

ENVIRONMENTAL SCIENCES, POLICY AND MANAGEMENT B.S. Policy, Planning, Law, and Society Track

The PPLS track focuses on developing understanding and problem-solving skills germane to the interaction between human and natural systems. Students study concepts, issues, and problem solving approaches that address the policy, legal, economic, political, planning and sociological aspects of environment and natural resource management. This study includes ethics and conflict management. The track further emphasizes an interdisciplinary approach for examining problems and developing effective and innovative solutions. Problems considered include sustainable land use planning, resource conservation and management, law, and environmental protection at a range of political levels and spatial scales. Students develop skill in integrating knowledge from the physical, biological, and social sciences to develop policy and planning alternatives and appropriate strategies to provide real solutions to complex problems. Students may also develop specialized background in environmental law, policy analysis, planning, and conflict management. With this track students will be well prepared for policy development and analysis, strategy development, and decision-making in a range of positions and institutional settings. Example positions include those as a policy analyst, community planner, social researcher, or lawyer in public agencies, with legislative bodies, consulting firms, and conservation organizations. This track will also prepare students for graduate study in policy, planning, and law programs.

A. Integrated ESPM Core (12 credits)

- ___ ESPM 1001 Orientation to ESPM: Freshmen Students (1 cr, F)
 OR ESPM 1002 Orientation to ESPM: Transfer Students (1 cr, F)
- ___ ESPM 1011 Issues in the Environment (3 cr, F/S)^{E,CPE}
- ___ ESPM 2021 Environmental Sciences – Integrated Problem Solving (3 cr, S)
- ___ ESPM 3000 Seminar on Current Issues in ESPM (1 cr, F/S)
- ___ ESPM 4041W Problem Solving for Environmental Change (4 cr, F)
- ___ OR ESPM 4021W Problem Solving: Env Review (4 cr, S) sp '08 or later

B. Communications (7 credits)

- ___ Writ 1301 University Writing (4 cr, F/S)^F
 OR Writ 1401 Writing and Academic Inquiry (4 cr, F/S)^F
- ___ Comm 1101 Introduction to Public Speaking (3 cr, F/S)

C. Mathematical Thinking (4 credits)

- ___ Stat 3011 Introduction to Statistical Analysis (4 cr, F/S)^M
 OR Soc 3811 Basic Social Statistics (4 cr, F/S)^M
 OR ESPM 3012 Statistical Methods for Env. Scientists & Mgrs. (4 cr, F) take only if your CLE mathematical thinking reqt. is satisfied with another course

D. Physical and Basic Biological Sciences (8 credits)

- ___ Biol 1001 Introduction to Biology (4 cr, F/S)^{B,E}
 OR Biol 1009 General Biology (4 cr, F/S)^B
- ___ Chem 1011 General Principles of Chemistry (4 cr, F/S)^P
 OR Chem 1021 Chemical Principles I (4 cr, F/S)^{E,P}

E. Social Sciences (10 credits)

- ___ ESPM 3261 Economics and Natural Resources Management (4 cr, F)^{E,SS}
- ___ ESPM 3241W Natural Resource and Environmental Policy (3 cr, S)^{CPE,SS,WI}
- ___ ESPM 3271 Env. Policy, Law & Human Behavior (3 cr, F)

F. Internship and Field Experience (1 - 4 credits)

- ___ ESPM 4096 Professional Experience Internship (1 cr, F/S)
 * Requires approval and supervision of faculty advisor in the track
- ___ OR Cloquet Forestry Field Session (4 cr, Summer, Cloquet)
 - FR 2101 Identifying Forest Plants
 - FR 2102 Northern Forest: Field Ecology
 - FR 2104 Measuring Forest Resources

G. PPLS Track: Core and Contract Courses (44 - 45 credits)

CORE CLASSES

POLICY AND PLANNING REQUIRED COURSES (15 CREDITS)

- ___ ESPM 3202W Environmental Conflict Management, Leadership, and Planning (3 cr, S)^{CPE}
- ___ ESPM 4256W Natural Resource Law and the Management of Public Lands and Waters (3 cr, S)
- ___ ESPM 4242 Natural Resource and Environmental Policy Analysis (3 cr, F)
- ___ ESPM 3245 Sustainable Land Use Policy and Planning (3 cr, F)^E
- ___ ESPM 3251 Natural Resources in Sustainable International Development (3 cr, F)^{E,IP}

METHODS AND MANAGEMENT REQUIRED COURSES (17-18 CREDITS)

- ___ FR 3131 Geographical Information Systems for Natural Resources (4 cr, F/S)
- ___ ESPM 3211 Survey Measurement and Modeling for Environmental Analysis (3 cr, S)
- ___ ESPM 3108 Ecology of Managed Systems (3 cr, F)
- ___ RRM 4232W Managing Recreation Lands (4 cr, S)

Take one of the following (3-4 Credits)

- ___ ESPM 3604 Environmental Mgmt Systems and Strategy (3 cr, F)
- ___ OR ESPM 4061W Water Quality and Natural Resources (3 cr, F/S)
- ___ OR ESPM 4021 Environmental Impact Statements (3 cr, S)
- ___ OR FR 3104 Forest Ecology (3 cr, F)
- ___ OR FR 3114 Forest Hydrology and Watershed Mgmt (3 cr, F)
- ___ OR FR 3411 Managing Forest Ecosystems: Silviculture (3 cr, S)
- ___ OR FR 5146 Science and Policy of Global Environmental Change (3 cr, S)^F
- ___ OR Soil 1125 The Soil Resource (4 cr, F/S)
- ___ OR Soil 2125 Basic Soil Science (4 cr, S)

Contract Courses (minimum of 12 credits)

Students must specialize in a contract area through a University minor, study abroad experience in PPLS topics, or student designed content area. Students are encouraged to make choices that strengthen their expertise in a PPLS area and/or provide comparative understanding from another related discipline.

You must submit a contract for 12 credits, completed through prior consultation with your faculty advisor in the track – **CONTRACT REQUIRED**. Courses taken from the above categories cannot be double counted here, no can courses count for multiple groups. **All contract courses must be upper division (3xxx, 4xxx, or 5xxx).**

Content Areas represent broad areas of study that may cut across disciplines or focus on a specific area of interest as negotiated between the student and their faculty advisor. An example is Policy and Law. Courses listed in Section G but not taken are good possibilities for use in the content area.

Minors represent areas of study recognized by the University that generally require 9-19 credits of additional coursework. Below is a list of possible minors of interest to ESPM students. See the University Program Catalog (<http://www.catalogs.umn.edu/programs.html>) for a list of additional minors.

- Applied Economics
- Bio-based Products Engineering
- Communication Studies
- Corporate Environmental Management
- Economics
- Fisheries and Wildlife
- Forest Resources
- Global Studies
- Geography
- Land, Nature and Environmental Values Management
- Political Sciences
- Recreation and Resource Management
- Sustainability Studies
- Sustainable Agriculture
- Urban and Community Forestry
- Water Science

H. Liberal Ed, Themes and WI Requirements (9-12 credits)

Students are strongly encouraged to take classes that fulfill multiple liberal education and theme requirements.

Completed through required coursework:

- F – Freshman Composition Requirement
- M – Mathematical Thinking Core Requirement
- B- Biological Science w/Lab Core Requirement
- Physical Science w/Lab Core Requirement
- SS #1 – Social Science Core Requirement
- SS #2 – Social Science Core Requirement
- E - Environment Theme (3 cr)
- CPE - Citizenship and Public Ethics Theme (3 cr)
- IP – International Perspective Theme (3 cr)

Most likely NOT completed through required coursework:

- L – Literature Core (3 cr)
- OH - Other Humanities Core (3 cr)
- HP - Historical Perspectives Core (3 cr)
- CD - Cultural Diversity Theme (3 cr)

Writing Intensive Courses (WI)

Required: 4 WI courses, 2 of them 3xxx OR 4xxx, one in your major.

The WI requirement is satisfied with courses required for the major and PPLS Track.

I. Free Electives to reach 120 credits (15-25)

Students are encouraged to make choices that strengthen their expertise in an area and/or provide comparative understanding from another culture or discipline. To this end, students should strongly consider using free electives to complete a University minor, study abroad experience, or a student designed content area. Students construct these expertise areas with the help of their advisors, and such areas can be integrated as contract courses.

Please note:

Students are strongly encouraged to have an international experience before graduation. Courses completed during an international experience (study, work, volunteer, research) can meet program requirements, liberal education requirements, and/or electives. Discussion with an advisor prior to commencing an international experience is required to plan how courses tie into the ESPM program and Environmental Science Track.