

# BIOLOGY (SECONDARY EDUCATION) - BACHELOR OF ARTS

The Bachelor of Arts curriculum is intended for students who desire a broad education with emphasis in biology in a program chosen by the student in consultation with an academic advisor. The Bachelor of Arts is recommended for those who plan to teach at the Secondary General Science Education (Grades 6-12) level or to use a background in life science in business or other endeavors.

## Requirements

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
<b>General Education</b>		
<i>Area I: Communications</i>		<b>10</b>
	<i>English Composition - Level 1</i> <sup>1</sup>	
	<i>English Composition - Level 2</i> <sup>1</sup>	
	<i>Oral Communication</i> <sup>1</sup>	
<i>Area II: Mathematics</i> <sup>2</sup>		<b>3-4</b>
MATH 1430G	Applications of Calculus I	
	or MATH 1511G Calculus and Analytic Geometry I	
	or MATH 1511H Calculus and Analytic Geometry I Honors	
<i>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</i>		<b>11</b>
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
Area IV: Social/Behavioral Sciences course (3 credits) <sup>1</sup>		
<i>Area V: Humanities</i> <sup>1</sup>		<b>3</b>
<i>Area VI: Creative and Fine Arts</i> <sup>1</sup>		<b>3</b>
<i>General Education Elective</i>		
BIOL 2610G & BIOL 2610L	Principles of Biology: Biodiversity, Ecology, and Evolution and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory (Departmental Requirement)	<b>4</b>
<b>Viewing a Wider World</b> <sup>3</sup>		<b>3</b>
<b>Departmental Requirements</b>		
BIOL 2110G & BIOL 2110L	Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory	<b>4</b>
BIOL 301	Principles of Ecology	<b>3</b>
BIOL 305	Principles of Genetics	<b>3</b>
BIOL 377	Cell Biology	<b>3</b>
BIOL 467	Evolution	<b>3</b>
<i>Biology Electives</i>		<b>12</b>
Select sufficient upper-division biology electives to bring total upper-division credits to 24. <sup>4</sup>		

### Non-Departmental Requirements (in addition to Gen.Ed/VWW)

CHEM 2120	Integrated Organic Chemistry and Biochemistry	<b>3</b>
CHEM 2120L	Integrated Organic Chemistry and Biochemistry Lab	<b>1</b>
<i>Select 3-4 credits from one of the following departments: astronomy, computer science, geology or physics</i>		<b>3-4</b>
EDUC 3120	Multicultural Education	<b>3</b>
EDUC 3997	Secondary Field Experience	<b>3</b>
EDUC 4410	Teaching Science at the Middle and High School Level <sup>5</sup>	<b>3</b>
EDUC 4820	Secondary Student Teaching <sup>6</sup>	<b>9</b>
EDUC 4821	Middle and High School Student Teaching Seminar <sup>6</sup>	<b>3</b>
SPED 3105	Introduction to Special Education in a Diverse Society	<b>3</b>
READ 4330	Content Area Literacy <sup>5</sup>	<b>3</b>
<b>Second Language Requirement (See below)</b>		<b>0-8</b>
The number of credits required to satisfy this requirement will vary depending on the option a student chooses.		
<b>Electives, to bring the total credits to 120</b> <sup>7</sup>		<b>11-21</b>
Selective sufficient electives to bring the total to 120, including at least 48 upper-division credits.		
<b>Total Credits</b>		<b>120</b>

<sup>1</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

<sup>2</sup> Either MATH 1430G Applications of Calculus I or MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need prerequisite courses before entering one of these.

<sup>3</sup> 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.

<sup>4</sup> Choice of Biology electives should be done in consultation with an advisor.

<sup>5</sup> Requires TEP admittance.

<sup>6</sup> Requires STEP admittance.

<sup>7</sup> Elective credit may vary depending on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The elective credit in the requirement list is the amount needed to bring the total to 120 credits and may vary based on the degree. Students may need to complete more or less courses on a case-by-case basis and each student should discuss this with their advisor.

## Second Language Requirement

For the Bachelor of Arts in Biology there is a one year second language requirement, the options to complete this requirement are listed below. The number of credits that a student needs to take may vary depending on what level they come in with. Please speak with an advisor for more information as to which courses you will need to take to fulfill the second language requirement for this degree.

### Option 1:

Prefix	Title	Credits
<b>Complete one of the following sequences:</b>		
FREN 1110 & FREN 1120	French I and French II	<b>4-8</b>
GRMN 1110 & GRMN 1120	German I and German II	<b>4-8</b>

JAPN 1110 & JAPN 1120	Japanese I and Japanese II	4-8
SPAN 1110 & SPAN 1120	Spanish I and Spanish II	4-8
PORT 1110 & PORT 1120	Portuguese I and Portuguese II	3-6
<i>For Heritage Speakers:</i>		
SPAN 1210 & SPAN 1220 or SPAN 2210	Elementary Spanish for Heritage Learners I and Spanish for Heritage Learners II Spanish for Heritage Learners III	3-6

**Option 2:**

Prefix	Title	Credits
<b>Complete the following sequence for American Sign Language (with a C- or better):</b>		
SIGN 1110	American Sign Language I	3
SIGN 1120	American Sign Language II	3

**Option 3:**

Prefix	Title	Credits
<b>Challenge the 1120 level for the following courses:</b>		
FREN 1120 or GRMN 1120 or JAPN 1120 or SPAN 1120	French II German II Japanese II Spanish II	4
<i>OR</i>		
<b>Challenge the 1120/1220/2210 level for the following courses:</b>		
PORT 1120 or SPAN 1220 or SPAN 2210	Portuguese II Spanish for Heritage Learners II Spanish for Heritage Learners III	3

**Option 4:**

Pass a three-credit, upper-division course (numbered 300 or above) taught in a second language by the department of Languages and Linguistics.

**Option 5:**

Obtain college certification of completion of three years of a second language at the high school level with a grade of C- or higher in the second-year level.

**Option 6:**

By obtaining certification of a working knowledge of a Native American language from the American Indian program director.

**Option 7:**

By obtaining, from the head of the Department of Languages and Linguistics, certification of a working knowledge of a second language if such language is not taught at NMSU.

**Option 8:**

In the case of a foreign student who is required to take the TOEFL exam admission, the dean will automatically waive the second language requirement.

## A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1220G College Algebra 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
BIOL 2610G & BIOL 2610L	Principles of Biology: Biodiversity, Ecology, and Evolution and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory <sup>1</sup>	4
ENGL 1110G or ENGL 1110H	Composition I <sup>1</sup> or Composition I Honors	4
MATH 1220G	College Algebra <sup>1</sup>	3
Area IV: Social and Behavioral Science Course <sup>2</sup>		3
Area VI: Creative and Fine Arts Course <sup>2</sup>		3
<b>Credits</b>		<b>17</b>

**Semester 2**

BIOL 2110G & BIOL 2110L	Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory	4
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors <sup>1</sup>	4
Choose from one of the following:		4
MATH 1430G	Applications of Calculus I <sup>1</sup>	
MATH 1511G or MATH 1511H	Calculus and Analytic Geometry I or Calculus and Analytic Geometry I Honors	
Choose from one of the following Area I Oral Communication General Education Courses:		3
COMM 1115G	Introduction to Communication	
HNRS 2175G	Introduction to Communication Honors	
ACOM 1130G	Effective Leadership and Communication in Agriculture	
<b>Credits</b>		<b>15</b>

**Second Year**

Semester 1		Credits
ENGL 2210G or ENGL 2210H	Professional and Technical Communication or Professional and Technical Communication	3
BIOL 305	Principles of Genetics <sup>1</sup>	3
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors <sup>1</sup>	4
Choose electives to bring credits to 15. <sup>3</sup>		4
<b>Credits</b>		<b>14</b>

**Semester 2**

BIOL 377	Cell Biology <sup>1</sup>	3
Upper-division Biology Elective Course <sup>1</sup>		3
EDUC 3120	Multicultural Education	3
First Course in Second Language Series		4
Area V: Humanities Course <sup>2</sup>		3
<b>Credits</b>		<b>16</b>

**Third Year**

Semester 1		Credits
Upper-division Biology Elective Course <sup>1</sup>		3
SPED 3105	Introduction to Special Education in a Diverse Society	3
CHEM 2120	Integrated Organic Chemistry and Biochemistry	3
CHEM 2120L	Integrated Organic Chemistry and Biochemistry Lab	1
Next Second Language Course in Series <sup>1</sup>		3-4

Choose electives to bring credits to 15. <sup>3</sup>		2
<b>Credits</b>		<b>15-16</b>
<b>Semester 2</b>		
BIOL 301	Principles of Ecology	3
Upper-division Biology Elective Course <sup>1</sup>		3
Upper-division Biology Elective Course <sup>1</sup>		3
EDUC 3997	Secondary Field Experience	3
Viewing A Wider World <sup>4</sup>		3
<b>Credits</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Semester 1</b>		
BIOL 467	Evolution	3
EDUC 4410	Teaching Science at the Middle and High School Level <sup>5</sup>	3
READ 4330	Content Area Literacy <sup>5</sup>	3
Science elective course with prefix ASTR, CSCI, GEOL, or PHYS.		3
Choose elective courses to bring credits to 15. <sup>3</sup>		4
<b>Credits</b>		<b>16</b>
<b>Semester 2</b>		
EDUC 4820	Secondary Student Teaching <sup>6</sup>	9
EDUC 4821	Middle and High School Student Teaching Seminar <sup>6</sup>	3
The 15 credit rule to qualify for financial aid is waived during the final student teaching semester.		
<b>Credits</b>		<b>12</b>
<b>Total Credits</b>		<b>120-121</b>

<sup>1</sup> These courses have prerequisites or co-requisites and it is the student's responsibility for checking and fulfilling all course requirements listed for these courses.

<sup>2</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

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<sup>5</sup> Course requires TEP admittance.

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