



2008 – 09 PETITION/PROGRAM SHEET
Degree: Bachelor of Science
Major: Biological Sciences
Concentration: Biology
www.mesastate.edu/schools/snsn/biology/program.htm

About This Major . . .

The Biology Program provides a broad background in the biological sciences. Students choose biology courses from four areas: cell, developmental, and molecular biology; anatomical and physiological biology; organismal biology; and ecology, evolution, and systematics. Students wishing to obtain teacher certification complete a concentration in Teacher Licensure. The Biology Program also offers field courses on tropical ecosystems in Ecuador and on marine invertebrate communities in Oregon. The Department of Biology operates the only electron microscope facility in the area. Graduates of our program pursue careers in the medical field, pest control, plant pathology, wildlife biology, cell biology and biotechnology, among just a few of the career options opened with a Biology degree from Mesa State College.

POLICIES:

1. It is your responsibility to determine whether you have met the requirements for your degree. Please see the MSC Catalog for a complete list of graduation requirements.
2. 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. 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.**
4. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature.
5. Finally, the Department Head or the department administrative assistant will take the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
6. 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.
7. NOTE: The semester before the semester you graduate, you will be required to take a Major Field Achievement Test (exit exam).

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 further certify that the grade listed for those courses is the final course grade received 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

Signature of Department Head

Date

Signature of Registrar

Date

Students should work closely with a faculty advisor when selecting and scheduling courses prior to registration.

Degree Requirements:

- Must earn 120 semester hours total and meet the academic residency requirements to earn a baccalaureate degree at Mesa State College.
- 40 upper division credits (i.e., 300-level and 400-level courses).
- 2.0 cumulative GPA or higher in all MSC coursework
- A 2.5 GPA is required in the major courses. A "C" or higher is required in all major courses.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- Program sheets are for advising purposes only. Because a program may have requirements specific to the degree, check with your advisor for additional guidelines, including prerequisites, grade point averages, grades, exit examinations, and other expectations. It is the student's responsibility to be aware of, and follow, all guidelines for the degree being pursued. Any exceptions or substitutions must be approved by the faculty advisor and/or Department Head. Courses related to teacher licensure must also be approved by the Teacher Education Dept.
- When filling out the program sheet a course can be used only once.
- See the "Undergraduate Graduation Requirements" in the Mesa State College catalog for additional graduation information.

GENERAL EDUCATION REQUIREMENTS (31 semester hours)

See the current Mesa State College catalog for a list of courses that fulfill the requirements below. If a course is on the general education list of options and a requirement for your major, you must use it to fulfill the major requirement and make a different selection within the general education requirement.

Course	No	Title	Sem.hrs	Grade	Term/Trns
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English (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)

ENGL 111	English Composition	3			
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ENGL 112	English Composition	3			
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(ENGL 129, Honors English, may be substituted for ENGL 111 & ENGL 112.)

Math: (3 semester hours, must receive 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 General Ed requirements and 1 credit applies to elective credit

Humanities (3 semester hours)

_____	_____	_____	_____	_____	_____
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Social and Behavioral Sciences (6 semester hours)

_____	_____	_____	_____	_____	_____
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Natural Sciences (7 semester hours, one course must include a lab)

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History (3 semester hours)

HIST	_____	_____	_____	_____	_____
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Fine Arts (3 semester hours)

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Course	No	Title	Sem.hrs	Grade	Term/Trns
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OTHER LOWER DIVISION REQUIREMENTS (6 semester hours)

Kinesiology (3 semester hours)

KINE 100	Health and Wellness	1			
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KINA 1	_____	1			
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KINA 1	_____	1			
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Applied Studies (3 semester hours)

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BACHELOR OF SCIENCE DEGREE DISTINCTION

REQUIREMENTS (6 semester hours) Must receive a grade of "C" or better.

STAT 200	Probability and Statistics	3			
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OR

*MATH 146	Calculus for Biological Sciences	3			
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*If MATH 146 is taken, 2 credits apply to elective credit

Humanities or Social/Behavioral Sciences: (3 semester hours)

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BIOLOGICAL SCIENCES MAJOR REQUIREMENTS

(62 semester hours) A 2.5 GPA is required in the major courses. A "C" or higher is required in all major courses.

Required Core Courses (21 semester hours)

BIOL 105	Attributes of Living Systems	3			
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BIOL 105L	Attributes of Living Systems				
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	Lab	1			
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BIOL 106	Principles of Animal Biology	3			
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BIOL 106L	Principles of Animal Biology				
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	Lab	1			
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BIOL 107	Principles of Plant Biology	3			
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BIOL 107L	Principles of Plant Biology Lab	1			
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BIOL 208	Ecology and Evolution	3			
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BIOL 208L	Ecology and Evolution Lab	1			
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BIOL 301	Principles of Genetics	3			
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BIOL 301L	Principles of Genetics Lab	1			
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BIOL 483	Senior Thesis	2			
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Required Related Study Area (20 semester hours): (Should be completed by the end of the sophomore year.)

CHEM 131*	General Chemistry	4			
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CHEM 131L*	General Chemistry Lab	1			
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CHEM 132*	General Chemistry	4			
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CHEM 132L*	General Chemistry Lab	1			
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PHYS 111*	General Physics	4			
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PHYS 111L*	General Physics Lab	1			
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PHYS 112*	General Physics	4			
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PHYS 112L*	General Physics Lab	1			
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* A higher level subject may be taken in the same category with advisor approval.

Course No Title Sem.hrs Grade Term/Trns

Additional Biology Courses (20 semester hours) At least 50% must be at the 300 level or above. Courses must be selected from three of the following four areas: (1) Cell, Developmental, and Molecular; (2) Organismal; (3) Anatomical and Physiological; (4) Ecology, Evolution, and Systematics. At least ONE of the following must be included: BIOL 302/302L, BIOL 341/341L, OR BIOL 421/421L.

Category 1: BIOL 302/302L, BIOL 310/310L, BIOL 335/335L, BIOL 343/343L, BIOL 344-344L, BIOL 425, BIOL 442, CHEM 315/315L

_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____

Category 2: BIOL 221/221L, BIOL 250/250L, BIOL 331/331L, BIOL 333, BIOL 335/335L, BIOL 336, BIOL 350/350L, BIOL 411/411L, BIOL 412/412L, BIOL 413/413L, BIOL 416/416L, BIOL 431/431L, BIOL 433, BIOL 450/450L

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Category 3: BIOL 209/209L, BIOL 210/210L, BIOL 241, BIOL 341/341L, BIOL 342/342L, BIOL 421/421L, BIOL 423/423L, BIOL 426, 426L, BIOL 441/441L

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Course No Title Sem.hr Grade Term/Trns

Category 4: BIOL 211/211L, BIOL 315, BIOL 320, 321/321L, BIOL 403, BIOL 405/405L, BIOL 406, BIOL 407BIOL 408, BIOL 414/414L, BIOL 415
BIOL 418/418L

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

*MATH 113	College Algebra	1	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Additional Biology Courses (20 semester hours minimum) At least 50% must be at the 300 level above. Courses must be selected from three of the following four areas*:

Category 1:Cell, Developmental and Molecular

†BIOL 302/302L Cellular Biology and Lab
BIOL 310/310L Developmental Biology and Lab
BIOL 343/343L Immunology and Lab
BIOL 344/344L Forensic Molecular Biology and Lab
BIOL 425 Molecular Genetics
BIOL 442 Pharmacology
CHEM 315/315L Biochemistry and Lab

Category 2: Organismal

BIOL 221/221L Plant Identification and Lab
BIOL 250/250L Intro to Medical Microbiology and Lab
BIOL 331/331L Insect Biology and Lab
BIOL 333 Marine Biology
BIOL 335/335L Invertebrate Zoology and Lab
BIOL 336 Fish Biology
BIOL 350/350L Microbiology and Lab
BIOL 411/411L Mammalogy and Lab
BIOL 412/412L Ornithology and Lab
BIOL 413/413L Herpetology and Lab
BIOL 416/416L Ethology and Lab
BIOL 431/431L Animal Parasitology and lab
BIOL 433 Marine Invertebrate Communities
BIOL 450/450L Mycology and Lab

Category 3: Anatomical and Physiological

BIOL 209/209L Human Anatomy & Physiology I and Lab
BIOL 210/210L Human Anatomy & Physiology II and Lab
BIOL 241 Pathophysiology
†BIOL 341/341L General Physiology and Lab
BIOL 342/342L Histology and Lab
†BIOL 421/421L Plant Physiology and Lab
BIOL 423/423L Plant Anatomy and Lab
BIOL 426/426L Intro to Electron Microscopy and Lab
BIOL 441/441L Endocrinology and Lab

Category 4: Ecology, Evolution, and Systematics

BIOL 211/211L Ecosystem Biology and Lab
BIOL 315 Epidemiology
BIOL 320 Plant Systematics
BIOL 321/321L Taxonomy of Grasses and Lab
BIOL 403 Evolution
BIOL 405/405L Adv. Ecological Methods and Lab
BIOL 406 Plant-Animal Interactions
BIOL 407 Tropical Field Biology
BIOL 408 Desert Ecology
BIOL 414/414L Aquatic Biology and Lab
BIOL 415 Tropical Ecosystems
BIOL 418/418L Wild Life Management and Lab

* Category appropriate topics or elective courses may be used with Advisor approval.

† At least one of these lecture/lab courses must be included.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN BIOLOGICAL SCIENCES – BIOLOGY

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 2 year course matrix on the Mesa State website for course availability.

FRESHMAN YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL 105	3	BIOL 106	3
BIOL 105L	1	BIOL 106L	1
CHEM 131	4	CHEM 132	4
CHEM 131L	1	CHEM 132L	1
MATH 113*	4	MATH 146*	5
KINE 100	1	STAT 200	3-5
KINA	1	General Education Fine Arts	3
	15		15-17

*Professional schools (medical, veterinary, dental) may require one or two semesters of calculus. Math 151 and 152 will fulfill the MATH requirement.

SOPHOMORE YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL 107	3	BIOL 208	3
BIOL 107L	1	BIOL 208L	1
PHYS 111	4	PHYS 112	4
PHYS 111L	1	PHYS 112L	1
ENGL 111	3	ENGL 112	3
General Education Social/Behavioral Sciences	3	General Education History	3
	15		15

JUNIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL XXX (selected from list)	7	BIOL XXX (selected from list)	7
BIOL 301	3	Degree Distinction Social/Behavioral Science or Humanities	3
BIOL 301L	1	General Education Social/Behavioral Science	3
General Education Humanities	3	Electives	3
KINA	1		16
	15		

SENIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
BIOL XXX (selected from list)	6	BIOL 483	2
General Education Natural Science	3	General Education Natural Science with Lab	4
General Education Applied Studies	3	Electives#	6-8
Electives#	3		12-14
	15		

Professional schools (medical, veterinary, dental) may require one or two semesters of organic chemistry, which may be taken to fulfill part of the electives.