

# BSE – Bioprocess Engineering (BIOE) Concentration

FRESHMAN

SOPHOMORE

JUNIOR

SENIOR

Bold border denotes class with lab

Dashed border denotes minimum grade of C required

Engineering  
39 core hours +  
26 concentration hours

Note: This chart is for planning purposes only. It is the student's responsibility to ensure that requirements as detailed in the Undergraduate Catalog are met.

Math/Science  
32 hours

General  
31 hours

**ENGR 1012 (2)**  
Engineering Graphics

C: MATH 1083 or higher

**ENGR 1000 (1)**  
Introduction to Engineering

**ENGR 1016 (2)**  
Intro to Eng Design

**ENGR 2050 (3)**  
Computer Applications in Engineering

MATH 1083 or higher

**MATH 2151 (3)**  
Calculus I

MATH 1083 or Placement test

**MATH 2152 (3)**  
Calculus II

**BIOL 1050/1051 or 1100/1101 (4)**  
General Chemistry I

**CHEM 1150/1151 (4)**  
General Chemistry I

**ENGL 1100 (3)**  
Composition

**ENGL 1200 (3)**  
Composition

Social Sciences Elective (3)

16

15/31

**ENGR 2022 (3)**  
Statics

C: PHYS 2350  
P: MATH 2152

**ENGR 2000 (1)**  
Engineering Design/PM I

**ENGR 2070 (3)**  
Materials and Processes

ENGL 1200  
CHEM 1150

**MATH 2153 (3)**  
Calculus III

ENGR 2050

**PHYS 2350 (4)**  
University Physics I

**PHYS 2360 (4)**  
University Physics II

**MATH 3307 (3)**  
Engineering Statistics

MATH 2152

Credit hours per Semester

Cumulative Credit hours

17/48

18/66

**ENGR 2450 (3)**  
Dynamics

MATH 3307

**ENGR 3800 (3)**  
Quality Control for Engineers

C: MATH 2154,  
C: PHYS 2360

**ENGR 3024 (3)**  
Mechanics of Materials

ENGR 2070  
ENGR 2022

**ENGR 2514 (4)**  
Circuit Analysis

C: MATH 2154,  
C: PHYS 2360

**CHEM 2650/2651 (5)**  
Organic Chemistry

MATH 2152

**ENGR 3420 (2)**  
Engineering Economics

MATH 2152

**BIOE 3016 (2)**  
Microbiology For Engineers

P: MATH 2154, ENGR 2450  
C: CHEM 2650/2651

**ECON 2113 (3)**  
Microeconomics

**EXSS 1000 (1)**  
Lifetime Physical Activity

16/82

**ENGR 3000 (2)**  
Engr Design & PM II

ENGR 2000  
P/C: ENGR 3420

**ENGR 3050 (3)**  
Sensors, Measurements And Controls

MATH 2154

**BIOE 3250 (3)**  
Bioprocess Engineering

BIOE 3016

**ENGR 3012 (4)**  
Thermal and Fluid Systems

MATH 2154  
ENGR 2450

**BIOE 4006 (2)**  
Bioprocess Engineering Validation

MATH 3307

**PHIL 2274 or 2275 (3)**  
Ethics

**Humanities/ Fine Arts Elective (4)**

16/98

**ENGR 4010 (2)**  
Senior Capstone Design I

ENGR 3000  
ENGR 3420  
BIOE 3016  
BIOE 3250

**BIOE 4010 (3)**  
Bioprocess Separation Engineering

**BIOE 4020 (3)**  
Bioprocess Plant Design, Sim. & Anlys.

MATH 3307

**HLTH 1000 (2)**  
Health in Modern Society

**Humanities/ Fine Arts Elective (3)**

**Social Sciences Elective (3)**

**Humanities/ Fine Arts Elective (4)**

16/114

**ENGR 4020 (2)**  
Senior Capstone Design II

**BIOE 4020 (3)**  
Bioprocess Plant Design, Sim. & Anlys.

**Humanities/ Fine Arts Elective (3)**

**Social Sciences Elective (3)**

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**Social Sciences Elective (3)**

**Social Sciences Elective (3)**

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