B.S. in Biochemistry and Biophysics-sample 4-year plan

with options in Advanced Biophysics, Neuroscience, Pre-medicine/Biochemistry-Biophysics (option required) 2019-2020

This sample schedule is intended for informational purposes only. *Math placement, transfer courses, AP credit, minors, options, second majors, etc., may alter each individual student's academic plan. Students should consult with their academic advisor to create a personalized degree plan. Students must select one of the following options: Advanced Biophysics, Neuroscience, Pre-medicine. Courses in* ***Bold*** *are offered in specified term. Consult the OSU Academic Catalog* https://catalog.oregonstate.edu/

	Fall		Winter		Spring		Opportunities
First Year	CH 231 General Chemistry CH 261 General Chemistry lab **BI 211 Principles of Biology** MTH 251 Differential Calculus BB 111 Introduction to BB Research	4 1 4 4 1	CH 232 General Chemistry CH 262 General Chemistry Lab **BI 212 Principles of Biology** MTH 252 Integral Calculus WR 121 English Composition	4 1 4 4 3	CH 233 General Chemistry CH 263 General Chemistry Lab **BI 213 Principles of Biology** MTH 254 Vector Calculus COMM 111 Public Speaking	4 1 4 4 3	Work Experience, Volunteer, or Internship Join the club connected to your major Join a social club
	Total Credits	14	Total Credits	16	Total Credits	16	
Second Year	**CH 334 Organic Chemistry** BB 314 Cell and Molecular Biology PH 211 General Physics with Calculus Bacc Core (Diff, Power, & Discrimination)	3 4 4 4	**CH 335 Organic Chemistry** PH 212 General Physics with Calculus ST 351 Introduction to Statistical Methods Writing II PAC Physical Activity Class	3 4 4 3 1	**CH 336 Organic Chemistry** PH 213 General Physics with Calculus BB 317 Scientific Theory HHS 231 Lifetime Fitness for Health Bacc Core (Contemporary Global Issues)	3 4 3 2 3	Study Abroad Work Experience, Volunteer, or Internship Join a research/lab team
	Total Credits	15	Total Credits	15	Total Credits	15	
Third Year	**BB 490 Biochemistry 1: Structure & Function** **BB 345 Introduction to Biological Sequence Analysis** **CH 440 Physical Chemistry** **CH 361 Experimental Chemistry** Bacc Core (Cultural Diversity)	3 2 3 3 3	**BB 491 Biochemistry 2: Metabolism** **CH 362 Experimental Chemistry** Bacc Core (Contemporary Global Issues) Bacc Core (Literature and the Arts) Elective/Option	3 3 3 3 3	**BB 492 Biochemistry 3: Genetic Biochemistry** Bacc Core (Science, Tech. & Society) Bacc Core (Western Culture) Elective/Option	3 4 3 6	Study Abroad (summer only) Work Experience, Volunteer, or Internship Join a research/lab team
	Total Credits	14	Total Credits	15	Total Credits	16	
Fourth Year	BB 481 Macromolecular Structure **BB 493 Biochemistry Lab Molecular Techniques 1** Bacc Core (Social Processes & Ins.) Elective/Option	3 3 3 6	**BB 482 Molecular Biophysics** **BB 494 Biochem Lab Molec.Techn. 2** **BB 498 ASBMB Certification Exam** Elective/Option	3 3 0 9	**BB 483 Advanced Biochemistry and Biophysics: Capstone** Bacc Core (Contemporary Global Issues) Electives/Option	3 3 9	Work Experience, Volunteer, or Internship
	Total Credits	15	Total Credits	15	Total Credits	15	

Students must select one of the following options: Advanced Biophysics, Neuroscience, or Pre-medicine.

Advanced Biophysics Option

Option Core
CH 441 Physical Chemistry
and CH 442 Physical Chemistry

or

PH 423 Paradigms in Physics: Energy& Entropy
and PH 425 Paradigms in Physics: Quantum Fundamentals

Electives select 15 or more credits from:
BB 401 Undergraduate Research
BB 485 Applied Bioinformatics
BOT 460 Functional Genomics
or BOT 476 Introduction to Computing in the Life Sciences
CS 161 Introduction to Computer Science
MTH 256 Applied Differential Equations
or MTH 253 Infinite Series and Sequences
or MTH 264 Introduction to Matrix Algebra
PH 591 Biological Physics
ST 352 Introduction to Statistical Methods
or ST 411, ST 412 Methods of Data Analysis

Neuroscience Option

Option Core
BB 360 Introduction to Neuroscience
BB 361 Neuroscience of Sensory and Motor Systems
PSY 201 *General Psychology
PSY 202 *General Psychology

Electives select 12 or more from:

BB 486. Advanced Molecular Genetics
BB 401 Undergraduate Research or BB 410
BI 331 Advanced Human Anatomy and Physiology and BI 341 Advanced Human Anatomy and Physiology Laboratory
or Z 431 Vertebrate Physiology
CH 441 Physical Chemistry
or PH 423 Paradigms in Physics: Energy and Entropy
CH 442 Physical Chemistry
or PH 425 Paradigms in Physics: Quantum Fundamentals
MTH 253 Infinite Series and Sequences
or MTH 256 Applied Differential Equations
or MTH 264 Introduction to Matrix Algebra
PSY 330 Brain and Behavior
PSY 433 Psychopharmacology

Pre-medicine Option

Option Core
BI 109 Health Professions: Medical

Electives-select 20 or more credits from the following:
Psychology - select 3 or more credits:
PSY 201 * General Psychology
PSY 202 * General Psychology
Ethics - select 3 or more credits:
PHL 205 *Ethics
PHL/REL 444 *Biomedical Ethics
Social Science-select 3 or more credits:
SOC 204 * Introduction to Sociology
ANTH 383 *Introduction to Medical Anthropology
Genetics- select 3 or more credits:
BB 486 Advanced Molecular Genetics
BI 311 Genetics

Science Electives- select 12 or more credits:
BB 332 *Molecular Medicine
BB 360 Introduction to Neuroscience
BB 361 Neuroscience of Sensory and Motor Systems
BB 401 Undergraduate Research
or BB 410 Internship
BI 331 Advanced Anatomy and Physiology
and BI 341 Advanced Anatomy & Physiology Lab
or Z 431 Vertebrate Physiology I
or Z 437 Vertebrate Endocrinology
CH 441 Physical Chemistry
or PH 423 Paradigms in Physics: Energy and Entropy
CH 442 Physical Chemistry
or PH 425 Paradigms in Physics: Quantum Fundamentals
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 Human Microbiome