

Environmental Science – Environmental Studies

Chemistry courses (4-8 credits):

CHEM 111 General Chemistry I (4 credits) *and* CHEM 112 General Chemistry II (4 credits)

or

CHEM 115 Accelerated General Chemistry (4 credits)

Mathematics courses (4-8 credits):

MATH 108 Calculus with Review I (4 credits) *and* MATH 109 Calculus with Review II (4 credits)

or

MATH 113 Calculus I (4 credits)

Statistics course (4 credits):

IDTH 220 Statistics I (4 credits) *or* MATH 303 Statistics for the Applied Sciences (4 credits)

Humanities and Policy/Economics courses (choose two of the following)(8 credits):

ECON 370 Environmental and Natural Resource Economics (4 credits)

ENVR 212 Social Dynamics and the Environment (4 credits)

ENVR 301 Environmental Ethics (4 credits) *or* PHIL 358 Environmental Ethics (4 credits)

ENVR 351 Environmental Policy (4 credits) *or* POLS 316 Environmental Policy (4 credits)

NOTE: Additional coursework in geographic information systems, environmental policy, economics, law, etc would lead to an even stronger degree program. ESCI and ENVR affiliated faculty can provide suggestions for additional courses, co-majors, and/or minors that might be applicable. Students pursuing graduate degrees in environmental science are strongly encouraged to take introductory physics courses (PHYS 111 and 112).

ESCI 310 Environmental Problem Solving (4 credits)

This course explores methods of solving environmental problems. These problems are by nature, interdisciplinary and are rarely addressed in a substantive fashion in traditional science textbooks. In this course, students and faculty work together to develop a working model of a critical earth system or biogeochemical cycle (i.e. the carbon or nitrogen cycle), and learn how to make calculations of human-induced changes to that system. Students from all concentrations of the environmental science major will work together on this interdisciplinary research project using modeling and systems analysis software to more fully understand specific environments and the quantitative methods of assessing challenges to those environments. This course should be taken by all ESCI students during their junior year. Prerequisite: Environmental Science majors should have completed BIOL 204, CHEM 201, or GEOL 211/252. Environmental Studies (ENVR) majors that wish to take this course should contact the ESCI program director or course instructor. ENVR majors with a social science, business, or humanities concentration may take this course after completion of their science sequence. ENVR majors with a science concentration must have completed their BIOL, CHEM, and GEOL requirements.

ESCI 390 Senior Research Seminar (4 credits)

This course is designed to fulfill the senior capstone experience in Environmental Science as it brings together students from all of the environmental science concentrations (biology, chemistry, and geology) to complete interdisciplinary research projects. In the semester prior to the course offering, Environmental Science majors, in consultation with their faculty advisers and the course instructor, will develop a research project that they will complete as part of this course. Students may also choose to more fully develop a research project in which they have been participating or propose a service-learning or community-based project. Furthermore, groups of students could propose to perform an interdisciplinary project. The format of this research is intentionally open-ended because it is meant to provide flexibility and choice to the students and the course instructor. Student-led seminars on topics of the students' choosing will comprise most weekly meetings, along with updates on research progress and a final presentation to the St. Thomas community on the outcome of the student's research projects. This course should be completed in the final Spring semester prior to graduation.

Prerequisite: ESCI 310 or permission of instructor; at least one ENVR course.

Environmental Studies (ENVR)

College of Arts and Sciences, Interdisciplinary Program

John Roach Center for the Liberal Arts (JRC) LL58, (651) 962-5046

Amel (PSYC), program director; Environmental Studies Committee: Emms (BIOL), George (ENGR), Degnan (PHIL), Hickson (GEOL), Hoffman (POLS), Lorah (GEOG), Wammer (CHEM)

The Environmental studies program provides students with a broad interdisciplinary background as well as a basis for career specialization and practical application and problem solving. The program is based upon an investigation both of the Earth's environment and the wide variety of human interactions with that environment. The program has three basic objectives:

1. to transmit an understanding of environmental problems and their complexities,
2. to motivate productive responses to those problems, both vocational and avocational, based on that understanding, and
3. to foster the development of critical, inquiring minds.

Environmental Studies

All students majoring in Environmental studies are required to take 36 credits in core courses, another 24 credits in concentration-area courses, and four credits in an allied course. The core courses are designed to provide the student with a foundation in the physical, social and ethical dimensions of environmental issues. Students graduating with a major in environmental studies will demonstrate their ability to integrate their liberal arts and professionally-oriented education. Students are encouraged, but not required, to take additional courses in writing and computer applications, and should consult the chair of the Environmental Studies Committee for recommendations.

The concentration area consists of a minimum of an additional 24 credits beyond the core. These courses are meant to deepen the student's understanding of the origin and complexity of environmental issues while focusing attention on one particular area of study (e.g., engineering, math, journalism, justice & peace, geology, English, sociology, etc.).

The student may

- a. choose to specialize in an existing area of study or
- b. may propose an individually designed concentration program.

In either case, students are required to submit a 6-course Concentration Area Proposal to the Governance Committee for approval. Students are strongly encouraged to discuss the formation of their concentration area with the director of the program or another member of the Governance Committee. Committee members can assist students in constructing successful concentration area proposals. Students are encouraged to identify their concentration area by the end of their sophomore year or the first semester of their junior year.

Major in Environmental Studies: Concentration Area in the Natural Sciences

ENVR 151 Humans and the Environment (4 credits)
ENVR 212 Social Dynamics and the Environment (4 credits)
ENVR 301 Environmental Ethics (4 credits)
ENVR 351 Environmental Policy Formation (4 credits)
ENVR 401 Field Seminar (4 credits)

Plus one additional non-natural-science course from the following:

BLAW 351 Environmental Law (4 credits)
COJO 372 Environmental Communication (4 credits)
ECON 370 Environmental and Natural Resource Economics (4 credits)
ENGR 123 Energy and the Environment (4 credits)
GEOG 331 Conservation Geography (4 credits)
PSYC 490 Eco-Psychology (4 credits)
PSYC 490 Conservation Psychology (4 credits)
Or other option with prior approval of the program director

Plus four credits from the following:

IDTH 220 Statistics I (4 credits)
MATH 303 Statistics for the Applied Sciences (4 credits)

Plus:

BIOL 102 Conservation Biology (4 credits)

or

BIOL 201 Diversity and Adaptation (4 credits)

Plus:

CHEM 101 Environmental Chemistry (4 credits)

or

CHEM 111 General Chemistry I (4 credits) *and* CHEM 112 General Chemistry II (4 credits)

or

CHEM 115 Accelerated General Chemistry (4 credits)

Plus:

GEOL 115 Environmental Geology *or one of* GEOL 110, 111, 113, 114 (4 credits each)

Plus:

Six courses in a Concentration Area determined in consultation with the program director. ESCI 310 and ESCI 390 are highly recommended.

Major in Environmental Studies: Concentration Area in Social Science, Business, or Humanities

ENVR 151 Humans and the Environment (4 credits)
ENVR 212 Social Dynamics and the Environment (4 credits)
ENVR 301 Environmental Ethics (4 credits)
ENVR 351 Environmental Policy Formation (4 credits)
ENVR 401 Field Seminar (4 credits)

Plus one of the three sequences below:

BIOL 102 Conservation Biology (4 credits)

CHEM 101 Environmental Chemistry (4 credits)
 GEOL 115 Environmental Geology *or one of* GEOL 110, 111, 113, 114 (4 credits each)
 GEOL 252 Geomorphology (4 credits) *or* GEOL 220 Oceanography (4 credits)

or

BIOL 201 Diversity and Adaptation (4 credits)
 BIOL 202 Genetics and Population Biology (4 credits)
 CHEM 101 Environmental Chemistry (4 credits)
 GEOL 115 Environmental Geology *or one of* GEOL 110, 111, 113, 114 (4 credits each)

or

BIOL 102 Conservation Biology (4 credits)
 CHEM 111 General Chemistry I (4 credits) *and* CHEM 112 General Chemistry II (4 credits), *or* CHEM 115 Accelerated General Chemistry (4 credits)
 GEOL 115 Environmental Geology *or one of* GEOL 110, 111, 113, 114 (4 credits each)

Plus four credits from the following:

MATH 303 Statistics for the Applied Sciences (4 credits)
 IDTH 220 Statistics I (4 credits)

Plus:

Six courses in a Concentration Area determined in consultation with the program director. ESCI 310 and ESCI 390 are highly recommended.

Minor in Environmental Studies

ENVR 151 Humans and the Environment (4 credits)
 ENVR 212 Social Dynamics of the Environment (4 credits)
 ENVR 301 Environmental Ethics (4 credits)
 ENVR 351 Environmental Policy Formation (4 credits)

Plus one additional environmentally-related course from the following:

BLAW 351 Environmental Law (4 credits)
 COJO 372 Environmental Communication (4 credits)
 ECON 370 Environmental and Natural Resource Economics (4 credits)
 ENGR 123 Energy and the Environment (4 credits)
 GEOG 331 Conservation Geography (4 credits)
 PSYC 490 Eco-Psychology (4 credits)
 PSYC 490 Conservation Psychology (4 credits)

Or other option with prior approval of the program director

ENVR 151 Humans and the Environment (4 credits)

A study of the interaction of humans and the environment over time and space; a broad introduction that integrates a variety of social-science perspectives into an understanding of the environment and the relations between humans and nature. Specific topics include ecology, population, economic development, resources and sustainable development. This course fulfills the second-level Computer Competency requirement in the core curriculum.

ENVR 212 Social Dynamics and the Environment (4 credits)

An emphasis on the ways in which people have created, and attempted to solve, environmental problems in different cultural and historical contexts. Examines the roles of the entire spectrum of actors and human communities, including individuals, families, groups and formal organizations, neighborhoods, cities and nations. Students examine how individual dynamics (such as altruism and economic self-interest) and collective dynamics (such as competition, cohesion, social definitional processes and global interdependence) direct humans in their interactions with the environment.

ENVR 295, 296 Topics (2 credits)

ENVR 297, 298 Topics (4 credits)

The subject matter of these courses will vary from year to year, but will not duplicate existing courses. Descriptions of these courses are available in the Searchable Class Schedule on Murphy Online, <https://banner.stthomas.edu/pls/banner/prod/bwckschd>.

ENVR 301 Environmental Ethics (4 credits) (equivalent to PHIL 358)

Consideration of the ethical issues arising from human interaction with the environment, including population pressure, pollution, conservation and preservation. Focus on the grounds of our obligation to resolve such issues; the question of what persons and things are worthy of moral consideration; and the respective roles of individuals, organizations and government in addressing environmental problems. Case studies will be used to trace the implications of various ethical and political theories.

Prerequisite: ENVR 151 and PHIL 214

Environmental Studies – Family Studies

ENVR 351 Environmental Policy Formation (4 credits) (equivalent to POLS 309)

An examination of environmental policy outcomes generated by institutions and organizations, including legislation, court decisions and administrative decisions. Additional focus on decision-making processes commonly used to assess environment-related legislation, including those rooted in economics and policy analysis.

Prerequisite: ENVR 212

ENVR 401 Field Seminar (4 credits)

A capstone course that combines field experience with classroom seminar. Student teams will conduct collaborative, broadly interdisciplinary analyses of selected environmental problems. Field-based projects are chosen by the students in consultation with course instructor. Classroom seminars are used for exchange of information between teams and for discussion of readings pertinent to individual research projects or, more broadly, to the interdisciplinary character of environmental problem-solving. Each team produces a major paper that examines ethical and natural- and social-science aspects of the selected problems.

Prerequisite: ENVR 301 and 351 or permission of the instructor

ENVR 475, 476 Experiential Learning (2 credits)

ENVR 477, 478 Experiential Learning (4 credits)

See the description of these courses at the beginning of the “Curricula” section of this catalog.

ENVR 483, 484 Seminar (2 credits)

ENVR 485, 486 Seminar (4 credits)

See the description of these courses at the beginning of the “Curricula” section of this catalog.

ENVR 487, 488 Topics (2 credits)

ENVR 489, 490 Topics (4 credits)

The subject matter of these courses will vary from year to year, but will not duplicate existing courses. Descriptions of these courses are available in the Searchable Class Schedule on Murphy Online,

<https://banner.stthomas.edu/pls/banner/prod/bwckschd>.

ENVR 491, 492 Research (2 credits)

ENVR 493, 494 Research (4 credits)

See the description of these courses at the beginning of the “Curricula” section of this catalog.

ENVR 495, 496 Individual Study (2 credits)

ENVR 497, 498 Individual Study (4 credits)

See the description of these courses at the beginning of the “Curricula” section of this catalog.

Family Studies (FAST)

College of Arts and Sciences, Interdisciplinary Program
O’Shaughnessy Education Center (OEC) 125C, (651) 962-5829
Bruess (COJO), director

Family studies is an interdisciplinary field of study in which the family is the primary unit of analysis. The purpose of this minor is to enable students to critically examine the family using a variety of theories and methods. Family studies scholars can develop understanding of business and communication dynamics, health and social concerns, and psychological and theological matters affecting families and their members. A family studies minor is flexible and multidisciplinary, providing for both broad exposure and disciplinary integration. This minor provides preparation for advanced study in family studies and the allied fields, as well as professional work in organizations focusing on families.

No more than eight credits may be taken from a single major field. Students interested in a minor in family studies should meet with the director.

Minor in Family Studies

FAST 400 Family Studies Seminar (4 credits)

Plus four credits from the following:

PSYC 288 Psychology of Marriage and the Family (4 credits)

SOCI 321 Marriage and the Family (4 credits)

Plus twelve credits from the following:

CDC 305 Chemical Dependency and the Family (4 credits)

COJO 472 Family Communication (4 credits)

ENTR 349 Family Business Management (4 credits)

FAST 495, 496 Individual Study (2 credits each)

FAST 497, 498 Individual Study (4 credits each)

HIST 345 Family and Women in Chinese History (4 credits)

HLTH 462 Human Sexuality Education (4 credits)

PSYC 200 Psychology of Infancy and Childhood (4 credits)