

**JOINT MASTER OF SCIENCE IN ENVIRONMENT AND RESOURCES
PROGRAM REQUIREMENTS FOR ACADEMIC YEAR 2019-2020****TABLE OF CONTENTS**

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Overview

Stanford University's Emmett Interdisciplinary Program in Environment and Resources (E-IPER) offers a Joint Master of Science degree (MS) in Environment and Resources for selected professional school students and PhD students in other departments. E-IPER's Joint MS Program gives students the opportunity to deepen their understanding of the complex interdisciplinary nature of current environmental, energy and sustainability problems. Graduates of the program are prepared to be innovative leaders in their chosen environment and resource fields.

E-IPER students bring diverse academic, professional, and life experiences from around the world. The Joint degree can be more challenging than single graduate programs: it offers tremendous scope, flexibility, and opportunities for engagement across campus, which in turn demand initiative, focus and leadership on the part of students to get the most out of their degree experience. Students are expected to seek support from E-IPER faculty, staff, and fellow students to optimize their own academic experience and career.

APPLICATION

MBA students at the Graduate School of Business (GSB) and JD students at Stanford Law School (SLS) are eligible to apply for the Joint MS in Environment and Resources simultaneously with their respective professional school applications or in their first year at Stanford. MD students at the School of Medicine (SoM) or other Stanford professional graduate degree programs, as well as students pursuing a PhD, are eligible to apply for the Dual MS in Environment and Resources. Completion of the professional degree and MS degree requirements results in the award of the Joint MS-MBA in Environment and Resources, Joint MS-JD in Environment and Resources, or Dual MS in Environment and Resources with MD, PhD, or other Stanford professional graduate degree programs*. The Joint MS degree may not be conferred independent of the professional/primary degree.

Applications from current Stanford students are due annually in Winter Quarter of the student's first year at Stanford (for 2019-2020, this date is January 31, 2020). Application information is updated on the E-IPER website annually during Autumn Quarter. Prospective GSB and SLS applicants may apply for the Joint MS simultaneously with their MBA or JD application. Instructions for doing so are incorporated in the GSB and SLS online application systems.

E-IPER does not accept applications outside of the existing application cycles. The MS-JD and MS-MBA degree programs are designed to start during a student's first year, and students are strongly encouraged to apply at that time. In exceptional cases, second-year GSB and SLS students may apply to E-IPER by the deadline indicated on the admissions website. These students must demonstrate their interest in and commitment to the E-IPER MS degree by completing or enrolling in a minimum of 9 units of non-professional-school E-IPER units by the time of their application in the second year. This minimum requirement does not guarantee admission.

**The dual degree program requires students to complete all requirements for both degrees. Except where indicated, all requirements referring to the Joint MS degree also apply to students pursuing the Dual MS degree.*

REQUIREMENTS

These Requirements apply to students starting the Joint MS program in the 2019-2020 academic year. Each student is responsible for meeting the Joint MS degree requirements. A summary is published in the 2019-2020 Stanford Bulletin, under the School of Earth, Energy & Environmental Sciences, as required by the University:

<http://exploreddegrees.stanford.edu/schoolofearthsciences/eiper/>.

A. COURSEWORK

All Joint MS students are required to complete 45 units of 100-level or higher courses within the parameters outlined in this section. Degree requirements include:

- 23 units must be from courses at the 200-level or higher.
- Students must achieve at least a “B” (3.0 GPA) average across all letter-graded courses taken toward the MS degree. Professional school letter graded courses are not included in the E-IPER GPA calculation.
- 2 Foundational Courses: ENVRES 280 and ENVRES 290
- 4 Track Courses
- 4 Elective courses
- Additional units as needed to achieve 45 units

1. Foundational Courses

a. ENVRES 280. Topics in Environment and Resources (2 units, Spring)

This course functions as a gateway for E-IPER Joint MS students to learn fundamental concepts in environment, energy and sustainability. Topics include climate change, ecosystem services, life cycle assessment, energy systems, food systems, and others. Students engage with affiliated faculty, and begin to develop ways to integrate science and technology with business, law, and other professional skills to solve environment and resource problems. Joint MS students are required to take ENVRES 280 in the Spring of their first year in the program.

b. ENVRES 290. Capstone Project Seminar in Environment and Resources (3 units, Autumn, Winter)

All Joint MS students are required to complete a final project that integrates their professional degree and Joint MS coursework. To facilitate project completion, students must enroll in and complete ENVRES 290 for 3 units. The course is offered Autumn and Winter Quarters. The Capstone Project may be derived from an original idea or from a class, internship, or independent study that a student has completed. Project development and implementation should be conducted in consultation with the student’s advising team, described in Section B. The Capstone Project may be completed as an individual project or with a team of up to three students; all projects are presented publicly as part of a concluding Capstone Symposium. Further information on the Capstone Project and Symposium can be found on the E-IPER website (<https://earth.stanford.edu/eiper/capstone-project>).

2. Track Courses (4 courses)

Students must select a topical Course Track to focus their Joint MS coursework. Tracks include:

1. Cleantech
2. Climate & Atmosphere
3. Energy

4. Freshwater
5. Global, Community & Environmental Health
6. Land Use & Agriculture
7. Oceans & Estuaries
8. Sustainable Built Environment
9. Sustainable Design (Track in revision, submit Custom Track Proposal)

Students must complete a minimum of four classes within one Track, all of which must be taken for a letter grade. Track courses must be at the 100-level or higher and taken for a minimum of 3 units. E-IPER faculty have approved specified courses as appropriate for master's-level students. Students should check course prerequisites to ascertain the appropriateness of specific courses and include relevant prerequisites in their Program Plan as needed (see Section C for a description of this form) and consult with program staff.

In exceptional cases where the tracks do not meet student interests and/or the student has a significant environment and resource background, a Joint MS student may petition to create a self-designed Course Track. This may take the form of a blended course track (for example, combining Cleantech and Sustainable Built Environment) or a customized course track (for example, blending ecology and behavioral science). Students must consult with program staff and submit and gain approval for a Customized Track Proposal (see Section A7) prior to implementing the self-designed option.

The full list of approved track courses is available on the E-IPER website <https://earth.stanford.edu/eiper/course-tracks>.

3. Elective Courses (4 courses)

In addition to the two foundational courses and a minimum of four courses from a Course Track, Joint MS students are required to complete at least four elective courses that are relevant to their Joint MS. These four elective courses must meet the following criteria:

- 3-5 units per course
- Completed for a letter grade
- 100-level or higher
- No more than one relevant independent study course, taken for 3-5 units
- No more than one professional school course from the approved list

Courses may be taken from the student's selected Course Track, another Course Track, or elsewhere in the University, provided they are relevant to the student's environment and resources course of study. *Prior to enrolling in a course, students must consult with the Joint MS Student Services Officer to determine if selected electives and additional units are in accordance with degree requirements.*

4. Limits on Independent Study (5 units)

Up to 5 units of independent study credit may count toward the E-IPER Joint MS degree. Independent study courses can include independent research or practicum units. Independent study can be taken within E-IPER (such as ENVRES 399) or in another department. To receive E-IPER credit, students must submit a Faculty-Advisor-approved Independent Study Agreement within the first two weeks of the quarter in which the study will be done. Students will need to receive E-IPER approval of the Agreement before enrolling in their respective sections. Approval decisions will be made prior to the Final Study List deadline of the given quarter. The

Independent Study form is available at:
<https://earth.stanford.edu/eiper/curriculum#independentstudy>.

A 3-, 4-, or 5-unit independent study course may be counted toward the *Elective Courses* requirement (as described in Section A.3). As per Stanford policy, each unit for which credit is given is understood to represent a minimum of 3 hours of actual work per week for the average student over a 10-week quarter. Details of the policy are available at:
<https://registrar.stanford.edu/faculty/unit-credit>.

5. Limits on Lecture Series (5 units)

A maximum of 5 units from courses that are identified as primarily consisting of guest lectures may be counted toward the Joint MS. These include the Energy Seminar (ENERGY 301) and other similar lecture series courses. If students are unsure about whether a course will count toward this limit, they should discuss the course with the Joint MS Student Services Officer before enrolling.

6. Limits on Professional School Courses (12 units)

A maximum of 12 units of professional school courses relevant to the Joint MS and included in the E-IPER approved list (see <https://earth.stanford.edu/eiper/curriculum - profschool>) may count toward the Joint MS degree. This 12-unit maximum is inclusive of all professional school courses (i.e., any courses taken at the Graduate School of Business, Stanford Law School, School of Medicine, or other professional graduate degrees), not only the courses taken in the professional school where the student is jointly enrolled. This maximum is intended to allow students to take environment- and resource-focused courses offered by the professional schools while ensuring attention to the science, technology, and engineering focus of the Joint MS. One of these professional school courses may be counted toward the *Elective Courses* requirement (as described in Section A.3).

A student wishing to obtain E-IPER Joint MS credit for professional school courses that are not on E-IPER's approved list must submit a Petition for an Exception to the Requirements form (see Section A7) and gain approval of the petition by E-IPER staff. Approval is not automatic, and students are strongly encouraged to submit petitions prior to enrolling in the course in question.

7. Exceptions

Students petitioning for exceptions to the Requirements must use the Joint MS Petition for an Exception to a Requirement. Students proposing a Customized Course Track (see Section A2) must submit a Customized Course Track Proposal. Both forms are available at <https://earth.stanford.edu/eiper/curriculum#petition>.

All petition and proposal materials, including course syllabi for requested new courses, must be submitted to the Joint MS Student Services Officer before the Final Study List deadline in the quarter that the student is taking the course. Petitions and Proposals submitted after this deadline may not be accepted. Petitions and Proposals are reviewed by E-IPER staff, the Faculty Director, the E-IPER Executive Committee, and/or other faculty, as necessary. Submitting a petition or proposal does not guarantee an approval of the request.

8. Resources to identify additional courses of interest and current schedules include:

- Explore Degrees (updated online each summer): <http://exploreddegrees.stanford.edu/>
- Explore Courses: <http://explorecourses.stanford.edu/CourseSearch/>

- Joint MS Student Portal [for current students only]: <https://drive.google.com/drive/folders/0B0WHuA9NhddbbWxkWEEx0TmFQSWM>
- Precourt Institute for Energy: <https://energy.stanford.edu/courses>
- The Earth Systems program: <https://pangea.stanford.edu/esys/program-forms>
- The Environmental and Natural Resources Law and Policy Program: <https://law.stanford.edu/environmental-and-natural-resources-law-policy-program-enrlp/>

Note that outside of its own ENVRES courses, E-IPER does not have influence over course offerings or schedules. The quarter, day, and time a course is offered may change from year to year and even after the quarter has started, and courses may not be offered every year. Students must remain flexible and patient when scheduling courses outside their professional schools. “Shopping” courses—attending the first few sessions before making a firm decision to keep a course—is a common practice at Stanford. Joint MS students should take advantage of this opportunity and identify more classes than they need, check out the instructor and syllabus, and adjust their schedules by adding or dropping classes by the Final Study List deadline as needed. Students should consult with the Joint MS Student Services Officer to ensure changes to Program Plans adhere to E-IPER degree requirements.

B. ADVISING & MENTORING

The purpose of academic advising is to provide each student with academic mentorship, the chance to build a relationship with a faculty member outside their professional school, and a point of contact for academic questions, concerns, and opportunities. Joint MS students are encouraged to seek out faculty mentors that closely align with their academic and professional interests. The program hosts a series of talks and lunches for students to learn about faculty research and expertise, and interact directly with leading environment and resource scholars.

Joint MS students also have access to a roster of fellow Joint MS and PhD peers who can provide insights into coursework, research opportunities, career pathways, and navigating interdisciplinary education. Faculty mentors, Joint MS and PhD peers, and E-IPER staff are available to assist students in selecting courses to develop a cohesive and rigorous Joint MS course of study and Capstone Project.

The Joint MS Student Services Officer serves as the general student advisor, providing support to all Joint MS students regarding E-IPER’s requirements, course options, degree progress, and University Policy. The Joint MS Program Manager leads the Joint MS program and supports students with their Capstone projects. The Assistant Director, Associate Director, Faculty Director, and Executive Committee (ExCom) also provide guidance at the program level and approve the program’s degree requirements annually.

Students should also take advantage of the larger advising network, consulting such resources as Stanford’s institutional resources, such as the Vice Provost for Graduate Education (VPGE), the Graduate Life Office (GLO), the Vice Provost for Teaching & Learning (VPTL), Counseling and Psychological Services (CAPS), the Career Education Office (BEAM), and individuals and networks in the broader community of scholars.

C. PROGRAM PLAN

Students are required to submit their Joint MS Program Plan early in their academic career. The following are the deadlines for submission of the *draft* Program Plan:

- Simultaneous admits: at the time of E-IPER matriculation (for 2019-2020, this date is March 6, 2020)

- Winter admits: in conjunction with the E-IPER application (for 2019-2020, this date is January 31, 2020)

Because the Program Plan is submitted early in a student's Joint MS career, it reflects the student's best estimate in terms of intended coursework; it is not a binding document. Any subsequent amendments to the Program Plan, must be *updated* by the students in their second academic year in the program. This Plan is submitted to E-IPER staff by the final study list deadline of Autumn quarter. For 2019-2020, this date is October 11, 2019. The Program Plan will be reviewed and approved by E-IPER staff and the Faculty Director.

Students and E-IPER staff track degree progress using the online, shared Program Plan. This document should be reviewed approximately every quarter, kept updated by the student, and brought to advising meetings for discussion. If there are any changes to the Program Plan after the Autumn quarter of student's second year in the program, it is the student's responsibility to discuss changes and submit them to the Joint MS Student Services Officer to ensure that degree/graduation requirements will still be met. Ultimately, students are expected to be active in tracking their own progress, and raising concerns in a timely manner. The forms for the MS-MBA, MS-JD and Dual MS degree Program Plans are available at:

<https://earth.stanford.edu/eiper/curriculum>.

D. UNIT ACCOUNTING

Under the Faculty-Senate-approved joint/dual degree scenarios, units are accounted for differently for the Joint MS-MBA in Environment and Resources, the Joint MS-JD in Environment and Resources, and the Dual MS in Environment and Resources.

i. Joint MS-MBA in Environment and Resources: The Joint MS-MBA degree program requires a total of 129 units (84 units for the MBA and 45 units for the MS compared to 100 units for the MBA and 45 units for the MS if these are pursued as separate degrees) to be completed over approximately eight academic quarters.

ii. Joint MS-JD in Environment and Resources: The Joint MS-JD degree program requires a minimum of 113 units, though additional units may be necessary to satisfy all requirements. The JD degree requires 111 units (minimum of 80 Law units and 31 non-Law units) and the MS degree requires 45 units. The joint degree allows up to 43 overlapping units, inclusive of the 31 non-Law units allowed within the JD degree and 12 professional school units allowed within the MS degree. The Joint MS-JD may be completed in three years. *Note: MS-JD Students must work closely with SLS to ensure that they have the proper number of units on their JD Plan in Axxess so they will be accepted for the JD by the ABA.*

iii. Dual MS/MD in Environment and Resources: For a Dual degree, students must meet the University's minimum requirements for both degrees; no course units may be counted toward both degrees. For the Dual MS-MD, this requires 235 and 45 units, respectively. Because the School of Medicine's requirements exceed those of the University, students pursuing the Dual degree must obtain approval from the School of Medicine and E-IPER to ensure their Dual MS Program Plan meets the curricular expectations of both programs. E-IPER staff will discuss details of the Dual degree configuration with individual students from the School of Medicine.

iv. Dual MS/PhD in Environment and Resources: For a Dual degree, students must meet the

University's minimum requirements for both the PhD and MS; no course units may be counted toward both degrees. Students pursuing the Dual degree must obtain approval from their PhD program and E-IPER to ensure their Dual MS Program Plan meets the curricular expectations of both programs. E-IPER staff will discuss details of the Dual degree configuration with individual PhD students.

E. TIME TO DEGREE AND DEGREE CONFERRAL

It is anticipated that the Joint MS-MBA program will take seven to nine quarters to complete (one to three full quarters beyond the MBA). *GSB students should not anticipate completing the Joint MS-MBA in a total of two years.* The Joint MS-JD can be completed in the three years at the Law School. The Dual MS/MD degree is likely to require an additional year of enrollment beyond what is typical for Medical School. The time required to complete the MS/PhD will depend on the student's individual coursework and research program; his/her/their overall course of study should be discussed with the student's PhD advisor and the Joint MS Student Services Officer.

Students must adhere to the University minimum progress requirements for graduate students (<http://exploreddegrees.stanford.edu/graduatedegrees/#degreeprogress>). Exceptions to this requirement must be approved and discussed with E-IPER staff, and advisors at the Business, Law, or Medical Schools.

Joint degrees are conferred together at the time when the requirements for both the Joint MS and the professional degree programs have been met. A student may not receive the Joint MS without simultaneously receiving a professional degree.

F. APPENDIX - E-IPER JOINT MS DEGREE PROGRESS CHECKLIST, 2019-2020 ACADEMIC YEAR

DEGREE REQUIREMENT	DEADLINE	✓
Draft Joint MS Degree Program Plan	For Winter Admits, with E-IPER Application on January 31, 2020 For Simultaneous Admits on March 6, 2020	
ENVRES 280. Topics in Environment and Resources (<i>offered Spring quarter only</i>)	Spring Quarter, 1 st year in program	
Attend Joint MS Orientation	Spring Quarter, 1 st year in program	
Meet with E-IPER Staff – discuss course plans, degree progress, Joint MS requirements	1 st Autumn Quarter in program, recommended twice a year thereafter	
Select Course Track and submit Joint MS Degree Program Plan to E-IPER Staff	Final Study List deadline on October 11 th , 2019	
45 total units: <ul style="list-style-type: none"> • All degree-applicable courses at or above 100-level • 23 units at or above 200-level (graduate level) • Achieve a 3.0 or higher average for university letter-graded courses 	Prior to graduation	
Minimum of 4 letter-graded 3-5-unit courses in one selected Course Track	Prior to graduation	
Minimum of 4 letter-graded, 3-5-unit, elective courses; may include 1 professional school course and 1 3-5-unit independent study course	Prior to graduation	
Additional courses to bring total unit count to 45 units <i>within guidelines stipulated by Joint MS Requirements document</i> : <ul style="list-style-type: none"> • Up to 12 units of approved Professional School Courses • Up to 5 units of relevant Independent Study • Up to 5 units that consist mainly of lecture series 	Prior to graduation	
ENVRES 290. Capstone Project Seminar (<i>offered Autumn and Winter quarters</i>)	1-2 quarters prior to graduation	
Application to graduate (<i>via Axxess</i>)	Quarterly deadline during graduation quarter	