



2005 – 06 PETITION/PROGRAM SHEET
Degree: Bachelor of Science
Major: Environmental Science and Technology
Concentration: Environmental Science
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 your MSC Catalog for a complete list of graduation requirements.
2. You must go to the Registrar’s Office and fill out the “Intent to Graduate” form **at the beginning of the semester prior to graduating.**
3. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to graduating, no later than September 15 for Spring graduates, February 15 for Fall graduates.**
4. Your advisor will sign and forward the Program Sheet, Intent to Graduate Form, 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

- Must earn 120 semester hours and meet the academic residency requirements to earn a baccalaureate degree at Mesa State College.
- Must earn a minimum of 40 semester hours in upper division courses (i.e., 300-level and 400-level courses).
- A cumulative grade point average of 2.0 or higher must be maintained for all courses.
- A “C” or higher is required in all courses listed as major requirements.
- When filling out this program sheet a course can only be used once, i.e., no double counting is allowed between categories.
- Excess HPWE courses beyond the two required and pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- All degree requirements must be completed as described. Any exceptions or substitutions must be recommended in advance by the faculty advisor and approved by the Department Head.
- It is recommended that students work closely with a faculty advisor when selecting courses and scheduling classes prior to registration.
- Students are required to participate in exit examinations or other programs deemed necessary to comply with the college accountability requirement.

General Education Requirements (Minimum of 33 semester hours) See the M.S.C. catalog for the list of courses that meet the general education categories.

Course No. Credit Grade Term Year Trns/Subs

English: ENGL 111 and 112 (6 semester hours, must receive a “C” or higher, must be completed by the time the student has 60 semester hours)

*ENGL _____

*ENGL _____

*ENGL 129, Honors English, may be substituted for ENGL 111 and ENGL 112. Must earn a grade of “C” or better. May need to take additional electives.

Humanities: (6 semester hours)

Social and Behavioral Sciences: (6 semester hours)

Course No. Credit Grade Term Year Trns/Subs

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

Fine Arts: (3 semester hours)

Natural Sciences: (minimum 6 semester hours, at least one course must include a lab)

Applied Studies: (3 semester hours)

Other Requirements (10 semester hours)

Human Performance and Wellness: (3 Semester Hours)

Course No. Credit Grade Term Year Trns/Subs

HPWA 100 1 _____

HPWE _____ 1 _____

HPWE _____ 1 _____

See the M.S.C. catalog for the list of approved HPWE Activity courses.

Bachelor of Science Degree Distinction:

(7 semester hours) Must earn a “C” or better in both courses.

Course No. Credit Grade Term Year Trns/Subs

MATH* 113 4 _____

STAT 200 3 _____

*Math 113 or higher level math as approved by advisor

Environmental Science and Technology – Environmental Science Major Requirements (minimum 64 Semester Hours)

A “C” or higher is required in all courses listed as major requirements.

Course No. Credit Grade Term Year Trns/Subs

ENVS 110 3 _____

ENVS 200 1 _____

ENVS 200L 1 _____

ENVS 210 3 _____

ENVS 312 3 _____

ENVS 312L 1 _____

ENVS 331 3 _____

ENVS 331L 1 _____

ENVS 340 3 _____

ENVS 455 3 _____

Course No. Credit Grade Term Year Trns/Subs

ENVS 492 2 _____

POLS 488 3 _____

*MATH 151 or MATH 146 or 300-level Statistics Course

* _____

BIOL 211 4 _____

BIOL 211L 1 _____

**CHEM 121/121L and CHEM 122/122L or

CHEM 131/131L and CHEM 132/132L

**CHEM _____ 4 _____

**CHEM _____ 1 _____

Continued on page 3

Course	No.	Credit	Grade	Term	Year	Trns/Subs	Course	No.	Credit	Grade	Term	Year	Trns/Subs
6-8 semester hours selected from Biology, Chemistry, Geology, or Physics. See list of approved courses on page 4.													
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
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 396, ENVS 413, ENVS 420/420L, ENVS 431, ENVS 433, ENVS 496, ENVS 497													
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

Electives (All college level courses appearing on your final transcript, not listed above that will bring your total semester hours to 120 hours. Excludes HPWE activity courses.) (13 semester hours; additional upper division hours may be needed.)													
Course	No.	Credit	Grade	Term	Year	Trns/Subs	Course	No.	Credit	Grade	Term	Year	Trns/Subs
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

GRADUATION INFORMATION

See the "Undergraduate Graduation Requirements" in the Mesa State College catalog for additional graduation information.

GENERAL EDUCATION REQUIREMENTS (Minimum of 33 Semester Hours) See current Mesa State College catalog for list of courses that fulfill the requirements below. If one (or more) of the selections below is required in your major, you must use it to fulfill the major requirement and **make a different selection to meet the general education requirement. The courses may not be used to fulfill both requirements.**

English – 6 Semester Hours (Must be **completed** before student has 60 semester hours. Must receive grade of "C" or above.)

ENGL 111 and ENGL 112 or ENGL 129 (*by permission*)

Humanities – 6 semester hours

Social and Behavioral Sciences – 6 semester hours

Humanities or Social/Behavioral Sciences – 3 semester hours

Fine Arts – 3 semester hours

Natural Sciences – 6 semester hours (At least one course must include a lab.)

Applied Studies – 3 semester hours

OTHER REQUIREMENTS (10 Semester Hours)

Human Performance and Wellness – 3 Semester Hours

Each student must take HPWA 100 together with two HPWE Activity courses. See current catalog for listing.

Degree Distinction – 7 Semester Hours

MATH 113 College Algebra (Or a higher level math as approved as approved by advisor) – 4 semester hours

STAT 200 Probability and Statistics - 3 semester hours

Environmental Science and Technology – Environmental Science (minimum 64 Semester Hours)

A “C” or higher is required in all courses listed as major requirements.

Required Courses:

ENVS 110 Environmental Science and Technology I
ENVS 200 Field Methods in Environmental Science
ENVS 200L Field Methods in Environmental Science Laboratory
ENVS 210 Environmental Science & Technology II
ENVS 312 Soil Properties & Characterization
ENVS 312L Soil Properties & Characterization Laboratory
ENVS 331 Water Quality
ENVS 331L Water Quality Laboratory
ENVS 340 Air Quality & Pollution Control
ENVS 455 Restoration Ecology
ENVS 492 Capstone in Environmental Science & Technology
POLS 488 Environmental Politics
BIOL 211/211L Ecosystem Biology and Lab

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

One of the following:

MATH 146 Calculus for Biological Sciences
MATH 151 Calculus I
300-level Statistics course

Restricted Electives – 11 semester hours chosen from:

ENVS 301 Environmental Project Management
ENVS 313 Char. Of Contaminated Sites
ENVS 313L Char. Of Contaminated Site Lab
ENVS 315 Mined Land Reclamation
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 396 Topics
ENVS 413 Env. Fate & Transport of Contaminants
ENVS 420 Adv. Env. Samp. & Analytical Methods
ENVS 420L Adv. Env. Samp. & Anal. Meth. Lab
ENVS 431 Water & Wastewater Treatment
ENVS 433 Restoration of Aquatic Systems
ENVS 496 Topics
ENVS 497 Structured Research

6-8 Semester Hours chosen from the following:

BIOL 105/105L Attrib. of Living Systems and Lab
BIOL 106/106L Princ. Of Animal Biology and Lab
BIOL 107/107L Princ. 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 Adv. 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
BIOL 414/414L Aquatic Biology
BIOL 415/415L Tropical Ecosystems and Lab
GEOL 111/111L Princ. 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
PHYS 111/111L General Physics and Lab
PHYS 112/112L General Physics and Lab

General Electives: 13 Semester Hours; additional upper division hours may be needed.

Students are required to participate in exit examinations or other programs deemed necessary to comply with the college accountability requirement. All degree requirements must be completed as described above. Any exceptions or substitutions must be recommended in advance by the faculty advisor and approved by the Department Head.

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

FRESHMAN YEAR

<u>Fall Semester</u>	<u>Hours</u>	<u>Spring Semester</u>	<u>Hours</u>
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	3-4
General Education Humanities	<u>3</u>	General Education Applied Studies	<u>3</u>
	16		15-16

SOPHOMORE YEAR

<u>Fall Semester</u>	<u>Hours</u>	<u>Spring Semester</u>	<u>Hours</u>
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 <u>or</u> STAT 3XX 300 Level Statistics Course	3-5	General Education Social/Behavioral Science	<u>3</u>
General Education Social/Behavioral Science	3		15
HPWE Activity	<u>1</u>		
	14-16		

JUNIOR YEAR

<u>Fall Semester</u>	<u>Hours</u>	<u>Spring Semester</u>	<u>Hours</u>
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

<u>Fall Semester</u>	<u>Hours</u>	<u>Spring Semester</u>	<u>Hours</u>
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)	4-6	Electives (Restricted)	7
HPWE Activity	<u>1</u>	HPWA 100 Health and Wellness	<u>1</u>
	13-15		16