

ASSOCIATE OF SCIENCE - BIOLOGY EMPHASIS

This is a two-year transferable program leading to an Associate of Science with an emphasis in biology. The curriculum includes a core of courses in the biological and physical sciences and mathematics. All courses recommended will partially satisfy the bachelor of science in biology at the University of Nevada, Reno.

Emphasis Outcomes

Students completing the emphasis will:

- Apply principles of mathematics and physical sciences to laboratory practices and biological processes.
- Explain concepts and theories in molecular structure and function, cellular processes, and genetics.
- Demonstrate knowledge of the structural and physiological functions of organisms, their ecological context, and the evolutionary relationships and hierarchical organization of biological diversity.
- Demonstrate proficient use of standard laboratory equipment and follow safe laboratory practices; apply the method of scientific inquiry by designing a controlled experiment, and collecting, analyzing and interpreting data; and present findings in written and oral formats.

AA/AS degrees are designed for students who plan to transfer to a four-year college or university.

To earn an AA/AS degree, students must:

1. Maintain a minimum cumulative GPA of 2.0 (see requirements for graduation.)
2. Complete a minimum of 15 units within the college.
3. Satisfy General Education requirements for the AA/AS (<http://catalog.tmcc.edu/degrees-certificates/general-education/aa-as>).
4. Have no financial or library obligation to the college.

General Education Requirements

English 3-6

Must include ENG 102 or ENG 114 ¹

Fine Arts 3

Humanities 3

Recommended:

PHIL 210 World Religions

Mathematics 3

Including:

MATH 126 Pre-Calculus I ((or higher)) ³

Science [6]

Required: ²

CHEM 121 General Chemistry I 8

& CHEM 122 and General Chemistry II

or CHEM 201 General Chemistry for Scientists and Engineers

& CHEM 202 and General Chemistry for Scientists and Engineers II

Social Science 3

Recommended: PSC 101, CH 203, or HIST 111

Additional College Requirements

Diversity ² [3]

Recommended:

PHIL 210 World Religions

Science [6]

U.S. and Nevada Constitutions courses ² [3]

Recommended: PSC 101, CH 203, or HIST 111

Degree Requirements

BIOL 190 Introduction to Cell and Molecular Biology 4
& 190L and Introduction to Cell and Molecular Biology Laboratory

BIOL 191 Introduction to Organismal Biology 4
& 191L and Intro to Organismal Biology Lab

Chemistry: Choose from one of the following options: ⁴ 4-8

CHEM 220 Introductory Organic Chemistry

OR

CHEM 241 Organic Chemistry I
& 241L and Organic Chemistry for Life Sciences Lab I

AND

CHEM 242 Organic Chemistry II
& 242L and Organic Chemistry for Life Sciences Lab II

PHYS 151 General Physics I 4

or PHYS 180 Physics for Scientists and Engineers I
& 180L and Physics for Scientists/Engineers Lab I

Science GE Units (from CHEM 121 & CHEM 122 or CHEM 201 & CHEM 202) [2]

STAT 152 Introduction to Statistics 3

Elective Requirements

Select 11-18 units of the following: 11-18

BIOL 105 Introduction to Neuroscience

BIOL 106 Introduction to Evolution and Adaptation

BIOL 202 General Botany

BIOL 223 Human Anatomy and Physiology I

BIOL 224 Human Anatomy and Physiology II

BIOL 251 General Microbiology

BIOL 298 Independent Study in Biology

CHS 200 Introduction to Public Health Biology

MATH 127 Pre-Calculus II ³

MATH 181 Calculus I ³

NUTR 233 Community and Lifecycle Nutrition

PHYS 152 General Physics II ⁵

PHYS 181 Physics for Scientists and Engineers II
& 181L and Physics for Scientists/Engineers Lab II ⁵

Or any transferable college level units. ⁶

Total Units 60

¹ If you place into ENG 102 or ENG 114 the additional 3 required units will become elective units.

² Course may also count toward additional degree requirements. Please consult with Academic Advisement.

³ Math 181 is required for B.S. in Biology at UNR

⁴ CHEM 341/CHEM 342, at UNR, applies as CHEM 241/CHEM 241L & CHEM 242/CHEM 242L

⁵ PHYS 152 or PHYS 180L and PHYS 181L are required for a B.S. in Biology at UNR.

⁶ BIOL 100 cannot be used towards B.S. in Biology at UNR.

Recommended courses are listed in the course sequence; however, other courses may apply. Please see an advisor or the department.

Course	Title	Units
1st semester		
CHEM 121	General Chemistry I	4
English ⁸		3
MATH 126	Pre-Calculus I	3
STAT 152	Introduction to Statistics	3
Diversity/Fine Arts ⁷		3
Semester Total		16
2nd semester		
BIOL 190 & 190L	Introduction to Cell and Molecular Biology and Introduction to Cell and Molecular Biology Laboratory	4
CHEM 122	General Chemistry II	4
English ⁸		3
MATH 127	Pre-Calculus II	3
Semester Total		14
3rd semester		
Elective ⁸		4
Social Science/U.S. Nevada Constitutions ⁷		3
BIOL 191 & 191L	Introduction to Organismal Biology and Intro to Organismal Biology Lab	4
CHEM 241 & 241L	Organic Chemistry I and Organic Chemistry for Life Sciences Lab I	4
Semester Total		15
4th semester		
Elective ⁸		4
Humanities ⁷		3
CHEM 242 & 242L	Organic Chemistry II and Organic Chemistry for Life Sciences Lab II	4
PHYS 151 or PHYS 180 and PHYS 180L	General Physics I or Physics for Scientists and Engineers I and Physics for Scientists/Engineers Lab I	4
Semester Total		15
Total Units		60

⁷ See approved General Education list for the AA/AS Degree. (<http://catalog.tmcc.edu/degrees-certificates/general-education/aa-as>)

⁸ See program recommendations or requirements.