

UCLA

**Environmental Science and Engineering Doctoral
Program**

**Program Manual
2020-2021**

Institute of the Environment and Sustainability

University of California
La Kretz Hall Suite 300
Los Angeles, CA 90095

<https://www.ioes.ucla.edu/ese/>

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Introduction

The Institute of the Environment and Sustainability

The Institute of the Environment and Sustainability (IoES) was formed in 1997 when 51 UCLA faculty signed a proposal to create a new center for research and education. “The environment for life on Earth will be one of the major concerns of society through the 21st century,” they wrote, adding that environmental issues are “multifactorial and multidisciplinary” — including aspects of science, health, policy, law and other areas of study and practice. Starting with a single undergraduate program and four faculty, IoES has since grown to include more than 50 faculty and three graduate programs, with nine research centers and special initiatives to address everything from ocean-based economies to environmental narratives.

Under UCLA rules, a Center for Interdisciplinary Instruction is an official designation that allows the unit to do almost everything that a normal department can do. There are special rules for faculty members with joint or split appointments in a Center for Interdisciplinary Instruction. For details, see <https://www.apo.ucla.edu/policies-forms/the-call/appendices/appendix-15-joint-and-split-appointments>.

Since 2010, IoES has reported to the Dean of the School of Physical Sciences in the College of Arts and Sciences at UCLA. In September 2020, Dr. Marilyn Raphael was appointed the Interim Director of IoES (a position similar to a departmental chair).

As of 2020, IoES has 48 Senate faculty members representing 18 departments around campus. Thirteen of these faculty have full or partial appointments within IoES. Faculty who have full or partial appointments in the Institute are responsible for providing service to IoES including chairing academic programs and committees, and reviewing their IoES peers. In addition to Senate faculty members, there are 32 Affiliate faculty members who are UCLA faculty who do not have formal appointments but who are “friends of the IoES” and engage in research and/or teaching and may serve on graduate student committees. The IoES also has 13 Adjunct faculty who conduct research, teach for IoES, and may serve on graduate student committees.

Emeritus faculty are faculty members who are retired from UCLA, but they may continue research activities and serve on student committees.

(<https://www.ioes.ucla.edu/people/affiliated-faculty/>) IoES relies on all of its faculty, regardless of where their appointments are located, and encourages all faculty to be involved in the governance and daily life of the Institute.

Like other interdisciplinary environment and sustainability programs, the IoES addresses a broad range of subjects, using a diverse set of concepts, frameworks, and methods. The

Institute strives to bring together methods and concepts from the social sciences, the natural sciences, law, policy, and the humanities in order to develop novel, solutions-focused approaches to some of the most pressing challenges of our time.

IoES currently includes eight research centers and partnerships throughout the UCLA network, allowing it to achieve national and global reach. Click here to learn more:

<https://www.ioes.ucla.edu/centers-and-initiatives>.

IoES faculty and students also partner with groups across campus, such as the Law School's Emmett Institute on Climate Change and the Environment, the Luskin Center for Innovation, The Sustainable LA Grand Challenge, and the Graduate School of Education. These cooperative efforts allow us to develop teams with diverse talents to address some of today's most urgent problems.

Although IoES faculty and students work all over the world, the Institute is deeply committed to Los Angeles and California, working to address pressing problems faced by residents in LA and California and using these efforts as opportunities to develop solutions for the broader world. IoES also embraces the fact that it is part of one of our country's great public research universities and seeks to cultivate a strong commitment to service among students, faculty, and staff. Finally, IoES works to ensure that all of its students, faculty, and staff are committed to equity, diversity, and inclusion in all of its efforts and to advancing racial, economic, and environmental justice as a core part of its approach to environment and sustainability.

History of the ESE Program

ESE 1973 to 2012

Plans for the ESE Program were formulated by Willard Libby (Nobel Laureate in Chemistry) in 1970 and the Program was established in 1973 as a graduate Interdepartmental Degree Program (IDP) leading to the Doctorate of Environmental Engineering and Science (D.Env). The Program was initially administered under three deans: Letters and Science (with the Physical Sciences dean taking the lead), Engineering and Applied Sciences, and Public Health. Space was provided in Earth and Space Sciences, and later also in Engineering and Chemistry. Administrative support was provided by the Institute of Geophysics and Planetary Physics (supplemented by contract and grant funds). Faculty FTE (3.5) were provided by the Chancellor's Office, Letters and Science, and the School of Engineering and Applied Sciences; faculty were hired as adjunct faculty rather than tenure-track.

In 1981, a special committee to the Graduate Council recommended the ESE Program be moved into the School of Public Health and the Chair of the ESE Program hold a tenure-track appointment in SPH. The ESE Program moved administratively into the School of Public Health in 1983, in the Division of Environmental and Occupational Health Sciences (later the Department of Environmental Health Sciences, its current home). Five faculty FTE, as well as administrative staff and equipment, were moved into SPH to support the ESE Program. In 1984, a new Director of ESE was hired in SPH, followed by 2 tenure-track faculty.

The 1987-88 Academic Senate review of the ESE Program occurred as the Director and last tenure-track faculty member resigned from UCLA. The review identified areas of inadequate resources, including an inadequate number of core faculty (down to 3.5 FTE) and inadequate space for ESE students, and the program was placed on probation. In 1989, the Dean of SPH (Afifi) made a commitment to provide 1 additional FTE, for a total of 4 core faculty FTE and a half-time Resident Supervisor, 2 staff FTE and adequate space for faculty and students dedicated to the ESE Program. A new Director (Winer) was hired in 1989, based in part on this commitment of resources, and 3 additional core faculty (Ambrose, Suffet and Duke) were hired by 1992. The Graduate Council lifted suspension of enrollments to the ESE Program in 1991.

With the additional resources provided by Dean Afifi, the ESE Program flourished, with the four core faculty and other faculty mentoring a total of 40-50 doctoral students reflecting the admission of about 8-10 new students each year. The 1996-97 Academic Senate review found the ESE Program to be “an excellent program with no significant issues.” In 2001, the core faculty member in environmental policy (Duke) left UCLA; the Dean of SPH (Rosenstock) approved a replacement and a search was conducted for a new core faculty member. The new core faculty member in environmental policy (Pendleton) joined the ESE Program in 2004. The success of the Program continued through the 2004-05 Academic Senate review, which found the ESE Program to be “a rare example of a successfully functioning IDP that could well be used as a model for other such organizations on campus.” The review specifically commented on ESE’s “remarkable alumni base that is actively engaged in supporting financially the program and in mentoring students.”

The 2004-05 Academic Senate review did express concern about the maintenance of four core faculty, which was viewed as the critical mass needed for the success of the Program. In 2007, core faculty member Pendleton resigned, and his position was not replaced. Core faculty member Winer retired in October 2010, and this core ESE faculty position also will not be replaced. Thus, only two core faculty remain for the Program, and these positions also would likely not be replaced by the Dean if they were to be vacated.

In 2010, the UCLA Academic Senate performed an residential review of the ESE Program that recommended the interdepartmental program be moved to the IoES. The program was formally moved to the IoES in July 2012. Because the IoES is a Center for Interdisciplinary Instruction (CII), when the ESE Program moved it ceased to be an interdepartmental degree and became a graduate degree program of the IoES.

IoES Graduate Program Leadership - Who We Are

In 2020, at the direction of IoES Director Marilyn Raphael, the IoES established a new leadership team for its Graduate Programs and a new Graduate Executive Committee (GEC), as a new IoES Standing Committee that consists of the Chairs of IoES’s two graduate programs (Ph.D. and ESE programs), the Chair of Admissions, the Graduate Adviser, the IoES Associate Director, the Graduate Programs Coordinator, and the IoES Director *ex officio*.

The GEC works oversees the IoES graduate programs as a whole, and works to provide synergies between the two programs. The GEC meets on a regular basis (weekly or biweekly) to

deal with graduate program matters as they arise, discussing solutions and making recommendations to the Director and faculty for discussion and approval.

Who We Are

IoES Graduate Program Leadership



Marilyn Raphael

IoES Interim Director

<https://www.ioes.ucla.edu/person/marilyn-raphael/>



William Boyd

PhD Program Chair

<https://www.ioes.ucla.edu/person/william-boyd/>



Stephanie Pincetl

Environmental Science and Engineering Program Chair

<https://www.ioes.ucla.edu/person/stephanie-pincetl/>



Alan Barreca

Faculty Graduate Mentor

<https://www.ioes.ucla.edu/person/alan-barreca/>



Deepak Rajagopal

Graduate Programs Admissions Chair

<https://www.ioes.ucla.edu/person/deepak-rajagopal/>



Cully Nordby

IoES Associate Director

<https://www.ioes.ucla.edu/person/cully-nordby/>



Harrison Levy

Graduate Programs Coordinator

<https://www.ioes.ucla.edu/person/harrison-levy/>



Royce Dieckmann
Student Affairs Officer
<https://www.ioes.ucla.edu/person/royce-dieckmann/>

Graduate Studies at UCLA

UCLA provides materials and resources for graduate students on rules and regulations as well a range of issues that are likely to arise during a student's course of study. Key resources include:

UCLA Standards and Procedures for Graduate Study

Provides detailed information and sets forth general policies, many of which derive from the Academic Senate and its Graduate Council, regarding completion of degree requirements, master's and doctoral committees, examinations and foreign language requirements. General regulations concerning graduate courses, standards of scholarship, disqualification, appeal, leave of absence, in-absentia registration, withdrawal, normal degree progress and a number of other matters are also included. <https://grad.ucla.edu/gasaa/library/spfgs.pdf>.

For New UCLA Students

New Graduate Student Handbook & Orientation

The UCLA New Students' Orientation Handbook contains information regarding University policies, deadlines, and resources for graduate students. You can access the handbook here: <https://grad.ucla.edu/academics/graduate-study/newstudents-orientation>.

The UCLA Graduate Students Association and the UCLA Graduate Student Resource Center sponsor a campus-wide New Graduate Student Orientation each September. This comprehensive orientation includes lunch, a resource fair, and workshops that provide information to ease your transition into graduate school, introduce you to campus services and involvement opportunities, and show you just how much UCLA has to offer. More information is available at <https://grad.ucla.edu/life-at-ucla/events/2016-new-graduate-student-welcome>.

Graduate Student Resource Center

The UCLA Graduate Student Resource Center (GSRC) is a Graduate Students Association (GSA) initiative that is managed by Student Affairs. The GSRC is a resource, referral and information center for graduate and professional school students. They offer advice and assistance in dealing with the challenges of graduate school, as well as a number of workshops and programs conducted in collaboration with campus partners. The GSRC works with GSA to organize the campus-wide Graduate Student Orientation and the Equity, Inclusion & Diversity Graduate Welcome Day. We are also the home of the Graduate Writing Center. <https://gsrc.ucla.edu/Graduate-Student-Resources>

Deadlines

The Academic Calendar & Deadlines for graduate students, faculty, and staff can be found at <http://www.gdnet.ucla.edu/asis/deadlines/default.asp>.

Course Enrollment

Each student must enroll in at least 12 units each quarter to maintain status as a registered student. Students should enroll first in any courses you plan to take, and then make up the difference with research units. Students who have not yet advanced to candidacy should enroll in their advisor's 596 section. Those students who have advanced to candidacy should enroll in your advisor's 599 section, which is for "Dissertation Research." To find your advisor's 596 or 599 enrollment numbers to register for research units each quarter, go to the registrar's Schedule of Classes website at <https://sa.ucla.edu/ro/public/soc>. Select the current term and your home department, and then scroll down to find your advisor's enrollment number. Students must enroll in classes by Friday of the second week of classes each term. Failure to do so will result in a \$50 late fine levied by the Registrar's Office, being dropped from classes, and the cancelling of fellowship funds and academic apprenticeship employment contracts (TAs, GSRs, etc). This deadline as well as others is listed on the registrar's calendar at <http://www.gdnet.ucla.edu/asis/deadlines/default.asp>.

Note that students must be enrolled in at least four units before financial aid checks can be disbursed, and students employed as graduate student researchers must be enrolled in at least 12 units to obtain full fee remissions.

Student Success

Faculty Advising

Upon entry to the program, all students are assigned a faculty adviser chosen to reflect the students' expressed area of interest. The Chair of the D.Env. Graduate Program Committee (program chair) advises students in general terms and a specific program of study is planned in consultation with each student's faculty adviser. Students are expected to meet with their adviser frequently regarding their academic program and degree progress. The program chair, the Graduate Adviser and the Graduate Program Administrator provide assistance with policy and procedure and, when necessary, act to resolve any conflicts that arise. Once per year students meet with the IoES Student Success Committee. This informal student-centered meeting is to review the student's progress toward completion of the degree and their professional development goals and to identify any matters that need attention.

Student Success Committee

The Student Success Committee is designed to help ensure that you are making satisfactory progress in your program and identifying any issues where faculty/administrators could better support students – or – where students may need to make changes in the direction of their dissertation. The committee will be comprised of the Graduate Faculty Advisor, the Graduate Programs Coordinator, and faculty members.

This process is to encourage you and your advisor(s) to have a good discussion about your goals and progress and to ensure that each one of you is getting the support you need to succeed. Also, after

having met with all of you, our broad view may illuminate programmatic or Institute-level ideas for improving our graduate programs.

Funding

Program Costs

Students in the ESE Program pay regular UCLA tuition, student fees as well as Professional Doctorate Supplemental Tuition (PDST), often called the Professional Fee. Students who have health insurance from an outside source do not have to pay the additional Student Health Insurance Plan (SHIP) fee. Non-residents pay the Non-Resident Supplemental Tuition (NRST). A full breakdown of these costs is available at <https://sa.ucla.edu/RO/Fees/Public/public-fees>.

Domestic students (US citizens and permanent residents) coming from outside of California are considered non-residents for the first year, but may apply for California residency starting in the second academic year (see <http://www.registrar.ucla.edu/Fees-Residence/Residence-Requirements/Classification-as-a-Resident>). International students cannot apply for residency, but beginning with the first academic term following advancement to doctoral candidacy, the NRST is waived for a maximum of three years including nonregistered time periods.

ESE students are eligible for in-absentia registration for six quarters following advancement to candidacy. Rare exceptions are considered for additional quarters at the discretion of an Associate Dean or the Dean of the Graduate Division. Students holding in-absentia registration status pay 15% of the resident UCLA tuition and student service fees, the Student Health Insurance Plan fee, and the Professional Doctorate Supplemental Tuition (PDST), but no other campus-based fees. Details of how to apply for in-absentia registration are found at <https://grad.ucla.edu/academics/graduate-study/in-absentia-registration-petition-for-graduate-students/>.

ESE Program Support

The goal of the ESE Program is to provide full financial support for all first year students so they do not have to work or take on student loans. Second year students may receive some support depending on the situation. Financial aid offers to admitted students are described in detail at the time the offer of admission is made. Sources of support during the first year are usually known in advance, but support during the second year depends on external funds available to support ESE Solutions Course research projects. To receive IoES financial support, ESE students may not engage in any employment during this time. However, students may work during their first year if they choose to forgo financial aid (See work study option below).

The standard financial aid package for first and second year students consists of a stipend and coverage of all tuition and fees. In the second year the stipend may be replaced by a Graduate Student Researcher salary at approximately the same level. This support extends from the beginning of the Fall quarter in the first year, through the summer after the first year, and through the Spring quarter of the second year. In some cases, if sufficient support is available, the second year's support may be extended through the following summer.

ESE residents do not receive any financial support from the ESE Program and are responsible for paying all tuition and fees. Exceptions to this policy may be made on a case-by-case basis. Holders of the Cota Robles Graduate Fellowship may receive ESE Program support during their first year as ESE residents, normally the third year in the program.

The Work-Study Option

In some cases ESE students may wish to continue to be employed while they pursue the D.Env degree. Usually this means that they will not be able to complete the required courses and the second year Solutions Course within the normal two-year period. Historically, students choosing the work-study option usually complete the requirements in two and a half or three years.

Whether or not a student wishes to follow the work-study pathway is not a factor in the admissions process, and the financial aid offered to admitted students describes this pathway as an acceptable alternative. However, admitted students will be urged to decide which pathway they wish to follow at the time they accept the offer of admission to the ESE Program.

The ESE Program financial aid offered to students who follow the work-study pathway usually consists of all tuition and fees, but without any stipend payments, however, the details of this offer are determined by the ESE Program Chair on a case-by-case basis. Financial support from the ESE Program after the first year can be modified to reflect actual progress in satisfying program requirements.

Fellowships

ESE students often hold fellowships that become a part of their financial aid package. Generally speaking, before an ESE student advances to candidacy, such fellowship support is used to replace ESE Program support, although this may not be the case for relatively small levels of fellowship support. Because they receive no support from the program, ESE Residents keep all funds provided by fellowships they receive.

Fellowships available to entering ESE students are described here:

<https://grad.ucla.edu/funding/financial-aid/funding-for-entering-students/fellowships-grants/>.

Applicants to the ESE Program can indicate on their application material which fellowships for which they wish to be considered. The ESE Program assists admitted students in completing fellowship applications. In some cases admitted students may be competing with continuing ESE students for specific fellowships.

Fellowships available to continuing ESE students, including ESE residents, are described here:

<https://grad.ucla.edu/funding/financial-aid/funding-for-continuing-students/>. ESE students should stay informed of deadlines and procedures for receiving fellowship applications, which are usually in the Winter quarter. Each student is responsible for initiating applications for fellowships for which they wish to be considered. Fellowship applications need to be submitted first to the ESE Program Administrator, who will provide assistance in preparing the application.

ESE Residents should all consider applying for a Dissertation Year Fellowship in the Winter of the year before they expect to complete their dissertations. This fellowship provides full support for the last year of dissertation study. Many ESE students have been successful in being awarded Dissertation Year Fellowships.

Graduate Student Loans

Although the ESE Program attempts to provide a full support financial aid package the first two years (??), some students find they need to take on student loans to meet unforeseen expenses. Information about student loans for graduate students can be found at <https://grad.ucla.edu/funding/financial-aid/>.

Travel and Conference Expenses

The ESE Program encourages students to present their work at professional conferences. Financial support for travel, lodging, food, and other conference related expenses will be provided as follows:

- UCLA Doctoral Student Travel Grants for Conferences, Professional Development and Off-Campus Research (DTG): Each eligible new and continuing UCLA doctoral student will be provided up to \$1,000 total reimbursement that can be used, in whole or in part, at any time through the student's seventh year in the doctoral program, as long as the student and the activities meet the eligibility requirements. Please visit <https://grad.ucla.edu/funding/financial-aid/funding-for-continuing-students/doctoral-student-travel-grants/> for more information.
- Support for ESE students will be provided up to a maximum of \$500 per student per year, contingent upon funds being available, and only after the DTG has been exhausted.
- First and second-year ESE students have priority for available travel expenses. ESE Residents are encouraged to obtain travel funding from their employers, but are eligible for ESE support.
- Support will normally be provided only for attendance at conferences where the student is presenting the results of his or her research. Exceptions to this policy may be made on a case-by-case basis by the ESE Chair.
- Normally, support for travel expenses is provided on a reimbursement bases, so ESE students should save and submit the originals of all expense receipts, and should see the ESE Program Administrator for help in filling out a request for reimbursement.

Miscellaneous Research Expenses

Support for necessary research expenses not available from other sources will be provided on a case-by-case basis, contingent upon funds being available. ESE students seeking this kind of support should submit a short description of the expenses to the ESE Program Administrator. It should be noted that this type of support is generally limited to amounts less than \$500.

Filing Fee

Filing Fee is intended for students who are in good academic standing and who have completed all degree requirements except for filing their dissertation or thesis, submitting their capstone project, or taking their comprehensive exam, and who do not want to register (and pay fees) for an academic quarter or summer session. Graduate students who meet the criteria below can apply for a Filing Fee and pay a nominal fee in lieu of standard tuition and registration fees. During the Filing Fee Usage Period, a student may no longer: take courses, be employed by UCLA, receive financial support, or access certain campus services. For a full list of suspended and continued services, as well as eligibility and requirement, please visit: <https://grad.ucla.edu/academics/graduatestudy/filing-fee-application>.

BruinBill

To manage your student account and to generate your fellowship stipend, loan, and other need- and merit-based aid payments, UCLA uses a readily accessible financial system known as BruinBill.

The University tracks all of your billing - fees, tuition, Student Health Services (Ashe Center) charges, etc., and your UCLA aid payments, through your individual account. You can access your Bruin Bill on MyUCLA. Any aid funds, including TA and GSR fee remissions (not salary), fellowships, training grant payments, loans, and other awards, will automatically apply towards the payment of your fee and tuition bills first. If any funds remain, they will be issued to you as a credit refund through Bruin Direct. Check with Harrison Levy if you have questions about your statement, or tuition and fee payments. For more information about the system, visit www.sfs.finance.ucla.edu.

All Ashe Student Health Center charge questions should be directed to their billing office at (310) 206-0947.

Housing and Family Services

[Apply for housing online](#) and get more detailed information about graduate student and family housing at UCLA.

Single Graduate Student Housing

Weyburn Terrace is a brand new seven-building, 840-unit complex that contains studio apartments, two-bedroom/two-bath apartments, and two-bedroom/two-bath townhouses for single graduate students. New graduate/professional students as designated by their academic department are guaranteed a one-year contract with the option to renew for another year. One-year contracts for the remaining spaces are offered to new and current single graduate/professional students through a general lottery process on a space-available basis.

Family Housing

University Apartments offers housing designed especially to meet the needs of families, married students, graduate students, and students with same-sex domestic partners. Five complexes are located in the Palms-Mar Vista area, approximately five miles from UCLA, and one complex is located in Westwood Village. Eligibility varies according to the complex.

Child Care

UCLA Early Care and Education operates three centers providing child care for children two months to five years old.

University Parents Nursery School

The University Parents Nursery School (UPNS) is a cooperative school for 2- to 5-year-old children of UCLA students, faculty, and staff. Parent participation is a requirement for membership in the school.

Course Requirements

Course requirements consist of core courses, elective courses, environment and sustainability skill

seminars, environmental science and engineering seminars, and solutions courses.

Course Numeration at UCLA

- **100s** – Upper division undergraduate level courses
- **200s** – Graduate level courses
- **ENVS 290/297** – Graduate seminars
- **ENVS 297** – Graduate special topics seminar
- **ENVS 400** is graduate research for students who have not yet advanced to candidacy. Students enroll in the section assigned to their research advisor. Enroll in this course while working on the Solutions Course project
- **ENVS 599** is PhD Dissertation Research and Writing, for students who have advanced to candidacy.

Deadlines

The Academic Calendar & Deadlines for graduate students, faculty, and staff can be found at <http://www.gdnet.ucla.edu/asis/deadlines/default.asp>.

Core Courses

Thirteen courses from five categories are required. All core courses must be taken for a letter grade.

Graduate Core (two courses). Courses that examine case studies to introduce issues and methods in environment and sustainability. Required courses: Environment 200A and 200B. All IoES graduate students take these two courses together.

Environmental Science (three courses). Courses that describe the characteristics of terrestrial, air, and water environments; the biota; the geological, biological, chemical, hydrological, and atmospheric processes of the environment; and the interrelationships between these compartments. Required courses: Environmental Health Sciences C240; C225 or C264 or other transport and fate elective; and one environmental science elective course.

Environmental Engineering (three courses). Courses in engineering, mathematics, and the applied physical and life sciences covering topics such as modeling of environmental systems, fate and effects of environmental contaminants, design and evaluation of pollution control systems, plus courses that describe the tools and methods needed to address environmental problems, such as field and laboratory analytical methods, statistics, computer science, and advanced applied mathematics. Required courses: Civil and Environmental Engineering 153, and two engineering elective courses.

Environmental Management, Law, and Economics (three courses). Courses that relate to the social and institutional factors relevant to environmental problem solving such as the development and implementation of regulations, dynamics of public participation, and socioeconomic analysis of current and historical trends in environmental and energy policy. Required courses: Environment 134, ENVS 140, and one environmental management elective course.

Analytical Tools and Methods (two courses). Courses that introduce students to the tools and methods required for interdisciplinary research such as probability and statistics, decision analysis, geographical

information systems (GIS), numerical analysis and experiment and survey design. Required courses: one statistics elective course and one analytical tool or method elective course.

Elective Courses

Three courses selected to provide depth in one area for students whose previous degrees emphasized disciplinary breadth or to provide additional courses in an area related to a student's goals within environmental science and engineering. Elective courses are selected in consultation with the student's academic adviser and must be approved by the program chair. All elective courses must be taken for a letter grade.

Environment and Sustainability Seminar

Courses that develop written and oral presentation skills.

Environmental Science and Engineering Seminar

While completing core and elective requirements, full-time students must attend the equivalent of two quarters of weekly seminars in the general area of environmental science and engineering, either by enrolling in seminar courses or by attending 16 separate departmental seminars each year.

Solutions Course. The Solutions Course, Environment 400, constitutes intensive multidisciplinary applied research directed toward the solution of a current environmental problem. Students are required to quantify and measure necessary parameters, perform critical evaluations, edit and process technical and socioeconomic information, meet deadlines, and communicate through a final report to the competent lay person as well as to the technical specialist. Sometimes two or three faculty from different academic disciplines oversee a team of student researchers. The student's individual faculty advisor will assist the student in identifying a solutions course project. Upon selecting a solutions course project, the student will nominate a doctoral committee. The doctoral committee will oversee the student's progress in the solutions course project.

Before proceeding to the solutions course, students must have completed eight of the required core courses, successfully passed all core and elective courses taken (B- grade or better), and maintained a cumulative grade-point average of 3.0 for all classes taken after entering the Environmental Science and Engineering Program. A total of 24 quarter units of Environment 400 (eight units per quarter) must be completed during the three quarters prior to advancement to candidacy. Enrollment in more than one solutions course per quarter is not allowed. No more than eight units of other course work may be taken when enrolled in a solutions course.

Normally, solutions course credit is only earned from courses offered through the Environmental Science and Engineering Program. However, students may petition the faculty for permission to earn solutions course credit through multidisciplinary environmental projects offered in other departments at UCLA.

Credit for Prior Work: Entering environmental science and engineering students may already have completed some of the required course work in their undergraduate and graduate work. Three of the 13 core courses can be waived based on prior course work. Any other course requirement satisfied by previous work must be replaced with an elective in any field of environmental science and engineering that is pertinent to the goals of the student. Thus, a minimum of 13 core and elective courses must be completed after admission to the program. A minimum of 10 core and elective courses must be taken

at UCLA or another University of California campus. You can waive any course requirement except the electives, which must be taken at UCLA. Please send the course information and syllabus to Harrison and the program chair for evaluation and approval.

Course Scheduling

We recommend students take a heavy course load during the first year because the second-year solutions course, including writing and oral presentations, is typically very time intensive. One option is to take three or four courses in a quarter during their first year in order to complete 9 or more courses in the first year. An alternative schedule for students who identify a solutions course soon after they start the first year is to work on the Solutions Course over two years and to spread the courses more evenly over two years.

Suggested required courses to be completed during the first year are: ENV 200, CEE 153, ENV M134, **EHS 212 (not offered until further notice)**, EHS 225, EHS 240, EHS 264, and ENV 140. If you feel confident of your ability to take engineering courses CEE 155 can also be taken in the first year. The remaining courses in the first year can be the engineering elective, the methods electives, or the free electives.

Online Course Scheduling Worksheet

The Program administrator will provide an online course scheduling worksheet which may be helpful in planning out the required components of the program.

Tips for Course Enrollment

ENVS 200A/B, Issues and Methods in Environment and Sustainability: this class will not fill up. It is typically available for enrollment in September.

CEE 153 – Intro to Environmental Engineering: you should enroll into one of the discussion sessions.

Students can attend any discussion session irrespective of the session they are enrolled in. CEE provides a PTE number during or just before the first week of class, as written on the syllabus. CEE has enough seats to ensure all students enroll. Were it to become full, the class size can be increased to accommodate the student on waiting list.

Elective Courses: The ESE program administrator maintains a list of elective subjects that students have taken in the past: <https://ucla.box.com/s/pmyt815lfr4ev01gf69jws6xsw34rymo>. Courses on this list are suggestions only and there are many other courses you should consider. Note also that courses on the list may not be offered this year. There may also be new courses not listed that you would like to take – do your research.

Law Courses: If you would like to take additional Law courses, ESE students should contact the course instructor first to get permission to enroll. Then contact the UCLA Law Records Office (records@law.ucla.edu) to receive a PTE number to officially enroll. Verification of professor approval via email is acceptable to the UCLA Law Records Office.

Note that the law school operates on a semester system, which may create scheduling issues.

Satisfactory/Unsatisfactory (S/U) Graded Courses

Courses taken on an S/U basis outside the major, and 500-series courses within the major, may be applied toward the degree and/or academic residency requirements if so approved by the program

Doctoral Committee

Regulations

The committee must have a minimum of four members. Two of the four committee members must be Associate or Full Professors at UCLA. At least three of the committee members must be affiliated with the IoES, including the committee Chair or one of the Co-chairs, must have an appointment in the Institute of the Environment and Sustainability (IoES). You can find out more about IoES faculty members at <http://www.environment.ucla.edu/people/faculty.php>. The fourth committee member may be any faculty member at UCLA or another university. By petition, non-faculty professionals may serve as additional members (beyond the four required). Note that most adjunct faculty members are considered additional members. This step should be completed very early in the Summer.

Solutions Course

Solutions Course Overview

It is the responsibility of the student to find a faculty member to support their Solutions Course project. The course runs approximately 12-months running from July of the first year through June of the second year. The objective is to generate a peer-reviewed publication, but that is not an absolute requirement. During this time, you will enroll in 8 units of ENV 400 each quarter - S/U grading. Look for a faculty member's research that interests you; it will not have to be the same as the dissertation topic but it might be helpful if it is a related subject. You will need to contact the faculty member to enlist them to serve as advisor. You are encouraged to begin meeting with faculty and discussing possible topics as soon as you enter the program.

The faculty mentor may support your Solution Course through a Graduate Researcher appointment, a Teaching Assistant appointment, or through other funds transferred to the IoES which can be used to pay your tuition and/or stipend.

Please keep us informed about your search for a Solutions Course so we can enlist the resources of the ESE Program and the IoES to help.

Written Qualifying Exam / Solutions Course Prospectus

The Written Qualifying Exam will consist of a Solutions Course prospectus that will be reviewed by the student's doctoral committee. This comes at the start of the Solutions Course, and also serves to guide the year-long course research. The following are the procedures for the Written Qualifying Exam:

1. Identify Solutions Course Advisor(s) and a Solutions Course topic. It is best if this takes place before the end of the Spring quarter of the student's first year.
2. In consultation with Solutions Course Advisor(s), identify members of the Doctoral Committee.
3. Prepare a prospectus describing the Solutions Course research. The required sections of a prospectus are:

- a. Introduction and background, including a review of relevant literature. This section should be in text form with appropriate citations.
- b. An outline version of the proposed research
 - i. Statement of the research question or hypothesis
 - ii. Description of the research plan, including methods
 - iii. Description of any work already completed
 - iv. Schedule for completion of the research

The student should consult with the Solutions Course Advisor(s) to develop the research plan and the Solutions Course Advisor(s) may provide assistance and suggestions in the preparation of the prospectus, but the document should primarily be led by the student .

4. Submit the completed prospectus to the Doctoral Committee. The deadline for this submittal is August 1 during the summer before the course is taken, but this can be adjusted in individual cases. The Doctoral Committee will be asked to provide by the beginning of the Fall quarter a pass/no pass for the prospectus in addition to any suggestions committee members may have regarding the proposed research or, in the case of a no pass decision, suggestions for improvement of the prospectus. If the decision is a no pass, the exam may be repeated once; the student will have a month to submit a revised prospectus to the committee. It is not necessary to meet with the committee before the prospectus is submitted or to present the completed prospectus orally. However, students are encouraged to discuss their Solutions Course work with committee members at any time and may organize a committee meeting at any time if the committee members agree to meet.

Oral Qualifying Exam / Solutions Course Oral Presentation

The Oral Qualifying Exam consists of an oral presentation by the student with questions from the Doctoral Committee. The exam should normally be taken before the end of the Spring quarter of the second year, but may be earlier or, if circumstances warrant, later. The presentation is based on the Problems Course and normally 30-45 minutes in length, with the total meeting time being about 1½-2 hours. Committee members ask questions on the Problems Course research or any other relevant subject. The oral examination may be repeated once.

Upon successful completion of the oral and written examinations, the student is advanced to candidacy.

Residency

Residency Objectives

Candidates for the D.Env. degree are required to conduct a residency in a faculty-approved institution (private industry, governmental agency, conservation group, national laboratory, etc.) working on environmental or natural resource problems of contemporary significance. The purposes of the residency are two-fold: (1) to give the candidate practical experience under the supervision of knowledgeable environmental professionals; and (2) to provide the opportunity for the candidate to develop a dissertation on a subject chosen from the residency experience. The institution that accepts the candidate must agree in advance to these purposes and be willing to cooperate with UCLA in providing appropriate guidance and resources to the resident.

The residency may begin after the student has completed all required coursework, including the Solutions Course, successfully passed the written examination and the oral candidacy examination, and completed any other requirements stipulated by the University for advancing to candidacy for the D.Env. degree.

Finding a Residency

It is the responsibility of the candidate to locate an appropriate institution in which to serve the residency. The ESE Program Director will provide guidance about the suitability of host institutions and mentors. UCLA faculty will also assist in this process, but often the candidate has specific requirements related to the type of institution, the salary level required and preferred location. For these and other reasons it is preferable for the candidate to negotiate directly with the institution, with UCLA faculty assisting in whatever ways are appropriate. It is essential, however, that the ESE Program Director and the Chair of the candidate's doctoral committee be kept informed of the negotiation process so that an appropriate institution or position will be chosen by the candidate.

Approval of the residency institution and position by the doctoral committee Chair and ESE Program Director is required. The Residency Approval Form signifying acceptance of the terms of the residency by all parties should be filed prior to the beginning of the residency. The Chair and Director are under no obligation to approve an institution and position even if the candidate has already accepted a position there. In some cases it may be that the student has already begun employment at the institution before these documents are filed. However, in such cases, as noted above, the doctoral committee Chair and ESE Director are under no obligation to accept an institution to which the student may have already made a commitment.

Residency's are for a period of 18 to 36 months, with no commitment required on the part of the institution or the student for employment or services beyond that period. Students are encouraged not to accept residency appointments which are likely to be of shorter duration than 18 months. One year appointments will be approved if there is evidence that the residency will be extremely rewarding or if other factors are compelling. However, in this case, or in the case where a residency is terminated before 18 months, the student may be required to spend additional time at a second institution where the theme of the residency can be continued.

The participating institution should provide a single individual of appropriate qualifications as the responsible party to represent the institution in the residency agreement. This person should be above the level of immediate supervisor in most cases, i.e., a division head or institutional executive, although there must be some flexibility in the administration of this rule to take into account the local situation.

Residents are required to enroll at UCLA for eight units of EHS 599 each quarter in order to remain in good standing with the University. Failure to enroll is tantamount to withdrawing from the ESE Program and may necessitate an application for readmittance. This, in turn, will require payment of a readmission fee and could result in the need for additional course work. If there is a delay in beginning the residency, or if the residency is interrupted, the student is required to file a Leave of Absence Request Form for each quarter not registered. A Leave of Absence request will not be approved simply because a student does not wish to pay University fees.

An informative "Quarterly Report" must be submitted to the Chair of the doctoral committee, with a copy to the Resident Coordinator, by the tenth week of each quarter as tangible evidence of progress toward completion of the degree in order to receive a "Satisfactory" grade. The quarterly reports are to be short narrative accounts of the activities of the resident, types of problems being addressed, and other subjects of interest, consistent with policies of the institution with regard to confidentiality and reporting. The quarterly reports are treated as works-in-progress and should not be circulated outside of the ESE Program. The Quarterly Report is a minimum requirement, and the actual grade assigned is subject to an evaluation of the resident's progress by the Chair of the Doctoral Committee. A series of "Unsatisfactory" grades may lead to a recommendation that the student be dropped from the program.

The residency should be carefully monitored by the doctoral committee. Arrangements should be made for periodic conferences between the student's doctoral committee Chair (and other members, if possible) and institutional representatives. The Chair of the doctoral committee is responsible for detailed knowledge of the student's problem area and progress. The student is responsible for submitting Quarterly Reports to the Chair of the doctoral committee, with a copy to the Resident Coordinator, and other regular communication on the progress of the dissertation research.

Ideally the resident should work in a single environmental problem area and should not be shifted to a variety of unconnected projects during the residency period. It is recognized that reassignment of the resident to a new problem area during the residency may become necessary, but the work experience should not be unduly fragmented. In the case where several project assignments are necessary, it will be the responsibility of the resident to develop a dissertation that will expand on one theme and be acceptable by the criteria of item 12 below.

It is recognized that some residents may work on confidential subjects that cannot be revealed in the dissertation. Nevertheless, the resident will be required to produce a dissertation, perhaps based in part on independent research, meeting the qualifications stated in the following paragraphs. To avoid breaches of confidentiality, the resident should share the draft of the dissertation with the institutional supervisor. The Chair of the doctoral committee should assume the responsibility for ensuring that the rights of the resident and the University are protected in this connection.

The resident must be given the opportunity to grasp the significance of his/her own efforts to the underlying environmental problem. In general, this means the resident must have access to information on the broader aspects of the problem, including such matters as its history, previous research and techniques, future directions, and possible social, economic and political impacts when relevant.

The residency must result in a written dissertation. The dissertation must be a scholarly treatment of the problem area in which the resident has worked and not a description of the totality of the experience. The dissertation should show evidence of originality and critical thought such that all or parts of it merit consideration for publication in peer-reviewed media. Technical reports, compiled on the job, are not acceptable as a dissertation.

In order to assist the doctoral committee in the guidance of the resident, a dissertation prospectus should be submitted by the student to the doctoral committee within nine months of starting the

residency (preferably sooner). The prospectus should identify the theme of the dissertation, the context of the theme within the resident's responsibilities at the participating institution, and the general outline of the dissertation. The candidate must present and defend the prospectus before the doctoral committee at UCLA. The doctoral committee must approve the dissertation prospectus for the student to be able to continue working on the dissertation.

The dissertation must be approved by the doctoral committee. It is expected that the Chair of the doctoral committee will have approved the final draft of the dissertation before it is submitted to the other committee members. The dissertation draft should be submitted to the doctoral committee four weeks prior to the scheduled date of the final oral examination.

To be eligible to use the Doctoral Filing Fee in lieu of regular registration for the quarter in which the dissertation is filed, all formal requirements for the degree except for taking the final oral examination and filing the dissertation must be met before the first day of instruction of the quarter. A complete draft of the dissertation must be in the hands of the Chair of the Doctoral Committee before the beginning of the quarter in which the student anticipates filing the dissertation. Applications for the Doctoral Filing Fee must be approved by the Chair of the Doctoral Committee and the Director of the ESE Program.

The dissertation will be deposited in the University Library and will be available for public inspection under the same regulations as other doctoral dissertations.

The residency requirement, including dissertation, should normally be completed within three years after advancement to candidacy. Extension of the residency period beyond the normal term must be petitioned in advance by the student and will require the approval of the ESE Faculty. Only compelling reasons for extending the term will be considered. Students failing to complete the D.Env. within five years following completion of candidacy requirements will be advised to drop out of the Program and to reapply when they are prepared to devote more time to their dissertation.

The residency at a participating institution may be terminated, after consultation between the responsible UCLA faculty members and representatives of the institution, for student non-performance, failure of the participating institution to provide a satisfactory educational experience, or overriding institutional considerations.

Dissertation

Dissertation Objectives

The UCLA Graduate Council has accepted guidelines for the D.Env. degree that specify that the dissertation must be "...a scholarly treatment of the problem area in which the resident has worked, but not a description of the totality of the experience. It should show evidence of originality and critical thought such that all or parts of it merit consideration for publication in peer reviewed media."

This policy means that the dissertation should be a critical analysis of some subject in the broad domain of environmental science and engineering that was a part of the resident's duties. The dissertation must

go beyond a description of the problem area. Neither reviews of the current state of a subject nor a chronology of the residency experience are acceptable. On the other hand, the dissertation for the D.Env. will, in general, not be a specialized or in-depth analysis of a subject such as one expects from Ph.D. candidates in related areas. The D.Env. is a more applied degree than the Ph.D., and the dissertation should reflect this orientation. It should generally deal with policy implications of the subject. For some dissertations, “policy implications” may mean the research addresses real world policy problems for which a scientific answer is needed. For other dissertations, “policy implications” may involve the policy analysis of agency regulations, the origins of policies, and comparisons of policy alternatives. While all dissertations should have some sort of policy application, dissertations with one or more chapters devoted to policy analysis should generally be undertaken only by ESE students with substantial advanced coursework in policy analysis.

Every ESE student will work with his or her committee chair (an ESE core or affiliated faculty member) to develop a prospectus that draws on data and experience from the residency, contributes to a scholarly body of knowledge, and for which the resident is academically and technically suited. Specifically, the prospectus should demonstrate that:

- a. The candidate has the expertise to analyze the major issues of the chosen subject.
- b. The subject of the dissertation is a matter of importance. The dissertation should address issues of contemporary or future significance to environmental and public health protection
- c. The dissertation is a critical analysis of the chosen subject. The candidate must analyze the major issues in a thorough and comprehensive manner.
- d. The analysis of the subject goes beyond the time and place of the residency. The student must develop analyses that are generalized sufficiently so that the analytical results will apply to situations other than those encountered in the residency.
- e. The dissertation is an intellectual product of the candidate.
- f. The dissertation, in whole or in part, is of a caliber that would be acceptable for publication in a peer reviewed journal.

Finding an appropriate dissertation topic may be the most difficult task an ESE student faces along the road to getting the D.Env. Some students are tempted to think of the dissertation as the defining work of their research life. These students often overreach in choosing a dissertation topic, choosing a suite of research questions that are so broad that they cannot possibly be completed in the time allotted for an ESE dissertation. A better approach is to choose a dissertation topic that represents one or more well-defined research questions. Are there one or two related research questions that are critical to informing, implementing, or reforming an environmental policy action? A prospectus designed to answer such questions carefully and with a scholarly approach often becomes the foundation for an excellent dissertation.

Dissertation Prospectus Review

Overview

Not later than nine months after advancement to candidacy and the beginning of the residency, the student should present a written prospectus for the dissertation, including an outline, and present it

before the doctoral committee. Examples of appropriate prospectuses are available from the Program faculty. The dissertation prospectus has the same objectives as the solutions course prospectus:

- To get you started in planning your research.
- To inform your doctoral committee about your plans for your research and to get their agreement that your plans are well formed, and that your approach and methods are likely to lead to the results you are seeking.
- To receive feedback from your doctoral committee about ways to improve your plans for dissertation research. This feedback is the most important objective of the dissertation prospectus.

The dissertation prospectus should be substantially longer than the Solutions Course prospectus, usually 15-20 pages in length, but sometimes longer. The prospectus should contain the following:

- A review of literature pertinent to the proposed topic.
- A definition of the dissertation question(s), including a brief discussion of:
 - how existing studies fail to answer this question, and
 - how this topic is important to society.
- A plan of research to address your question, including as much detail as possible about methods to be used.
- A discussion of preliminary results (if applicable).
- A schedule for future work.

Note that there is no prescribed detailed format for the prospectus. The format may vary depending on whether the planned dissertation will be a relatively unified document, or whether it will be a series of papers to be submitted for publication, each of which describes research that has a particular topic. The main criteria for the prospectus is that it informs the doctoral committee about the need for the research, the problem to be addressed, and the details of the plan for research itself.

Guidelines

Assembling the Dissertation Prospectus

Introduction

The resident should submit a dissertation prospectus for approval by the doctoral committee within nine months of starting the residency. The prospectus needs to identify the theme of the dissertation, the context of the theme within the resident's responsibilities at the participating institution, and the general outline of the dissertation. The prospectus is a document designed to convince the resident's dissertation committee that the student is on a realistic path to successfully completing the dissertation. The prospectus needs to show that the research questions and topic are of scholarly interest and important for policy. The prospectus also must show that the data needed to answer the proposed research questions exist or can be collected in a way that meets general standards of scientific rigor.

The prospectus is a preview of usually three major, related papers. The prospectus is a dissertation proposal. As such, it is not necessary for every chapter of the dissertation to be completely developed. Instead, the resident usually provides an introductory chapter that outlines the importance of the proposed work. A second chapter provides a well-developed, but not necessarily completed, first

research paper. The third and fourth chapters provide proposed research papers each with a good conceptual development of the research question, and possibly an example of the data that will be collected to address the research question.

The candidate must return to UCLA in order to present the prospectus before the doctoral committee.

The purposes of these guidelines are to suggest certain procedures for the preparation and presentation of the prospectus and to provide a format for the document. Doctoral committees are free to adopt other guidelines, provided they adhere to the requirements as quoted above.

Preparation for the Prospectus

The resident should prepare the prospectus in consultation with the doctoral committee Chair and the supervisor at the participating institution. Presumably this consultation will be an extended one, preferably beginning with a conference between the committee Chair and the supervisor at the start of the residency, in which the purpose of the residency and the dissertation are discussed. The consultation should continue with periodic discussions between the chair and the supervisor and between each and the resident. The resident should consult closely with the doctoral committee Chair during the development of the prospectus, so as to give the resident the benefit of the chair's advice on its content and organization. The resident is also advised to share an early draft of the prospectus with her/his supervisor. After reviewing the initial draft(s), the Chair and resident can determine an appropriate date for the prospectus presentation. After approval of the final version of the prospectus by the committee Chair, the prospectus should be presented to the doctoral committee at least one week before the scheduled meeting. The resident is responsible for getting the prospectus to all of the committee members .

Scheduling the Prospectus Presentation

It is the responsibility of the resident to schedule the prospectus presentation at UCLA at a time when all of the committee can be present. No exceptions to this rule will be permitted, except if the resident has already commenced travel and one of his/her committee is forced to cancel participation. The committee chair will be responsible for final decision-making in such a case.

The resident should send reminders about the time and location of the dissertation prospectus presentation to each committee member one or two days before the defense

Presentation format

The prospectus presentation should include a 15 minute presentation by the students followed by a 45-minute discussion session with the faculty. The primary goal of the question and answer session is to discuss potential paths forward and make suggestions for changes in the research plan. The secondary goal is to test the student's knowledge on the topic area. After the discussion session, students will be asked to leave the room and the faculty will discuss the outcome of the prospectus: Pass/No Pass.

Suggested Format for the Prospectus

The content of the prospectus should conform in principle and in content to the requirements discussed above. Total length will vary from case to case, but 15 pages is a reasonable length. Two suggested formats are given below. While Format II is more detailed than Format I, it may give the committee and

the student a better understanding of the proposed dissertation work, the data and methodological needs of the work, and the student's preparation and aptitude for completing the dissertation work. Each dissertation supervisor may have his or her own preferred format. (Sample prospectuses are available from the Graduate Advisor or from the dissertation chair.)

Format I.

1. Title page
2. Summary

A summary of the theme of the dissertation and the approach to be taken (approximately 200-300 words).

3. Introduction and Background

A review of the background of the theme of the dissertation with appropriate literature citations.

4. Statement of Objectives of the Project

A statement of the purpose of the project, why it is important and interesting, what the specific objectives of the proposed project are, and how they relate to the residency work experience.

5. Approach

Sources of data, methods to be used in the analysis, and other pertinent information should be given here so as to give the committee a clear picture of the feasibility of the project and the approach to be taken in the development of the dissertation. If generation of new data is involved, the experimental procedures to be used should be described, along with descriptions of resources needed, nature of the expected data, and possible sources of uncertainty. Of particular interest are how the methodologies used and results obtained are expected to be applicable to other similar problems. Any progress made up to the date of the defense may also be included in this section. Appropriate tables and figures may be included.

6. Expected Outcome of the Project

Here the student should describe briefly how the dissertation will be incorporated into the total residency experience, what publications are expected, and whether there might be constraints to publication of all or parts of the dissertation.

7. References

Format II.

- A. Title page
- B. Chapter 1: Introductory Chapter
 - B.1 Summary

A summary of the theme of the dissertation and the approach to be taken (approximately 200-300 words).

- B.2. Introduction and Background

A review of the background of the theme of the dissertation with literature citations.

B.3. Statement of Objectives of the Project

A statement of the purpose of the project, why it is important and interesting, what the specific objectives of the proposed project are, and how they relate to the residency work experience.

B.4. References

C. Chapter 2: Research Paper 1.

C.1 Introduction and Background

A review of the background of the theme of the paper with literature citations.

C.2. Statement of Objectives of the Paper

A statement of the purpose of the paper, its importance and the specific objectives of the proposed paper. If hypotheses are to be tested, they should be developed and discussed here. Research questions should be developed and present here.

C.3. Methods and Data

Sources of data, methods to be used in the analysis, and other pertinent information should be given here. Appropriate tables and figures should be included.

C.4. Results

A description of the most important results from the data analysis with a focus on demonstrating how the results test hypotheses and illuminate research questions presented in the Objectives Section of the Paper.

C.5. Discussion

The importance of the paper's findings should be presented here. The discussion also should indicate the policy consequences of the paper's findings. Recommendations for future research and policy action should go here.

C.6. References

D. Chapter 3: Research Paper 2

D.1 Summary

A summary of the theme of the paper and the approach to be taken · (approximately 200-300 words).

D.2. Introduction and Background

A review of the background of the theme of the paper with preliminary literature citations.

D.3. Statement of Objectives of the Paper

A statement of the purpose of the paper, why it is important and interesting, what the specific objectives of the proposed paper are, and how they relate to the residency work experience.

D.4. Approach

Sources of data, methods to be used in the analysis, and other pertinent information should be given here so as to give the committee a clear picture of the feasibility of the project and the approach to be taken in the development of the dissertation. If generation of new data is involved, the experimental

procedures to be used should be described, along with descriptions of resources needed, nature of the expected data, and possible sources of uncertainty. Of particular interest are how the methodologies used and results obtained are expected to be applicable to other similar problems. Any progress made up to the date of the defense may also be included in this section. Appropriate tables and figures may be included.

D.5 Expected Outcome of the Project

Here the student should describe briefly how the results of the paper will be incorporated into the total residency experience, in what media publications are expected, and whether there might be constraints to publication of all or parts of the dissertation.

D.6. References

E. Chapter 3: Research Paper 3

E.1 Summary

A summary of the theme of the paper and the approach to be taken · (approximately 200-300 words).

E.2. Introduction and Background

A review of the background of the theme of the paper with preliminary literature citations.

E.3. Statement of Objectives of the Paper

A statement of the purpose of the paper, why it is important and interesting, what the specific objectives of the proposed paper are, and how they relate to the residency work experience.

E.4. Approach

Sources of data, methods to be used in the analysis, and other pertinent information should be given here so as to give the committee a clear picture of the feasibility of the project and the approach to be taken in the development of the dissertation. If generation of new data is involved, the experimental procedures to be used should be described, along with descriptions of resources needed, nature of the expected data, and possible sources of uncertainty. Of particular interest are how the methodologies used and results obtained are expected to be applicable to other similar problems. Any progress made up to the date of the defense may also be included in this section. Appropriate tables and figures may be included.

E.5 Expected Outcome of the Project

Here the student should describe briefly how the results of the paper will be incorporated into the total residency experience, in what media publications are expected, and whether there might be constraints to publication of all or parts of the dissertation.

E.6. References

Filing the Prospectus

Following the presentation of the prospectus, a copy of the prospectus must be filed in the ESE Program Office. In addition, the Committee Chair must submit the signed form to the ESE Program Office indicating that the student has completed the prospectus presentation requirement. In the event the committee does not approve the prospectus, it may choose to require a second presentation, have the candidate make changes in the prospectus without a second meeting, or some other alternative. In any case, the chair must notify the ESE Program Office accordingly.

Research Life Beyond the Prospectus

Upon completion of a successful prospectus review process, the resident should embark on fulfilling the research detailed in the prospectus. In the midst of research, it often is easy for the resident to lose track of the research plan approved by the committee.

Students should refer to their prospectus often and discuss thoroughly with their chair any modifications to the research plan.

Dissertation Defense

A dissertation is required and should be a scholarly treatment of the problem area in which the student has worked. It should show evidence of originality and critical thought such that all or parts of it merit consideration for publication in peer reviewed media. The dissertation must go beyond a description of a problem area. Neither reviews of the current state of a subject nor a chronology of the residency experience are acceptable. While the dissertation should be scholarly in content and presentation, the D.Env. is a more applied degree than the Ph.D., and the dissertation should reflect this orientation. It should generally deal with policy implications of the subject.

Upon completion of the residency, the student must defend the dissertation before the doctoral Committee. The dissertation should be completed before the final oral examination is scheduled. If all elements of the student's performance are judged satisfactory, the degree of Doctor of Environmental Science and Engineering (D.Env.) is awarded.

Filing Fee

Filing Fee is intended for students who are in good academic standing and who have completed all degree requirements except for filing their dissertation or thesis, submitting their capstone project, or taking their comprehensive exam, and who do not want to register (and pay fees) for an academic quarter or summer session. Graduate students who meet the criteria below can apply for a Filing Fee and pay a nominal fee of \$179 in lieu of standard tuition and registration fees. During the Filing Fee Usage Period, a student may no longer: take courses, be employed by UCLA, receive financial support, or access certain campus services. For a full list of suspended and continued services, as well as eligibility and requirement, please visit: <https://grad.ucla.edu/academics/graduatestudy/filing-fee-application>.

IoES and Other Resources

Conference Rooms

The IoES has three conference rooms available for reservation by emailing Harrison Levy or Royce Dieckman for reservation requests. There is a large and small conference room at the IoES in La Kretz 300, and one small room in Life Sciences 2316. Please note that rooms are subject to availability and in rare cases your reservation may need to be withdrawn. Please leave these rooms clean and orderly, turn out lights and be sure all doors are locked when you leave.

Graduate Certificates

- **Graduate Certificate in Writing Pedagogy**

The Graduate Certificate in Writing Pedagogy addresses the need of UCLA graduate students for more specialized training in undergraduate teaching and professional development. The certificate provides opportunities for graduate students in all fields of study to enhance their teaching abilities, their theoretical knowledge of language and composition pedagogies, and their job market potential. More information: <https://wp.ucla.edu/wp/students/graduate-certificate>.

- **Leaders in Sustainability Graduate Certificate**

Graduate students seeking an edge in future careers need look no further than the national award-winning Leaders in Sustainability graduate certificate. Companies, consumers and governments across the world increasingly focus on making products, services, operations and lives more sustainable. This cross-disciplinary program gives students the tools to make that happen in a collaborative, action-oriented setting. More information: <https://www.ioes.ucla.edu/lis>.

Alumni

Alumni Activities

The ESE Alumni Association holds events throughout the year. They are a good source of support and information to current students.

Alumni List

The Program Administrator maintains a list of ESE alumni. While searching for a residency or job, you may find it helpful to see if we have any alumni at the institution to which you are applying. We find that many times having a connection at the institution can speed up the application process, connect you with the hiring committee, or provide valuable insights.

Forms

[Doctoral Committee Constitution](#)

[Doctoral Committee Reconstitution](#)

[Residency Approval](#)

[Application for In Absentia Registration](#)