester 2

16 Units

- MATH-126 or MATH-129 - Calculus II (4.0 Units)
 - CHE-120 Introduction to Chemical Engineering (4.0 Units)
 - CHEM-105B General Chemistry (4.0 Units)
 - GESM-120 Seminar in Humanistic Inquiry (4.0 Units)
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Sophomore Year - Semester 1

16 Units

- MATH-226 or MATH-229 - Calculus III (4.0 Units)
 - CHE-305 Numerical and Statistical Analysis for Chemical Engineers (4.0 Units)
 - CHE-330 Chemical Engineering Thermodynamics (4.0 Units)
 - PHYS-151 Fundamentals of Physics I: Mechanics and Thermodynamics (4.0 Units)
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Sophomore Year - Semester 2

18 Units

- CHE-350 Introduction to Separation Processes (4.0 Units)
- CHE-444A Chemical Engineering Laboratory (2.0 Units)

- CHEM-322A Organic Chemistry (4.0 Units)
 - GE-C Social Analysis (4.0 Units)
 - MATH-245 Mathematics of Physics and Engineering I (4.0 Units)
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Junior Year - Semester 1

18 Units

- CHE Upper-Division Elective #1 (Required) (4.0 Units)
 - CHE-443 Chemical Engineering Fluid Mechanics (4.0 Units)
 - CHE-444B Chemical Engineering Laboratory (2.0 Units)
 - CHEM-430 Physical Chemistry: Thermodynamics and Kinetics (4.0 Units)
 - WRIT-340 Advanced Writing for Engineers Topic (4.0)
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Junior Year - Semester 2

18 Units

- CHE Upper-Division Elective #2 (Required) (4.0 Units)
 - CHE-442 Chemical Reactor Design (4.0 Units)
 - CHE-444C Chemical Engineering Laboratory (2.0 Units)
 - CHE-447 Heat and Mass Transfer in Chemical Engineering Processes (4.0 Units)
 - GE-C & GE-H Social Analysis and Traditions and Historical Foundations (p) (4.0 Units)
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Senior Year - Semester 1

16 Units

- BISC 320 Molecular Biology (GE D / CHE Elective #3 Required) (4.0 Units)
 - CHE-460 Chemical Process Dynamics and Control (4.0 Units)
 - CHE-485 Computer-Aided Chemical Process Design (4.0 Units)
 - PHYS-152 Fundamentals of Physics II: Electricity and Magnetism (4.0 Units)
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Senior Year - Semester 2

16 Units

- BISC 330 Biochemistry (CHE Elective #4 Required) (4.0 Units)
 - CHE-480 Chemical Process and Plant Design (4.0 Units)
 - GE-B & GE-G Humanistic Inquiry and Equity in a Diverse World (w) (4.0 Units)
 - GE-D Life Sciences (4.0 Units)
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This is a copy of a plan you created with your advisor. Go to Advise USC to refer to the plan and any related advising notes.

Biological & Pharmaceutical Engineering, B.S. - Upper Division Elective Requirements

Core Requirements - 4 units

BISC 320 Molecular Biology*

OR

BISC 330 Biochemistry

** BISC 320Lg also fulfills the GE D Life Sciences requirement.*

Select three of the following electives - 12 units

BISC 300L Introduction to Microbiology

BISC 406L Biotechnology

BISC-451: Protein Engineering

BME 406 Introduction to Bioengineering in Medicine BME

410L Introduction to Biomaterials and Tissue Engineering

BME 430 Principles and Applications of Systems Biology

BME 459L Introduction to Nanomedicine and Drug Delivery

BPSI 402 Biopharmaceutics I

BPSI 403 Biopharmaceutics II

BPSI- 406: Drug Safety Pharmacology and Toxicology

BPSI 408: Biologics and Vaccines

CHE 489 Biochemical Engineering

RXRS 407 The Discovery, Development and Marketing of
Medicines

RXRS-408: Arming the Immune System for Novel Therapies

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