

BIOCHEMISTRY - BACHELOR OF SCIENCE

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

First Year

Semester 1		Credits
ENGL 1110G or ENGL 1110H	Composition I ¹ or Composition I Honors	4
MATH 1511G or MATH 1511H	Calculus and Analytic Geometry I ¹ or Calculus and Analytic Geometry I Honors	4
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors ³	4
BCHE 140	Explorations in Chemistry and Biochemistry	1
Area IV: Social and Behavioral Science Course ²		3

Credits 16

Semester 2

MATH 1521G or MATH 1521H	Calculus and Analytic Geometry II ¹ or Calculus and Analytic Geometry II Honors	4
BIOL 2110G & BIOL 2110L	Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory ¹	4
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	4
Area V: Humanities Course ²		3

Credits 15

Second Year

Semester 1

BIOL 305 or GENE 320	Principles of Genetics ¹ or Hereditary and Population Genetics	3
CHEM 313	Organic Chemistry I ¹	3
CHEM 371	Analytical Chemistry	4
Choose from one of the following:		4
PHYS 2110 & 2110L	Mechanics and Experimental Mechanics ¹	
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab ¹	
PHYS 2230G & PHYS 2230L	General Physics for Life Science I and Laboratory to General Physics for Life Science I ¹	
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab ¹	
Area VI: Creative and Fine Arts Course ²		3

Credits 17

Semester 2

COMM 1115G or HNRS 2175G	Introduction to Communication or Introduction to Communication Honors	3
ENGL 2210G or ENGL 2210H	Professional and Technical Communication or Professional and Technical Communication	3

CHEM 314 & CHEM 315	Organic Chemistry II and Organic Chemistry Laboratory ¹	5
Choose from one of the following:		4
PHYS 2140 & 2140L	Electricity and Magnetism and Electricity & Magnetism Laboratory ¹	
PHYS 1240G & PHYS 1240L	Algebra-Based Physics II and Algebra-Based Physics II Lab ¹	
PHYS 2240G & PHYS 2240L	General Physics for Life Science II and Laboratory to General Physics for Life Science II ¹	
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab ¹	

Credits 15

Third Year

Semester 1

A ST 311	Statistical Applications ¹	3
BIOL 377	Cell Biology ¹	3
BCHE 395 or BCHE 395H	Biochemistry I ¹ or Biochemistry I Honors	3
CHEM 430	Physical Chemistry: Thermodynamics, Kinetics, Quantum Chemistry, and Spectroscopy	3
Elective Course		3

Credits 15

Semester 2

BCHE 396 or BCHE 396 H	Biochemistry II, Lecture and Laboratory or Biochemistry II Honors, Lecture and Laboratory	4
BIOL 311 & 311 L	General Microbiology and General Microbiology Laboratory ¹	5
VWW: Viewing a Wider World Course ⁴		3
Elective Course		3
Elective Course		3

Credits 18

Fourth Year

Semester 1

BCHE 440	Biochemistry Seminar ¹	1
Select from the following:		3
BCHE 452	Chemical Carcinogenesis	
CHEM 471	Advanced Integrated Inorganic and Physical Chemistry Laboratory	
TOX 361	Basic Toxicology	
Elective Course		2
Elective Course		3
Elective course		3

Credits 12

Semester 2

CHEM 472	Advanced Integrated Instrumental Analysis and Protein Biochemistry Laboratory	3
Select from the following: ³		3
BCHE 432	Physical Biochemistry	
BCHE 451	Special Topics	
CHEM 456	Inorganic Structure and Bonding	
CHEM 474	Radiochemistry	
CHEM 451	Special Topics (by petition)	
Elective Course		3
VWW: Viewing a Wider World Course ⁴		3

Credits 12

Total Credits 120

- ¹ These courses may have prerequisites and/or co-requisites, and it is the students responsibility for checking and fulfilling all those requirements.
- ² See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.
- ³ CHEM 1215G General Chemistry I Lecture and Laboratory for STEM Majors is intended for students that completed high school Chemistry. Students with no prior Chemistry or those desiring a refresher are strongly encouraged to take CHEM 1111 Foundations of Chemistry prior to CHEM 1215G General Chemistry I Lecture and Laboratory for STEM Majors enrollment.
- ⁴ See the Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section of the catalog for a full list of courses.
- ⁵ Courses fulfilling the "Select 6 credits from the following" requirement may be taught in either Fall or Spring. Students are encouraged to check course schedules closely when choosing courses. The BCHE 432 Physical Biochemistry is highly recommended for all Biochemistry majors.