

# B.S. in Biochemistry and Molecular Biology- sample 4-year plan

with options in Advanced Molecular Biology, Computational Molecular Biology, Pre-medicine (option required) 2019-20

*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 Molecular Biology, Computational Molecular Biology, or Pre-medicine. Courses in **Bold** are offered in specified term. Consult the OSU Academic Catalog <https://catalog.oregonstate.edu/>*

	Fall		Winter		Spring		Opportunities
<b>First Year</b>	CH 231 General Chemistry	4	CH 232 General Chemistry	4	CH 233 General Chemistry	4	Work Experience, Volunteer, or Internship Join the club connected to your major Join a social club
	CH 261 General Chemistry lab	1	CH 262 General Chemistry Lab	1	CH 263 General Chemistry Lab	1	
	<b>BI 211 Introduction to Biology*</b>	4	<b>BI 212 Introduction to Biology</b>	4	<b>BI 213 Introduction to Biology</b>	4	
	<b>BB 111 Intro to BB Research</b>	1	MTH 251 Differential Calculus	4	MTH 252 Integral Calculus	4	
	WR 121 English Composition	3	HHS 231 Lifetime Fitness for Health Physical Activity Course	2 1	COMM 111 Public Speaking	3	
	*series may be taken second year						
	Total Credits	13	Total Credits	16	Total Credits	16	
<b>Second Year</b>	<b>CH 334 Organic Chemistry</b>	3	<b>CH 335 Organic Chemistry</b>	3	<b>CH 336 Organic Chemistry</b>	3	Study Abroad Begin Shadowing for Pre-Health options Work Experience, Volunteer, or Internship Join a research/lab team
	<b>PH 201 General Physics*</b>	5	<b>PH 202 General Physics</b>	5	<b>PH 203 General Physics</b>	5	
	BB 314 Cell and Molecular Biology	4	ST 351 Introduction to Statistical Methods	4	BB 317 Scientific Theory and Practice	3	
	Bacc Core or Option*	3	Writing II	3	Bacc Core or Option	3	
	*series may be taken third year						
	Total Credits	15	Total Credits	15	Total Credits	14	
<b>Third Year</b>	CH 337 Organic Chemistry Lab	4	CH 324 Quantitative Analysis	4	<b>BB 492 Biochem 3: Genetic</b>	3	Continue Shadowing for Pre-Health options Work Experience, Volunteer, or Internship Join a research/lab team Study Abroad (summer only)
	<b>BB 490 Biochemistry 1: Structure &amp; Function</b>	3	<b>BB 491 Biochemistry 2: Metabolism</b>	3	<b>Biochemistry</b>	3	
	Bacc Core (Social Processes & Ins.)	3	Bacc Core (Western Culture)	3	<b>BB 315 Molecular Biology</b>	3	
	Option Course	3	Option Course	3	<b>Laboratory</b>	3	
	Elective	3	Elective	3	Bacc Core (Contemporary Global Issues)	3	
					Option Course	3	
	Total Credits	16	Total Credits	16	Total Credits	15	
<b>Fourth Year</b>	BB 481 Macromolecular Structure	3	<b>BB 494 Biochem Lab Molecular</b>	3	Option Course*	15	Work Experience, Volunteer, or Internship
	Bacc Core (Literature and the Arts)	3	<b>Techniques</b>		Electives		
	Option Courses*	6	<b>BB 486 Advanced Molecular Genetics</b>	3			
	Elective	3	<b>BB 498 ASBMB Certification Exam</b>	0			
			Bacc Core (Science, Tech. & Society)	6			
			Option Course	3			
	Total Credits	15	Total Credits	15	Total Credits	15	

*\*Students must select one of the following options: Advanced Molecular Biology, Computational Molecular Biology, or Pre-medicine.*

<b><u>Advanced Molecular Biology Option</u></b>	<b><u>Computational Molecular Biology Option</u></b>	<b><u>Pre-Medicine Option</u></b>
<p><b>Option Core</b> BB 345 Introduction to Biological Sequence Analysis</p> <p><b>Upper Division Science Electives</b> <i>(Select 19 or more credits from the following):</i></p> <p>BB 360 Introduction to Neuroscience BB 361 Neuroscience of Sensory and Motor Systems BB 401 Undergraduate Research BB 460 Advanced Cell Biology BB 484 Chromatin and Epigenetics BB 485 Applied Bioinformatics BI 311 Genetics BI 445 Evolution BOT 460 Functional Genomics BOT 475 Comparative Genomics BOT 476 Introduction to Computing in the Life Sciences MB 302 General Microbiology MB 303 General Microbiology MB 310 Bacterial Molecular Genetics MB 416 Immunology MB 420 Microbial Genomes, Biogeochemistry, &amp; Diversity MB 436 Human Microbiome ST 352 Introduction to Statistical Methods Z 425 Embryology and Development Z 438 Behavioral Neurobiology</p>	<p><b>Option Core</b> BB 485 Applied Bioinformatics CS 161 Introduction to Computer Science I</p> <p><b>Upper Division Electives</b> <i>(Select 14 or more credits from the following):</i></p> <p>BB 401 Undergraduate Research BI 311 Genetics BOT 460 Functional Genomics BOT 475 Comparative Genomics BOT 476 Intro to Computing in the Life Sciences CS 162 Introduction to Computer Science II CS 261 Data Structures CS 325 Analysis of Algorithms CS 420 Graph Theory with Applications to Computer Science CS 446 Biological Networks MB 420 Microbial Genomes, Biogeochemistry, &amp; Diversity MTH 231 Elements of Discrete Mathematics ST 352 Introduction to Statistical Methods     <b>or</b> ST 411 Methods of Data Analysis     <b>or</b> ST 412 Methods of Data Analysis</p>	<p><b>Option Core</b> BI 109 Health Professions: Medical PSY 201 General Psychology     <b>or</b> PSY 202 General Psychology PHL 205 Ethics     <b>or</b> PHL/REL 444 Biomedical Ethics ANTH 383 Introduction to Medical Anthropology     <b>or</b> SOC 204 Introduction to Sociology</p> <p><b>Science Electives—</b> <b><i>(Select 10 or more credits from the following):</i></b></p> <p>BB 332 Molecular Medicine BB 360 Introduction to Neuroscience BB 361 Neuroscience of Sensory and Motor Systems BB 401 Undergraduate Research BI 311 Genetics BI 331+ BI 341 Advanced Anatomy &amp; Physiology with lab 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 Z 431 Vertebrate Physiology I Z 432 Vertebrate Physiology II Z 437 Vertebrate Endocrinology</p>