

PRE-MEDICINE/ BIOCHEMISTRY AND BIOPHYSICS OPTION

This option is offered within the following major(s):

- Biochemistry and Biophysics - College of Science (<http://catalog.oregonstate.edu/college-departments/science/school-life-sciences/biochemistry-biophysics/biochemistry-biophysics-bs-hbs>)

Biochemistry and Biophysics students interested in a career in medicine should choose this option. It may also be suitable for students interested in some other health professions, and these students should first consult with their advisor. In addition to offering a rigorous foundation in general chemistry, organic chemistry, mathematics, physics, biology, biochemistry, cell and molecular biology, biophysics, statistics, and biological sequence analysis, the Pre-medicine option meets the requirements for most medical schools in the U.S. by providing students with training in genetics, psychology, ethics, and social sciences. Students have a wide choice of medically relevant electives in areas such as anatomy and physiology, microbiology, neuroscience, and immunology. Students are strongly encouraged to participate in undergraduate research. Faculty pre-medical advisors guide students to integrate undergraduate research and other relevant professional opportunities into their undergraduate experience and to prepare themselves as strong candidates for admission to the professional schools of their interest.

Option Code: 928

Options in the Biochemistry and Biophysics major require a minimum of twenty-one credits to complete in addition to the Biochemistry and Biophysics major. Most students can complete the major and Pre-medicine/Biochemistry and Biophysics option requirements in four years.

Students may pursue either the Pre-medicine/Biochemistry and Biophysics, Advanced Biophysics, or Neuroscience option with the Biochemistry and Biophysics major-- no dual combinations are permitted.

For further information, see MyDegrees or the Department of Biochemistry and Biophysics (<https://biochem.science.oregonstate.edu>) website (<https://biochem.science.oregonstate.edu>).

Code	Title	Hours
Core		
BI 109	HEALTH PROFESSIONS: MEDICAL	1
Electives		
Select a minimum of 20 credits from the following: ¹		20
<i>Psychology</i>		
Select a minimum of three credits:		
PSY 201	*GENERAL PSYCHOLOGY	
PSY 202	*GENERAL PSYCHOLOGY	
<i>Ethics</i>		
Select a minimum of three credits:		
PHL 205	*ETHICS	
PHL 444/REL 444	*BIOMEDICAL ETHICS	
<i>Additional Social Science</i>		
Select a minimum of three credits:		
ANTH 383	*INTRODUCTION TO MEDICAL ANTHROPOLOGY	
SOC 204	*INTRODUCTION TO SOCIOLOGY	
<i>Science Electives</i>		

Select a minimum of 10 credits:	
BB 332	*MOLECULAR MEDICINE
BB 360	INTRODUCTION TO NEUROSCIENCE
BB 361	NEUROSCIENCE OF SENSORY AND MOTOR SYSTEMS
BB 401	UNDERGRADUATE RESEARCH (1–3 credits allowed)
BI 311	GENETICS
BI 331 & BI 341	ADVANCED HUMAN ANATOMY AND PHYSIOLOGY and ADVANCED HUMAN ANATOMY AND PHYSIOLOGY LABORATORY ²
MB 302	GENERAL MICROBIOLOGY
MB 303	GENERAL MICROBIOLOGY LABORATORY
MB 310	BACTERIAL MOLECULAR GENETICS
MB 416	IMMUNOLOGY
MB 430	BACTERIAL PATHOGENESIS
MB 434	VIROLOGY
MB 436	THE HUMAN MICROBIOME

Total Hours 21

* Baccalaureate Core Course (BCC)

¹ Must include a minimum of 15 upper-division credits

² Z 431 or Z 437 may be taken in place of (BI 331 and BI 341)

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Course	Title	Hours
First Year		
Fall		
BB 111	INTRODUCTION TO BIOCHEMISTRY AND BIOPHYSICS RESEARCH	1
CH 231	GENERAL CHEMISTRY	4
CH 261	*LABORATORY FOR CHEMISTRY 231	1
MTH 251	*DIFFERENTIAL CALCULUS	4
COMM 111	*PUBLIC SPEAKING	3
or COMM 114	or *ARGUMENT AND CRITICAL DISCOURSE	
or COMM 218	or *INTERPERSONAL COMMUNICATION	
Bacc Core or Elective		3
Hours		16
Winter		
CH 232	GENERAL CHEMISTRY	4
CH 262	*LABORATORY FOR CHEMISTRY 232	1
MTH 252	INTEGRAL CALCULUS	4
WR 121	*ENGLISH COMPOSITION	3
Bacc Core or Elective		3
Hours		15
Spring		
BI 109	HEALTH PROFESSIONS: MEDICAL	1
CH 233	GENERAL CHEMISTRY	4
CH 263	*LABORATORY FOR CHEMISTRY 233	1
HHS 231	*LIFETIME FITNESS FOR HEALTH	2
MTH 254	VECTOR CALCULUS I	4
Bacc Core or Elective		3
Hours		15
Second Year		
Fall		
BI 211	*PRINCIPLES OF BIOLOGY	4
CH 334	ORGANIC CHEMISTRY	3
PH 211	*GENERAL PHYSICS WITH CALCULUS	4
Bacc Core or Elective		3
Hours		14
Winter		
BI 212	*PRINCIPLES OF BIOLOGY	4
CH 335	ORGANIC CHEMISTRY	3
PH 212	*GENERAL PHYSICS WITH CALCULUS	4

2 *Pre-Medicine/Biochemistry and Biophysics Option*

PSY 201 or PSY 202	*GENERAL PSYCHOLOGY or *GENERAL PSYCHOLOGY	3
Hours		14
Spring		
BI 213	*PRINCIPLES OF BIOLOGY	4
CH 336	ORGANIC CHEMISTRY	3
PH 213	*GENERAL PHYSICS WITH CALCULUS	4
SOC 204 or ANTH 383	*INTRODUCTION TO SOCIOLOGY or *INTRODUCTION TO MEDICAL ANTHROPOLOGY	3
Bacc Core		3
Hours		17
Third Year		
Fall		
BB 345	INTRODUCTION TO BIOLOGICAL SEQUENCE ANALYSIS	2
BB 490	BIOCHEMISTRY 1: STRUCTURE AND FUNCTION	3
CH 361	EXPERIMENTAL CHEMISTRY I	3
CH 440	PHYSICAL CHEMISTRY	3
Option Elective		4
Hours		15
Winter		
BB 314	CELL AND MOLECULAR BIOLOGY	4
BB 491	BIOCHEMISTRY 2: METABOLISM	3
CH 362	EXPERIMENTAL CHEMISTRY I	3
Bacc Core or Elective		4
Hours		14
Spring		
BB 317	*SCIENTIFIC THEORY AND PRACTICE	3
BB 492	BIOCHEMISTRY 3: GENETIC BIOCHEMISTRY	3
ST 351	INTRODUCTION TO STATISTICAL METHODS	4
PHL 444 or PHL 205	*BIOMEDICAL ETHICS or *ETHICS	4
Option Elective		4
Hours		18
Fourth Year		
Fall		
BB 481	MACROMOLECULAR STRUCTURE	3
BB 493	BIOCHEMISTRY LABORATORY MOLECULAR TECHNIQUES 1	3
Option Elective		4
Bacc Core or Elective		6
Hours		16
Winter		
BB 482	BIOPHYSICS	3
BB 494	BIOCHEMISTRY LABORATORY MOLECULAR TECHNIQUES 2	3
BB 486 or BI 311	ADVANCED MOLECULAR GENETICS or GENETICS	3-4
BB 498	ASBMB CERTIFICATION EXAM	0
Electives		5-6
Hours		14-16
Spring		
BB 483	ADVANCED BIOCHEMISTRY AND BIOPHYSICS: CAPSTONE	3
Bacc Core or Electives		12
Hours		15
Total Hours		183-185