

Graduate Group in Environmental Policy and Management M.S. Degree Requirements

Revised: 2009, 2012 and 2014, 2016

Graduate Council Approval: November 16, 2017

1. Admission requirements

Consideration of admission requires a bachelor's degree, three letters of recommendation, official transcripts and GRE scores from within the past 10 years. Applicants whose native language or language of instruction is not English are required to take the TOEFL or IELTS, unless they have earned or will be earning a bachelor's, master's, or doctoral degree from a regionally accredited U.S. college or university, or a foreign college or university listed in the International Association of Universities' World Higher Education Database (<http://www.whed.net/>) as providing instruction solely in English.

Students will be enrolled as cohorts and no mid-year enrollment will be permitted. Students are required to have a minimum GPA of 3.0, or the international equivalent. Applicants are expected to have GRE minimum scores of 60% Quantitative, 60% Verbal and 50% Analytical Writing, although exceptions may be made on a case-by-case basis.

Admitted students ideally have a scientific, engineering, or technical baccalaureate degree, including courses in introductory environmental sciences, calculus and statistics. Prior coursework in economics (intermediate microeconomics) is recommended, but not required.

1.a. Prerequisites: Students without a prior degree in a STEM (Science, Technology, Engineering, & Math) field are required to complete preparatory courses, or their equivalents, to demonstrate a fundamental scientific background appropriate for environmental policy. This scientific training can be in any appropriate STEM discipline. Those with an undergraduate degree in Environmental Studies will be individually evaluated to ensure that they have a minimum of two quarters of introductory science equivalent (e.g., Introductory Biology, BIS 2A, BIS 2B) and two quarters of upper division STEM courses (e.g., EME 150 Mechanical Design, Introduction to Evolution EVE 100). Pre-requisite decisions are made by the admissions committee at the time of application decision. There is no foreign language requirement for entry or successful completion of the program.

1.b. Deficiencies: Since this is a two-year program that begins in fall, no student will be admitted who will not be able to fulfill all deficiencies in the summer prior to the commencement of the program.

2. Program of study: M.S. Plan II only

This program is designed as a 2 year, coursework centered, terminal practice-oriented Master's degree. As a Plan II Master of Science, the degree requires 42 units of graduate (200 series) or upper division (100 series) courses. A minimum of 18 units must be graduate courses in the major

field. A comprehensive final exam is required for successful graduation. Neither research nor a thesis is required.

2 a) Specific fields of emphasis. This program emphasizes the role of *scientific* and *quantitative analysis* in *environmental policy*, including both quantitative analysis of environmental problems and the application of science to environmental management and practice.

2 b) Plans. Only Plan II (Comprehensive Examination) M.S. degree is offered.

2 c) Unit requirements. The Master's Degree in Environmental Policy and Management (EPM) is a program of full-time graduate study on the campus and requires 42 units to graduate.

3. Course requirements – cores and electives (42 units)

The curriculum is designed to allow students to complete the degree in 2 academic years (6 quarters). A practice-oriented, mentored capstone practicum is required for graduation (6 units, ENV 296). These 6 practicum units can be completed during a single quarter or spread out over up to three quarters. Students may take additional electives beyond the minimum requirement. The total course requirement exclusive of ENV 297 is 39 units. Students are expected to enroll in ENV 297 for all quarters they are in attendance (except summer). This results in a minimum unit total of 42 units if students complete the program in 12 months or alternatively 45 units if students follow the two year plan. Under the accelerated 12 month option students take all the required classwork in one academic year and register for their practicum units during the summer rather than through an academic year.

3.a) Core courses

ENV 200 A, B, C: Analysis of Environmental Policy I, II, III (3 courses, one course each quarter – 4 units each) (cross-listing: ENV 200A/ECL 212A, ENV 200B/ECL 212B)

ENV 201: Environmental Law (Fall, 3 units)

ENV 202: Administration and Management (Fall, 4 units)

ENV 203: Policy Clinic (Winter, 4 units. Spring, 4 units) (team taught by faculty core, focusing on the different thematic areas).

ENV 297: Professional Development Seminar (1 unit each academic quarter) (focusing on professional development, linked to Policy Clinic ENV 203 in winter and spring quarters). Required each quarter.

Typical two year option:

Year 1

Fall	Winter	Spring
Analysis I (4) ENV 200A	Analysis II (4) ENV 200B	Analysis III (4) ENV 200C
Env. Admin. & Mngmnt (4) ENV 202	Quantitative Analysis or Elective (3)	Quantitative Analysis or Elective (3)
Professional Development Seminar (1) ENV 297	Professional Development Seminar (1) ENV 297	Professional Development Seminar (1) ENV 297
Elective opportunities	Elective opportunities	Elective opportunities
9 units + electives	8 units + electives	8 units + electives

Year 2

Fall	Winter	Spring
Environmental Law (3) ENV 201	Policy Clinic (4) ENV 203	Policy Clinic (4) ENV 203
Practicum (2) ENV 296	Practicum (2) ENV 296	Practicum (2) ENV 296
Professional Development Seminar (1) ENV 297	Professional Development Seminar (1) ENV 297	Professional Development Seminar (1) ENV 297
Elective opportunities	Elective opportunities	Elective opportunities
6 units + electives	7 units + electives	7 units + electives

Accelerated 12 month option:

Fall	Winter	Spring	Summer &/or Fall
Analysis I (4) ENV 200A	Analysis II (4) ENV 200B	Analysis III (4) ENV 200C	Practicum(6) ENV 296
Environmental Law (3) ENV 201	Policy Clinic (4) ENV 203	Policy Clinic (4) ENV 203	
Env. Admin. & Mngmnt (4) ENV 202	Quantitative Analysis or Elective (3)	Quantitative Analysis or Elective (3)	
Professional Development Seminar (1) ENV 297	Professional Development Seminar (1) ENV 297	Professional Development Seminar (1) ENV 297	
12 units	12units	12 units	6 units

3.b) Elective courses

The program requires one elective in quantitative analysis. Quantitative analysis can include statistics for non-statistics majors (e.g., STA 100, Applied Statistics for Biological Sciences); approaches to quantitative analysis (e.g., ANT 298, Statistical Rethinking); or non-statistical quantitative methods (e.g., ABT 181N, Concepts and Methods in GIS). One additional 3 unit elective is required. Additional electives are at student discretion. Electives allow students to develop a topical focus or specific policy competence for their program, related to their career interests and their practicum area.

3.c) Summary

This degree emphasizes experiential learning for students that carry a scientific background into the program. There are *seven* elements to the degree program: the environmental policy analysis courses (12 units; graded); quantitative analysis elective (3 units; graded); law, management and administration requirements (7 units, graded); the policy clinic (8 units; graded); professional development seminar (3 units; S/U only), elective (3 units) and a practicum (6 units, graded). The rationale for each is described below. This totals 33 units of program-specific, graded, graduate level units (ENV 200A-C, 201, 202, 203 and 296 and 6 units of electives (quantitative analysis elective + one additional required elective) which may be either an upper division undergraduate or graduate level class. Students must also take ENV 297 for all quarters they are enrolled for a

total of 45 units for students following the 2 year plan or a total of 42 units for students on the accelerated 12 month plan.

3.c.1. The **Environmental Policy Analysis course** (ENV 200 A, B, C), running three quarters (12 units), presents the fundamentals of the policy process, including economic analysis of policy, the policy process, environmental law, environmental management, and environmental administration. This course focuses on teaching fundamental skills to occupy leadership positions within environmental agencies, NGOs and consulting firms.

3.c.2. The **Policy Clinic** (ENV 203; 8 units) is the focal opportunity for experiential learning that focuses on integrating a wide array of quantitative and technical tools on policy problems. The clinic is problem-focused and interactive. The first quarter focuses on dividing the cohort into small groups and defining a group project. The group project has a lead mentor and several supporting mentors. Each project is required to analyze and report on the scientific and technical aspect of a large scale environmental problem. Environmental challenges are described and analyzed on a local, national and global scale; however the group selects one particular scale for in-depth analysis. The clinic begins by analyzing the potential for *policy-relevant science*; this being defined by the policies (a common set of practices guided by anything from NGO operating procedures to law) that dictate societal behavior, and identifies the individuals or groups that drive the policy process. The group evaluates the state of scientific knowledge and identify inflection points for change (i.e., new knowledge that could change policy outcomes, changes in societal perception needed to change policies). Groups then assess barriers to change in order to develop a synthetic assessment of potential for, and barriers to, better policy outcomes for society. Each Policy Clinic includes a suite of required elements, including an assessment of economics, problem administration, law, as well as a scientific and technical assessment.

3.c.3. Working for agencies, politicians, NGOs or consulting firms requires an understanding of environmental law, which is the focus of a three-unit course called Environmental Law (ENV 201). Working within this environment also requires business administration and people and project management. A four-unit course, **Administration and Management** (ENV 202), focuses on the business and planning end of environmental policy. This two-course combination is modularized with different instructors to deliver specialized topics.

3.c.4. The EPM program specializes in **quantitative analysis of environmental problems**. The quantitative analysis requirement (3 units) allows students to choose among a wide array of upper-division quantitative courses.

3.c.5. The **elective** class(es) (3 units minimum) can take advantage of any number of upper division undergraduate or graduate classes and provide the opportunity for students to garner strength in an area of particular interest.

3.c.6. The **Professional Development Seminar** (ENV 297, 3-6 units) brings a diverse array of leaders from agencies, the legislative branch, environmental NGOs and consulting firms to campus to discuss career opportunities and leading challenges within their professions. Each

quarter focuses on a thematic topic (e.g., climate change, freshwater supply, fire management). Students assist with developing themes, inviting, and hosting speakers so as to make this seminar part of professional development.

3.c.7. The **Practicum** (ENV 296; 6 units) is a capstone experience for students to integrate and apply their coursework to a problem in a practical applied professional setting, and provide students with experience in the professional field. Practicum projects vary, but will typically involve an internship outside of UC Davis.

Most practicum projects are expected to be individual projects; however group projects with identifiable individual contributions are also possible. Projects are developed in consultation with one or more faculty members as Practicum Supervisors (PS) of each practicum project and an agency, NGO or consulting firm. The intent of the practicum is to contract with and fulfill a policy research/analysis need of a partnering agency, NGO or consulting firm. Program staff work with students to develop practicum experiences, including contractual obligations with the partnering organization. Alternatively (e.g., students who are currently working for an agency, NGO or consulting firm), a student may propose a practicum project with a faculty mentor but without a direct agency, NGO or company lead. The practicum is intended to be an experiential exercise in professional development, and not a research project. In each case, students are expected to propose a practicum along with a professional development plan that states how the practicum is envisioned to further their individual career objectives. Upon completing the experience, students will submit a written report of their findings including what was accomplished and how the experience advanced their career goals. The report is reviewed and approved by the Practicum Supervisor(s) and finally the Comprehensive Exam Committee (CEC; see Section 5c).

The first academic year preparatory period for the practicum allows time to develop a contract with a coordinating partner (agency, NGO, consulting firm) that includes deliverables, and fees for services rendered. During this period, each student finds an appropriate faculty adviser and writes a Professional Development Plan.

4. Special requirements

The Policy Clinics conclude with presentations to the program to which the public and stakeholders may be invited. These presentations are evaluated by the Policy Clinic faculty lead who provides a report of student performance to the CEC as a component of the comprehensive examination.

5. Committees

5.a) Admission committee. Following the application deadline, the admission committee reviews applicants to assemble a cohort of students for the yearly program. The admission committee consists of three graduate group faculty members and two external advisors (from agencies, NGOs, consulting firms). The external advisors' input is advisory, with the graduate faculty having the final say in admissions. However external advisors are critical in helping steer the program based on industry demand of graduates and profiles of students likely to succeed along their described professional trajectories.

5.b) Faculty Advising. Each student identifies one Faculty Adviser to mentor them on three specific issues: (1) potentially relevant elective courses (including quantitative courses) and (2) the Practicum Proposal, and (3) Professional Development Plan.

5.c) Comprehensive Exam Committee (CEC). The program establishes a comprehensive exam committee composed of three faculty members, appointed by the chair for 1 year terms. This committee is responsible for evaluating students relative to the four written reports comprising the comprehensive exam (see Section 8). Students do not have a major professor, and hence there is no concern whether or not such a person is on this committee.

6. Advising structure and mentoring. Students are advised by (a) the program staff (graduate group chair and program academic coordinator), (b) the student's Faculty Advisor, and (c) the Comprehensive Exam Committee (CEC). The faculty graduate group chair and the program academic coordinator are principally responsible for interviewing and evaluating incoming students with respect to their professional aspirations. The program staff discusses with the student their quantitative needs to recommend an elective course in quantitative methods. The CEC is principally responsible for evaluating students on proposals and plans for professional development and the practicum as well as reports from clinic and practicum work.. Finally, the program staff is responsible for career counseling throughout the program.

7. Advancement to candidacy

All students should file their application to advance to candidacy once they have (1) completed 21 units of study, and (2) their Faculty Adviser has approved drafts of their Professional Development Plan and Practicum Proposal for consideration by the CEC. This typically takes place during Spring quarter of year 1.

8. Comprehensive exam

The comprehensive exam is conducted as a consequence of fulfilling all program requirements. Students are required to obtain a grade of B- or above in all required courses, including the Policy Clinics. If a student receives a grade of C+ or lower in any required course, the course must be retaken and satisfy the minimum grade requirement (B-) in order to satisfy program requirements. Finally, the exam combines an evaluation of four written reports, including the student's (1) Professional Development Plan, (2) Practicum Proposal, (3) Policy Clinic project report, and (4) Practicum report. [Approval of these four reports by the Comprehensive Examination Committee constitutes passing of the exam.](#)

If any component of these materials is less than satisfactory, the student is asked to also have an oral exam that can include elements of basic understanding of the principles of the curricular material, or an evaluation of the student's written products (e.g., the professional development plan). Specifically, the committee determines if they agree that the student has learned the necessary tools with which to succeed in their professional development plan. Students who do not pass this exam can be (a) asked to engage in individual study to fulfill deficiencies in knowledge or (b) retake specific classes. Students are then required to retake the exam. Failure

also triggers an explanation from program course instructors regarding student performance in the curricular requirements of the program. A second failure results in a recommendation to the Dean of Graduate Studies that the student be disqualified from the program.

9. Normative time from matriculation to degree

Normal time from matriculation to degree is two academic years, although students may elect to condense the period into a 12-month period by taking all classes in year one and doing their Practicum in the summer after their academic year. Normative time to advancement to candidacy is three quarters.

10. Typical timeline. 6 academic quarters.

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Elective opportunities	Elective opportunities	Elective opportunities
6 units + electives	7 units + electives	7 units + electives

11. Sources of funding

Students are expected to pay for their own tuition, fees and support. Grant monies will be targeted toward exceptional students, particularly nonresident students to help defray costs of nonresident supplemental tuition (NRST).

12. PELP, In Absentia, and Filing Fee status

The use of PELP, In Absentia or Filing Fee status is expected to be rare since the Master's degree in EPM is a short program requiring active participation in the policy clinic and practicum experiences.