

ECOLOGY AND ENVIRONMENTAL MANAGEMENT EMPHASIS (WITH A 3+2 MASTER IN ENVIRONMENTAL MANAGEMENT)

The Environmental Management emphasis allows students to complete the B.S. in Biology (BIOL) and the Master in Environmental Management (MEM) at Western in five years. To remain qualified for the 3+2, after 67 credits each student must have:

- maintained a 3.0 cumulative GPA and a 3.25 GPA within the major;
- earned a B or above in two social science, two natural science (one with lab), and one statistics course;
- fulfilled the 3-credit Internship requirement with a B or above and positive letter from the project sponsor;
- provided three letters of recommendation, at least one of which is to be a professional reference and at least one of which is to be an academic reference from the student's major at Western;
- written a Statement of Purpose to the MEM program, detailing early career ambitions and ideas and connections for the eventual master's Project.

At this point, if any aspect of a student's performance is found to be insufficient, the MEM Director may reject a 3+2 student from the MEM program, in which case the student will need to find a new emphasis or minor in order to complete the undergraduate degree. In addition to meeting the requirements above, and after Junior Year (holding to the same GPA standards as outlined above) and completion of BIOL nucleus plus one systems and application course and one organismal course in the requirements (100 credits in this plan—see "Degree Plan" tab), the School of Graduate Studies will designate students as "MEM candidates with provisional acceptance." Upon completion of the final 26 credits of the Western B.S. after Year Four of this plan, the School of Graduate Studies will designate students as "MEM degree seeking students." Students who have completed all other requirements of the 3+2 program and all Western undergraduate requirements, yet choose to leave the MEM program before Year 5, will still have completed the BIOL undergraduate emphasis in Environmental Management and have earned the 120 credits necessary for a Western undergraduate degree.

Program Requirements

The Ecology and Environmental Management Emphasis requires a minimum of 83 credits, including the 26-credit Biology Nucleus, 19 additional credits in Biology, 15 credits of supporting courses, and 23 credits of MEM coursework. In the fifth year, an additional 23 credits of MEM coursework results in the MEM degree.

All Biology majors require the 26-credit Biology Nucleus.

Code	Title	Credits
Biology Nucleus		
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	4
BIOL 151	Diversity and Patterns of Life (with laboratory)	4

BIOL 301	General Ecology	3
BIOL 310	Cell Biology	3
BIOL 312	Genetics (with recitation)	4
CHEM 111	General Chemistry I (GT-SC2)	3
CHEM 112	General Chemistry Laboratory I (GT-SC1)	1
CHEM 113	General Chemistry II	3
CHEM 114	General Chemistry Laboratory II	1
Total Credits		26

Code	Title	Credits
Required Biology Courses		
BIOL 302	Ecology Laboratory and Recitation	2
Select six credits in two or more of the following systems and applications courses:		6
BIOL 362	Evolution	
BIOL 430	Wildlife Ecology and Management (with laboratory)	
BIOL 431	Wildlife Techniques Workshop	
BIOL 440	Conservation Biology	
BIOL 444	Colorado Ecoregions	
BIOL 476	Aquatic Ecology (with laboratory)	
BIOL 477	Plant Ecology (with laboratory)	
BIOL 481	Forest Ecology (with laboratory)	
Select two of the following organismal courses:		6-8
BIOL 320	Ornithology (with laboratory and recitation)	
BIOL 322	Mammalogy (with laboratory and recitation)	
BIOL 327	Field Entomology (with laboratory)	
BIOL 352	Botany (with laboratory)	
BIOL 353	Rocky Mountain Flora	
BIOL 355	Spring Fungi Rocky Mountains (with laboratory)	
BIOL 467	Biology of Fishes	
Select at least two credits of Capstone Experience courses:		2
BIOL 495	Senior Seminar (may be repeated)	
BIOL 496	Senior Thesis	
Total Credits		16-18

Code	Title	Credits
Minimum supporting courses		
CHEM 231	Introduction to Organic Chemistry and Biochemistry	3
CHEM 234	Introductory Organic and Biochemistry Laboratory	1
GEOL 101	Physical Geology (GT-SC2)	3
GEOL 105	Physical Geology Laboratory (GT-SC1)	1
MATH 213	Probability and Statistics (GT-MA1)	3
PHYS 140	Introductory Physics (with laboratory) (GT-SC1)	4
Total Credits		15

Code	Title	Credits
Core MEM Courses		
ENVS 601	Introduction to Environmental Management	5
ENVS 605	Science for Environmental Management	3
ENVS 608	Environmental Politics & Policy	3
ENVS 611	Integrative Skills for Environmental Management	3

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ENVS 612	Introduction to Analysis and Assessment for Environmental Management	3
ENVS 615	From Climate Science to Action	3
One of the following from the MEM emphasis:		3
Sustainable and Resilient Communities Emphasis:		
ENVS 616	Environmental Organization Development and Management	
Global Sustainability Emphasis:		
ENVS 617	Global Sustainability	
Integrative and Public Land Management Emphasis:		
ENVS 618	Public Lands Management	
Total Credits		23

Upon successful completion of the prescribed courses listed above, University defined General Education, and elective requirements totaling 120 credits (with 40 at the 300-level or higher), students are eligible for their B.S. conferral. Students electing to complete MEM must follow the balance of their declared emphasis curriculum.

For a full description of the required Graduate coursework, please see the appropriate MEM program in the Western Graduate Catalog (<https://catalog.western.edu/graduate/programs/environmental-management/>).

Capstone Course Requirement

The following courses in the Biology Major fulfill the capstone course requirement: BIOL 495 (<https://western-preview.courseleaf.com/search/?P=BIOL%20495>) SENIOR SEMINAR, BIOL 496 , or EDUC 409 (<https://western-preview.courseleaf.com/search/?P=EDUC%20409>) SECONDARY STUDENT TEACHING.

Course	Title	Credits
Year One		
Fall		
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	4
MATH 140	College Algebra (GT-MA1)	3
ENG 102	Writing and Rhetoric I (GT-CO1)	3
CHEM 111	General Chemistry I (GT-SC2)	3
CHEM 112	General Chemistry Laboratory I (GT-SC1)	1
HWTR 100	First Year Seminar	1
Credits		15
Spring		
BIOL 151	Diversity and Patterns of Life (with laboratory)	4
MATH 141	Precalculus (GT-MA1)	4
General Education course (Area I)		3
CHEM 113	General Chemistry II	3
CHEM 114	General Chemistry Laboratory II	1
ENG 103	Writing and Rhetoric II (GT-CO2)	3
Credits		18
Year Two		
Fall		
BIOL 301	General Ecology	3
BIOL 302	Ecology Laboratory and Recitation	2
CHEM 231	Introduction to Organic Chemistry and Biochemistry	3
CHEM 234	Introductory Organic and Biochemistry Laboratory	1
GEOL 101	Physical Geology (GT-SC2)	3
GEOL 105	Physical Geology Laboratory (GT-SC1)	1
General Education course (Area I)		3
Credits		16
Spring		
PHYS 140	Introductory Physics (with laboratory) (GT-SC1)	4

MATH 213	Probability and Statistics (GT-MA1)	3
General Education courses		6
Elective		3
Credits		16
Summer		
SCI 499	Internship in Science	1-5
67 credits completed (Submit 3+2 application materials by July 1)		
Credits		1-5
Year Three		
Fall		
BIOL 310	Cell Biology	3
Biology Elective (Organismal or Systems Biology elective)		4
General Education courses		6
Credits		13
Spring		
BIOL 312	Genetics (with recitation)	4
Biology Elective (Organismal or Systems Biology elective)		4
Electives		6
Credits		14
Summer		
ENVS 601	Introduction to Environmental Management	5
Credits		5
Year Four		
Fall		
Biology Elective (Organismal or Systems Biology elective)		3
ENVS 605	Science for Environmental Management	3
ENVS 608	Environmental Politics & Policy	3
ENVS 611	Integrative Skills for Environmental Management	3
BIOL 495	Senior Seminar	1
Credits		13
Spring		
ENVS 612	Introduction to Analysis and Assessment for Environmental Management	3
ENVS 615	From Climate Science to Action	3
ENVS 616	Environmental Organization Development and Management	3
or ENVS 618	or Public Lands Management	
Biology Elective (Organismal or Systems Biology elective)		3
BIOL 495	Senior Seminar	1
Credits		13
Summer		
ENVS 690	MEM Project Development	5
Credits		5
Year Five		
Fall		
ENVS 620	Studies in Sustainable and Resilient Communities	3
or ENVS 625	or Studies in Integrative and Public Land Management	
ENVS 625	Studies in Integrative and Public Land Management	3
or ENVS 620	or Studies in Sustainable and Resilient Communities	
ENVS 694	Master's Project and Portfolio	3-6
Credits		9-12
Spring		
ENVS 620	Studies in Sustainable and Resilient Communities	3
or ENVS 625	or Studies in Integrative and Public Land Management	
ENVS 694	Master's Project and Portfolio	6
Credits		9
Total Credits		147-154