



**2007 – 08 PETITION/PROGRAM SHEET**  
**Degree: Bachelor of Science**  
**Major: Environmental Science and Technology**  
**Concentration: Environmental Science**  
[www.mesastate.edu/schools/snsn/environsc](http://www.mesastate.edu/schools/snsn/environsc)

**About This Major . . .**

Our goal is to educate students in the science, protection, and restoration of our natural resources—air, water, land, and ecosystems. Our students develop a solid foundation in biology, chemistry, geology, mathematics, statistics, and communication skills, then apply this knowledge to the study and solution of environmental problems. We balance theory with hands-on practice, and include considerable work outdoors in our spectacular local environment. Individual and group projects are a key part of our courses. We also have students taking part in work done through partnerships with organizations such as the Colorado National Monument and the Colorado Division of Minerals and Geology. Students pursuing this degree must select one of the following three concentrations: Environmental Restoration and Waste Management; Environmental Science; and Environmental Science Education.

The concentration in Environmental Science focuses on management of natural resources. Students learn not only the basic science of air, water, soils, and ecosystems, but strategies for protection and restoration of these resources as well. Field work and projects are a key part of the coursework. This concentration is particularly appropriate for students planning to attend graduate school.

Graduates from this concentration are working for consulting firms and government agencies such as the U.S. Bureau of Land Management and the U.S. Geological Survey. Several of our students have also gone on to graduate school at the Colorado School of Mines and Colorado State University, among others.

**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 graduation, 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 \_\_\_\_\_ 20  
 Date

\_\_\_\_\_  
 Signature of Department Head \_\_\_\_\_ 20  
 Date

\_\_\_\_\_  
 Signature of Registrar \_\_\_\_\_ 20  
 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).
- 2.00 cumulative GPA or higher in all MSC coursework
- A "C" or higher is required in all courses listed as major requirements.
- Excess KINA courses beyond the two required and 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 \_\_\_\_\_  
ENGL 112 English Composition 3 \_\_\_\_\_  
(ENGL 129, Honors English, may be substituted for ENGL 111 & ENGL 112.)

**Math:** MATH 113 or higher (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\* \_\_\_\_\_  
\*3 credits apply to the General Ed requirements and 1 credit applies to elective credit

**Humanities** (3 semester hours)

\_\_\_\_\_

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

\_\_\_\_\_

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

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**History** (3 semester hours)

HIST \_\_\_\_\_

Course No	Title	Sem.hrs	Grade	Term/Trns
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**Fine Arts** (3 semester hours)

\_\_\_\_\_

**OTHER LOWER DIVISION REQUIREMENTS**

**Kinesiology** (3 semester hours)

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

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

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**ENVIRONMENTAL SCIENCE AND TECHNOLOGY – ENVIRONMENTAL SCIENCE MAJOR REQUIREMENTS** (64 semester hours) A "C" or higher is required in all courses listed as major requirements.

**Core Classes**

ENVS 110	Environmental Science and Technology I	3	_____	_____
ENVS 200	Field Methods in Environmental Science	1	_____	_____
ENVS 200L	Field Methods in Environmental Science Lab	1	_____	_____
ENVS 210	Environmental Science & Technology II	3	_____	_____
ENVS 312	Soil Properties & Characterization	3	_____	_____
ENVS 312L	Soil Properties & Characterization Lab	1	_____	_____
ENVS 331	Water Quality	3	_____	_____
ENVS 331L	Water Quality Lab	1	_____	_____
ENVS 340	Air Quality & Pollution Control	3	_____	_____
ENVS 455	Restoration Ecology	3	_____	_____
ENVS 492	Capstone in Environmental Science & Technology	2	_____	_____
POLS 488	Environmental Politics	3	_____	_____
MATH 151 or MATH 146:				
MATH	_____	5	_____	_____
BIOL 107 and BIOL 107L or BIOL 211 and BIOL 211L:				
BIOL	_____		_____	_____
BIOL	_____		_____	_____
CHEM 121/121L and CHEM 122/122L or CHEM 131/131L and CHEM 132/132L:				
CHEM	_____	4	_____	_____
CHEM	_____	1	_____	_____
CHEM	_____	4	_____	_____
CHEM	_____	1	_____	_____

Course No Title Sem.hrs Grade Term/Trns  
6 semester hours selected from Biology, Chemistry, Geology, or Physics. See list of approved courses on page 3.

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Restricted Electives: Choose a minimum of 11 semester hours from ENVS 301, ENVS 313/313L, ENVS 315, ENVS 321, ENVS 332/332L, ENVS 350/350L, ENVS 360/360L, ENVS 396, ENVS 413, ENVS 420/420L, ENVS 431, ENVS 433, ENVS 460/460L, ENVS 496, ENVS 497

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**Required Courses:**

One of the two Biology course combinations:  
 BIOL 107/107L Plant Biology and Lab  
 BIOL 211/211L Ecosystem Biology and Lab

One of the following:  
 MATH 146 Calculus for Biological Sciences  
 MATH 151 Calculus I

Restricted Electives – 11 semester hours chosen from:  
 ENVS 301 Environmental Project Management  
 ENVS 313 Characterization Of Contaminated Sites  
 ENVS 313L Characterization Of Contaminated Sites Lab  
 ENVS 315 Mined Land Rehabilitation  
 ENVS 321 Environmental Risk Analysis  
 ENVS 332 Introduction to GIS  
 ENVS 332L Introduction to GIS Lab  
 ENVS 350 Ecol/Mgmt. Shrublands/Grasslands  
 ENVS 350L Ecol/Mgmt. Shrublands/Grasslands Lab  
 ENVS 360 Fire Ecology

6-8 Semester Hours chosen from the following:  
 BIOL 105/105L Attributes of Living Systems and Lab  
 BIOL 106/106L Principles Of Animal Biology and Lab  
 BIOL 107/107L Principles Of Plant Biology and Lab  
 BIOL 211/211L Ecosystem Biology and Lab  
 BIOL 221/221L Plant Identification and Lab  
 BIOL 231/231L Invertebrate Zoology and Lab  
 BIOL 315 Epidemiology  
 BIOL 321/321L Taxonomy of Grasses and Lab  
 BIOL 331/331L Insect Biology and Lab  
 BIOL 350/350L Microbiology and Lab  
 BIOL 405/405L Advanced Ecological Methods and Lab  
 BIOL 406/406L Plant-Animal Interactions and Lab  
 BIOL 411/411L Mammalogy and Lab  
 BIOL 412/412L Ornithology and Lab  
 BIOL 413/413L Herpetology

Course No Title Sem.hrs Grade Term/Trns

**Electives** (All college level courses appearing on your final transcript, **not listed above** that will bring your total semester hours to 120 hours. Excludes KINA activity courses.) (13 semester hours; additional upper division hours may be needed.)

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

One of the two following Chemistry course combinations:  
 CHEM 121/121L **and** CHEM 122/122L Principles of Chemistry and Lab **or**  
 CHEM 131/131L **and** CHEM 132/132L General Chemistry and Lab

ENVS 360L Fire Ecology Lab  
 ENVS 396 Topics  
 ENVS 413 Env. Fate & Transport of Contaminants  
 ENVS 420 Adv. Env. Samp. & Analytical Methods  
 ENVS 420L Adv. Env. Samp. & Analytical Methods Lab  
 ENVS 431 Water & Wastewater Treatment  
 ENVS 433 Restoration of Aquatic Systems  
 ENVS 460 Fire Management  
 ENVS 460L Fire Management Lab  
 ENVS 496 Topics  
 ENVS 497 Structured Research

BIOL 414/414L Aquatic Biology  
 BIOL 415/415L Tropical Ecosystems and Lab  
 GEOL 111/111L Principles Of Physical Geology and Lab  
 GEOL 321/321L Intro to Remote Sensing and Lab  
 GEOL 325 Introduction to Engineering Geology  
 GEOL 333 Geology of the Canyon Country  
 GEOL 351 Applied Geochemistry  
 GEOL 355 Basic Hydrology  
 GEOL 402/402L App. of Geomorphology and Lab  
 GEOL 404/404L Geophysics and Lab  
 GEOL 415/415L Intro to Ground Water and Lab  
 GEOL 455 River Dynamics  
 PHYS 111/111L General Physics and Lab  
 PHYS 112/112L General Physics and Lab

**SUGGESTED COURSE SEQUENCING FOR A MAJOR IN  
ENVIRONMENTAL SCIENCE AND TECHNOLOGY – ENVIRONMENTAL SCIENCE**

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 their advisor and check the 2 year course matrix on the Mesa State website for course availability.

**FRESHMAN YEAR**

<b>Fall Semester</b>			<b>Spring Semester</b>		
		<b>Hours</b>			<b>Hours</b>
ENVS 110	Environmental Science & Technology I	3	ENVS 210	Environmental Science & Technology II	3
ENGL 111	English Composition	3	ENGL 112	English Composition	3
MATH 113	College Algebra	4	STAT 200	Probability and Statistics	3
General Education Natural Science		3	General Education Natural Science with Lab		4
General Education History		<u>3</u>	General Education Applied Studies		<u>3</u>
		16			16

**SOPHOMORE YEAR**

<b>Fall Semester</b>			<b>Spring Semester</b>		
		<b>Hours</b>			<b>Hours</b>
ENVS 200	Field Methods in Environmental Science	1	Required Chemistry/Lab Combination		5
ENVS 200L	Field Methods in Env. Science Lab	1	Required Biology/Geology/Physics from list		4
Required Chemistry/Lab Combination		5	General Education Humanities		3
Required Math – MATH 146 <u>or</u> MATH 151		5	General Education Social/Behavioral Science		<u>3</u>
General Education Social/Behavioral Science		3			15
KINA	Activity	<u>1</u>			
		16			

**JUNIOR YEAR**

<b>Fall Semester</b>			<b>Spring Semester</b>		
		<b>Hours</b>			<b>Hours</b>
ENVS 331	Water Quality	3	ENVS 340	Air Quality and Pollution Control	3
ENVS 331L	Water Quality Lab	1	Required Biology/Geology/Physics from list		4
BIOL 211	Ecosystem Biology	4	Unrestricted Electives		<u>7</u>
BIOL 211L	Ecosystem Biology lab	1			14
POLS 488	Environmental Politics	3			
General Education Social/Behavioral Science or Humanities		<u>3</u>			
		15			

**SENIOR YEAR**

<b>Fall Semester</b>			<b>Spring Semester</b>		
		<b>Hours</b>			<b>Hours</b>
ENVS 312	Soil Properties and Characterization	3	ENVS 492	Capstone in ENVS	2
ENVS 312L	Soil Properties and Characterization Lab	1	ENVS 455	Restoration Ecology	3
Electives (Restricted)		4	General Education Fine Arts		3
Electives (Unrestricted)		3-6	Electives (Restricted)		7
KINA	Activity	<u>1</u>	KINE 100	Health and Wellness	<u>1</u>
		12-15			16