



2016-2017 PETITION/PROGRAM SHEET

Degree: Bachelor of Science

Major: Biological Sciences

Concentration: Biology, Secondary Teaching

About This Major . . .

The Biology program offers coursework, in conjunction with the Center for Teacher Education, leading to licensure in secondary education science. Graduates of the program can teach in the state of Colorado or use their teaching expertise in other careers. After completing foundation sciences classes in Biology, Chemistry, Physics and Geology, students choose 10 hours of upper level Biology course work, in consultation with their advisor.

The secondary licensure program provides teacher education candidates with broad content knowledge in science and prepares them as teachers for grades 7 through 12. A minimum of 75 credit hours of Essential Learning and content area coursework must be completed with a minimum GPA of 2.80 before a candidate may apply for admission to the Center for Teacher Education secondary licensure program. Please see the Teacher Education Admission Packet for further information on admissions criteria. EDUC 115, What It Means to be a Teacher, and EDUC 215, Teaching as a Profession, must be taken before applying to the program.

For more information on what you can do with this major, go to http://www.coloradomesa.edu/career/whatmajor.html.

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

- 1. Utilize the scientific approach to address novel questions and problems through the development of hypotheses, design of experiments, collection of data, analysis of data, and interpretation of results. (Quantitative Fluency/Applied Learning)
2. Identify, examine, evaluate and discuss the scientific literature. (Critical Thinking)
3. Articulate biological principles and ideas effectively, both in written and oral form. (Communication Fluency)
4. Instruct students based on self-written learning plans to address individual learning and developmental patterns in the Biological Sciences. (Specialized Knowledge)
5. Design a safe and supportive learning environment for secondary education students. (Applied Learning)
6. Apply Biology content knowledge while working with learners to access information in real world settings assuring learner mastery of Biological Sciences. (Specialized Knowledge)
7. Integrate assessment, planning, and instructional strategies in coordinated and engaging ways through multiple means of communication. (Critical Thinking/Communication Fluency)
8. Engage in meaningful and intensive professional learning and self-renewal by regularly examining practice through ongoing study, self-reflection, and collaboration. (Specialized Knowledge)

NAME: _____ STUDENT ID #: _____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ () _____

I, (Signature) _____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade earned except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

Signature of Advisor _____ Date _____ 20__

Signature of Content Advisor _____ Date _____ 20__

Signature of Department Head _____ Date _____ 20__

Signature of Registrar _____ Date _____ 20__

DEGREE REQUIREMENTS:

- 120 semester hours total (Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher).
- 40 upper division credits (A minimum of 15 taken at the 300-400 course levels within the major at CMU).
- 2.80 cumulative GPA or higher in all CMU coursework.
- 2.80 cumulative GPA or higher in coursework toward the major content area.
- All EDUC prefix courses must be completed with a grade of B or better.**
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- Essential Learning Capstone should be completed between 45 and 75 hours.
- See "Requirements for Undergraduate Degrees and Certificates" in the catalog for additional graduation information.
- Students must PASS the PLACE or PRAXIS II exam in the content area prior to beginning the internship. Also, ALL other coursework toward the degree must be successfully completed prior to the internship.

ESSENTIAL LEARNING REQUIREMENTS (31 semester hours)

See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Course No Title Sem.hrs Grade Term/Trns

English (6 semester hours, must earn a grade of "B" or better and must be completed by the time the student has 60 semester hours.)

ENGL 111	English Composition	3	_____	_____
ENGL 112	English Composition	3	_____	_____

Math MATH 113 or higher (3 semester hours, must earn a grade of "C" or better, must be completed by the time the student has 60 semester hours.)

MATH 113	College Algebra	4*	_____	_____
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*3 credits apply to the Essential Learning requirements and 1 credit applies to Required Course credit

Humanities (3 semester hours)

Social and Behavioral Sciences (6 semester hours)

PSYC 233	Human Growth & Development	3	_____	_____
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Must earn a grade of "B" or better for PSYC 233.

Natural Sciences (7 semester hours) Must earn a grade of "C" or better.

BIOL 105	Attributes of Living Systems	3	_____	_____
BIOL 105L	Attributes of Living Systems Lab	1	_____	_____
		3	_____	_____

Choose one from ENV5 101, GEOL 103, GEOL 104, GEOL 105, PHYS 101

Fine Arts (3 semester hours)

History (3 semester hours)

HIST	_____	_____	_____	_____
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Course No Title Sem.hrs Grade Term/Trns

WELLNESS REQUIREMENT (2 semester hours)

KINE 100	Health and Wellness	1	_____	_____
KINA 1	_____	1	_____	_____

ESSENTIAL LEARNING CAPSTONE (4 semester hours)

ESSL 290	Maverick Milestone (see English & math pre-reqs)	3	_____	_____
ESSL 200	Essential Speech (co-requisite)	1	_____	_____

FOUNDATION COURSES (13 semester hours)

Must earn a grade of "C" or better.

CHEM 121*	Principles of Chemistry	4	_____	_____
CHEM 121L*	Principles of Chemistry Lab	1	_____	_____
CHEM 122*	Principles of Organic Chemistry	4	_____	_____
CHEM 122L*	Principles of Organic Chemistry Lab	1	_____	_____
STAT 200	Probability and Statistics	3	_____	_____

* A higher level subject may be taken in the same category with advisor approval.

BIOLOGY – LEADING TO SECONDARY EDUCATION

CERTIFICATION MAJOR REQUIREMENTS (40 semester hours)

Must earn a grade of "C" or better.

Required Core Courses (13 semester hours)

BIOL 106	Principles of Animal Biology	3	_____	_____
BIOL 106L	Principles of Animal Biology Lab	1	_____	_____
BIOL 107	Principles of Plant Biology	3	_____	_____
BIOL 107L	Principles of Plant Biology Lab	1	_____	_____
BIOL 385	Nature and Philosophy of Science	3	_____	_____
BIOL 483	Senior Thesis	2	_____	_____

Required Related Study Area (19 semester hours)

*MATH 113	College Algebra	1	_____	_____
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Choose either GEOL 111/111L or GEOL 113/113L

GEOL _____	_____	3	_____	_____
GEOL _____	_____	1	_____	_____
GEOL 112	Principles of Historical Geology	3	_____	_____
GEOL 112L	Principles of Historical Geology Lab	1	_____	_____
PHYS 111	General Physics	4	_____	_____
PHYS 111L	General Physics Lab	1	_____	_____
PHYS 112	General Physics	4	_____	_____
PHYS 112L	General Physics Lab	1	_____	_____

Biology Electives (8 Upper Division Semester Hours)

BIOL _____	_____	_____	_____	_____
BIOL _____	_____	_____	_____	_____
BIOL _____	_____	_____	_____	_____
BIOL _____	_____	_____	_____	_____

SECONDARY EDUCATION REQUIREMENTS (29 semester hours) Must earn a grade of B or better to progress through the program sequence. ENGL111, ENGL112, PSYC233, EDUC115, EDUC215 (all with a grade of B or better) and formal acceptance to the Teacher Education Program are required before the student may enroll in subsequent EDUC courses.

Course No	Title	Sem.hrs	Grade	Term/Trns
EDUC 115	What It Means to be a Teacher	1	_____	_____
EDUC 215	Teaching as a Profession	1	_____	_____
EDUC 342	Pedagogy & Assessment: Secondary/K-12	3	_____	_____
EDUC 343	Teaching to Diversity	3	_____	_____
EDUC 442	Integrating Literacy Across the Curriculum	4	_____	_____

Course No	Title	Sem.hrs	Grade	Term/Trns
EDUC 497	Content Methodology Practicum	3	_____	_____
EDUC 497D	Methods of Teaching Secondary Science*	2	_____	_____
EDUC 499G	Teaching Internship and Colloquium	12	_____	_____

ELECTIVES (All college level courses appearing on your final transcript **not listed above and below** that will bring your total semester hours to 120 hours, including 40 upper-division credit hours.) (1 credit hour)

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Secondary Education Program Requirements

Secondary Education Course Requirements:

EDUC 115	What It Means to be a Teacher (1)	8 Field Experience Hours
EDUC 215	Teaching as a Profession (1)	12 Field Experience Hours
EDUC 342	Pedagogy & Assessment: Secondary/K-12 (3)	20 Field Experience Hours
EDUC 343	Teaching to Diversity (3)	20 Field Experience Hours
EDUC 442	Integrating Literacy Across the Curriculum (4)	60 Field Experience Hours
EDUC 497	Content Methodology Practicum (3)	80 Field Experience Hours
EDUC 497D	Methods of Teaching Secondary Science* (2)	
EDUC 499G	Teaching Internship and Colloquium (12)	600 Field Experience Hours

Students must PASS the PRAXIS II exam in the content area prior to commencing the internship. Also, ALL other coursework toward the degree must be successfully completed prior to the internship.

Prerequisites for EDUC 342 and subsequent courses: ENGL 111, ENGL 112, ESSL 200, ESSL 290, PSYC 233, EDUC 115 and EDUC 215 (all with a grade of B or better) and formal acceptance to the Teacher Education Program. **All EDUC prefix courses listed above must be completed with a grade of B or better to progress through the program sequence.**

*This course is only offered in the fall semester. It may be taken with either the 300-level or 400-level EDUC courses but must be taken before the student teaching semester.

POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.** You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December.**
3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
5. NOTE: During your senior year, you will be required to take a capstone exit assessment/project (e.g., Major Field Achievement Test).

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN BIOLOGY – LEADING TO SECONDARY TEACHER LICENSURE

This is a recommended sequence of course work. Certain courses may have prerequisites or are only offered during the Fall or Spring semesters. It is the student's responsibility to meet with the assigned advisor and check the two-year course matrix on the Colorado Mesa website for course availability.

FRESHMAN YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL 105	Attributes of Living Systems	BIOL 106	Principles of Animal Biology
BIOL 105L	Attributes of Living Systems Lab	BIOL 106L	Principles of Animal Biology Lab
ENGL 111	English Composition	ENGL 112	English Composition
CHEM 121	Principles of Chemistry	CHEM 122	Principles of Organic Chemistry
CHEM 121L	Principles of Chemistry Lab	CHEM 122L	Principles of Organic Chemistry Lab
MATH 113	College Algebra	STAT 200	Probability and Statistics
	<u>4</u>		<u>3</u>
	16		15

SOPHOMORE YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL 107	Principles of Plant Biology	GEOL 111	Principles of Physical Geology AND
BIOL 107L	Principles of Plant Biology Lab	GEOL 111L	Principles of Physical Geology Lab
PHYS 111	General Physics	<u>OR</u>	
PHYS 111L	General Physics Lab	GEOL 113	Field-Based Intro to Physical Geol AND
PSYC 233	Human Growth and Development	GEOL 113L	Field-Based Intro to Physical Geol Lab
ESSL 290	Maverick Milestone	PHYS 112	General Physics
ESSL 200	Essential Speech	PHYS 112L	General Physics Lab
	<u>1</u>	ESSL	Natural Science
	16	<u>OR</u>	
		BIOL 385	Nature and Philosophy of Science
		EDUC 115*	What It Means to be a Teacher
		KINE 100	Health and Wellness
		KINA	Activity
			<u>1</u>
			15

JUNIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
EDUC 215*	Teaching as a Profession	EDUC 342	Pedagogy & Assessment: Secondary/K-12
GEOL 112	Principles of Historical Geology	EDUC 343	Teaching to Diversity
GEOL 112L	Principles of Historical Geology Lab	BIOL 385	Nature and Philosophy of Science
Electives	Upper Division Biology course	<u>OR</u>	
ESSL	History	ESSL	Natural Science
ESSL	Humanities	Electives	Upper Division Biology course
	<u>3</u>	ESSL Social and Behavioral Science	<u>3</u>
	15		16

*Must be taken prior to acceptance into the Center for Teacher Education. Offered in summer, fall and spring semesters.

SENIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL 483	Senior Thesis	EDUC 499G	Teaching Internship/Colloquium: Secondary
EDUC 442	Integrating Literacy Across the Curriculum		<u>12</u>
EDUC 497	Content Methodology Practicum		
EDUC 497D**	Methods of Teaching Secondary Science		
ESSL	Fine Arts		
Elective	<u>1</u>		
	15		

**Only offered in fall.