Master of Science in Environmental Science and Management

Students entering the ENSM program are required to obtain interdisciplinary admission into the Department of Civil and Environmental Engineering and one other academic discipline (emphasis). Admission requirements vary between academic units, and there may be departmental requirements beyond those of the Department of Civil and Environmental Engineering that the student must fulfill to gain departmental admission. At least 30 credits are required for the degree, of which at least 15 must be at the 6600 level. At least 10 credits must be completed within the academic emphasis, with the remainder of the course work representing ENSM course work. No more than 9 credits may be transferred from another university, with the exception of courses from the University of Idaho, which will be accepted as resident credits. Students must have completed coursework equivalent to Idaho State University's MATH 1160 (http://coursecat.isu.edu/search/?P=MATH%201160) and Idaho State University's CHEM 1111 (http://coursecat.isu.edu/search/?P=CHEM%201111) and CHEM 1112 (http://coursecat.isu.edu/search/?P=CHEM%201112) with grades of "C" or better. Students with prerequisite course deficiencies may be admitted as Classified with Performance Requirements with the understanding that these requirements must be satisfied prior to graduation, and such efforts may not necessarily count toward graduation. Classified with Performance Requirements (w/PR) admission into the ENSM program is the prerogative of individual departments.

Thesis and non-thesis options are available for the ENSM degree. For the thesis option, a maximum of ten thesis credits may be counted toward the degree. For the non-thesis option, a maximum of three "Special Project" credits may be counted toward the degree. These credits may apply toward the requirement of 15 credits at the 6600 level. There are program-wide and department-specific requirements for the thesis and non-thesis options, and students must create a program of study in conjunction with their advisory committee. Students will register for thesis credits or non-thesis project credits in the home department of the thesis/project advisor. Some departments' "Special Project" courses may have a different title and/or course number.

Within the framework of the basic degree requirements, an advisory committee is chosen to work with the student to create an individualized program of study. The advisory committee consists of two faculty advisors: one from the Department of Civil and Environmental Engineering (CEE), and one from the student's other academic discipline (emphasis). The student's major advisor provides direction to the student regarding all relevant aspects of the program. All courses selected for fulfillment of the program of study must be approved by the advisory committee. The initial program of study must be submitted to the ENSM program director no later than the second semester of enrollment. Changes in the initial program of study may only be made with the approval of the student's advisory committee. The final program of study is submitted to the Graduate School for graduation clearance in accordance with Graduate School policy.

Required Courses

The following courses are required for every student receiving the M.S. degree in Environmental Science and Management.

Code	Title	Credits
ENVE 5510	Introduction to Environmental Engineering	3
ENGR 6655	Environmental Topics Seminar [1]	1
ENGR 6650	Thesis [2]	1-9
or ENGR 6660	Special Project	

1 Course must be completed two times in order to satisfy requirement. A student may select a seminar other than ENGR 6655 (http://coursecat.isu.edu/search/?P=ENGR%206655) offered in his/her interdisciplinary discipline with approval of the advisory committee.

2 Students will register for thesis or non-thesis "Special Project" credits in the home department of the thesis/non-thesis project advisor. Some departments' "Special Project" courses may have a different title and/or course number.

In addition, the following courses are required for students choosing chemistry, environmental engineering, or mathematics as the second academic emphasis. Coursework in other emphasis areas will be selected from elective courses with the approval of the advisory committee.

Chemistry Emphasis

Code	Title	Credits
CHEM 5533	Environmental Chemistry	2
CHEM 5537	Environmental Chemistry Laboratory	1

Environmental Engineering Emphasis

Code	Title	Credits
ENVE 5508	Water and Waste Water Quality	3
ENVE 5509	Water and Waste Water Lab	1
ENVE 5504	Environmental Risk Assessment	3

Mathematics Emphasis

Code	Title	Credits
MATH 5521	Advanced Engineering Mathematics I	3
MATH 5522	Advanced Engineering Mathematics II	3
MATH 5565	Partial Differential Equations	3
OR		
MATH 6664	Methods of Applied Mathematics I	
AND		
MATH 6665	Methods of Applied Mathematics II	

Elective Courses

Students will select a core of courses from the following list. (Students may select one or more courses not on this list, with the approval of the advisory committee, for the purpose of focusing students in a particular direction not covered by this abbreviated list.)

Chemistry Electives

Code	Title	Credits
CHEM 5507	Inorganic Chemistry II	2
CHEM 6601	Seminar	1
CHEM 6609	Advanced Inorganic Chemistry	3
CHEM 6630	Advanced Analytical Chemistry	3
CHEM 6621	Organic Reactions	3

CHEM 6655	Advanced Physical Chemistry	3
CHEM 6671	Advanced Organic Chemistry	3

Environmental Engineering Electives

Code	Title	Credits
ENVE 5508	Water and Waste Water Quality	3
ENVE 5509	Water and Waste Water Lab	1
ENVE 5530	Air Pollution and Solid Waste	3
ENVE 6610	Introduction to Radioactive Waste Management	3
ENVE 6611	Treatment Systems for Environmental Engineering	3
ENVE 6615	Water Quality Modeling and Control	3
ENVE 6617	Environmental Systems Engineering and Design	3
ENVE 6629	Physical and Chemical Treatment of Water and Waste Water	3
ENVE 6630	Air Pollution and Control	3
ENGR 6606	Environmental Law and Regulations	3
CE 5599	Experimental Course (Open Channel Flow)	3
CE 5535	Hydraulic Design	3
CE 5554	Basic Engineering Geology	3
CE 5555	Geologic Data Methods	3
NSEN 6618	Radioactive Waste Management	3
NSEN 6619	Materials Science of Radwaste	3

Geosciences Electives

Code	Title	Credits
GEOL 5504	Advanced Geographic Information Systems	3
GEOL 5509	Remote Sensing	3
GEOL 5515	Quaternary Global Change	4
GEOL 5516	Global Environmental Change	3
GEOL 5520	Principles of Geochemistry	3
GEOL 5530	Principles of Hydrogeology	3
GEOL 5554	Basic Engineering Geology	3
GEOL 5583	Earthquake Engineering	3
GEOL 6602	Advanced Geomorphology	3
GEOL 6608	Geostatistics Spatial Data Analysis and Modeling	3
GEOL 6617	Environmental Geochemistry	3
GEOL 6625	Quantitative Geochemistry Lab	3
GEOL 6630	Advanced Hydrogeology	3

Doctor of Philosophy in Engineering and Applied Science

A doctoral program in Engineering and Applied Science, administered through the College of Science and Engineering, is available to engineering students. The complete program description is provided in the Engineering and Applied Science (https://coursecat.isu.edu/graduate/scienceengineering/engineeringandappliedscience/) section of the Graduate Catalog.