Environmental Sciences
Graduate Program Handbook
2021-2022

Department of Environmental Sciences
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University of California
Riverside, CA 92521

Foreword

This handbook presents the scholastic policy and procedures for the Environmental Sciences Graduate Program, administered by the Department of Environmental Sciences at the University of California at Riverside, as of October 2021. It outlines Departmental expectations of students as well as what students can expect from the Department. It is intended to serve as a convenient source of information for both students and faculty. The information in this handbook supplements the General Catalog of the University of California at Riverside. This handbook should be consulted in conjunction with the General Catalog which is available at https://registrar.ucr.edu/registering/catalog.

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Typical Student Progress (Ph.D.)

Register for Classes	Every quarter at http://classes.ucr.edu/
Develop a Course Plan	Within the first or second quarter of study
Submit Annual Progress Reports	End of each year
Written Qualifying Exam	Beginning of the second year
Develop Ph.D. Dissertation Proposal	During the second year of study
Oral Qualifying Exam	Complete by the end of the second year
Research and Write Ph.D. Dissertation	During years 3-5
Defend Ph.D. Dissertation	By the end of year 5

ESGP Milestones and Tips for Success

Below is a summary of the most essential information for students.

1. This is *your* education and career. Take ownership, be proactive, and plan ahead.
2. When you have a question that you can't answer on your own…
    - Consult your fellow students, particularly those ahead of you in the program.
    - For academic questions ask your Major Professor.
    - For administrative questions ask the Student Services Advisor (see p. i).
    - For further clarification ask the Graduate Advisor.
3. Important events for incoming students:
    - Initial registration & enrollment – refer to section 3.3.
    - Transitioning to Riverside – see links in section 3.3.
    - Orientation – communicated each year by the Graduate Advisor (see p. i).
4. Important events during the first year:
    - Quarterly registration through R'Web (http://rweb.ucr.edu).
    - Prepare your Course Plan – refer to section 8.1.
    - Establish your Advisory Committee – refer to section 5.4.
    - Develop a long-term funding plan with your Major Professor – refer to Section 4.
5. All continuing students are required to give a presentation annually at the ESGP Student Symposium in September. Consult your Major Professor and plan accordingly.
6. Before applying for Candidacy (refer to section 6.4) …
    - Plan I M.S. students must nominate a Thesis Committee and obtain approval for a thesis title and research plan.
    - Plan II M.S. students must complete all required coursework.
    - Ph.D. students must pass a written qualifying examination, nominate a Qualifying Examination Committee and pass an oral qualifying examination that focuses on the dissertation proposal, and nominate a Dissertation Committee Chairperson.
7. Before graduating (refer to section 8.5) …
    - Plan I M.S. and Ph.D. students must complete and submit a written thesis or dissertation that is accepted by the committee, and pass an oral defense of the thesis or dissertation unless granted a waiver (which is unusual).
    - Plan II M.S. students must pass the comprehensive examination.
8. Maintaining satisfactory progress through the program (refer to section 8.2) …
    - The normative time to degree is two years for M.S. students and five years for Ph.D. students.
    - Ph.D. students should aim to advance to candidacy before the beginning of the third year of study.

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Section 1: Introduction

The Environmental Sciences Graduate Program (ESGP) offers M.S. and Ph.D. degrees in environmental sciences. Advanced training in environmental sciences is becoming increasingly necessary to address complex problems involving natural resources, environmental quality, and public health. Although this task frequently requires specialized knowledge in various fields of science, it also requires understanding and integration of a wide variety of interacting physical, chemical, and biological factors. This interaction makes graduate study in environmental sciences distinct from many other scientific fields.

We have designed our program to offer advanced training in specialized field areas within environmental sciences, operating within a single graduate degree program administered by the Department of Environmental Sciences. Students trained in the ESGP can fill many areas of expertise needed at the state-, national-, and international-level. Potential career opportunities exist within regulatory agencies, consulting firms, research institutions, and industry.

The procedures and requirements described in this handbook are intended to guide the student through the ESGP. Special problems or circumstances may arise in which the procedures are not clear or in which an exception to standard policy appears warranted. Questions on all such matters should be discussed with the Major Professor and the ESGP Graduate Advisor. The ESGP Graduate Education Committee formally considers all petitions for modifications or exceptions to ESGP policies.

Section 2: Organization & Administration

2.1 Department and College

The Department of Environmental Sciences is one of thirteen academic departments housed in the College of Natural and Agricultural Sciences (CNAS) at the University of California at Riverside (UCR). CNAS is divided into three research Divisions: (1) Agriculture and Natural Resources, (2) Life Sciences, and (3) Chemistry, Math, Physics, and Astronomy. An Executive Dean oversees the entire college while each division is led by a Divisional Dean. Our Department is one of five departments in the Division of Agriculture and Natural Resources.

Our Department Chair is appointed by the Dean with input from the Department faculty. The Chair appoints a Vice Chair whose main responsibility is the undergraduate program and who serves as the Acting Chair when the Chair is unavailable. The Chair also appoints the Graduate Advisor whose main responsibility is to manage the graduate program. The Chair is the Department's official representative and chief administrator who ensures that the Department's business is conducted in a timely manner and in accordance with all applicable policies. To facilitate this, the Chair relies on several standing committees whose members are appointed annually by the Chair in consultation with the Departmental faculty and sometimes with the Dean. Students and professional staff may serve as representatives on some of these committees.

Departmental standing committees include:

- Executive
- Budget
- Graduate Education
- Safety, Space and Equipment
- Scholarships and Awards
- Social/Public Relations
- Undergraduate Education
- Diversity, Equity, and Inclusion

2.2 Graduate Program

The ESGP is designed to offer advanced training in specialized Field Areas within environmental sciences, operating within a single graduate degree program administered by the Department of Environmental Sciences. Field Areas include Atmospheric Sciences, Environmental Chemistry and Ecotoxicology, Hydrologic Sciences and Soil and Water Sciences. Each Field Area is built around faculty expertise and contains a committed core of faculty who will participate in the teaching and research activities of the field. This structure gives us the flexibility necessary to create rigorous study areas relevant to select student interest, while at the same time housing a potentially large number of diverse faculty members within a single administrative structure under a single graduate program. The Department faculty has established the following *Rules of Governance* to facilitate administration of the ESGP.

2.2.1 Program Director, Graduate Advisor, and Field Directors

- ***Program Director:*** Dr. David C. Volz, Chair
- ***Graduate Advisor:*** Dr. Daniel Hirmas (Chair of the Graduate Education Committee)
- ***Field Directors*** (Members of the Graduate Education Committee)
  - ***Atmospheric Sciences:*** Dr. William Porter
  - ***Environmental Chemistry and Ecotoxicology:*** Dr. Jay Gan
  - ***Hydrologic Sciences:*** Dr. Hoori Ajami
  - ***Soil and Water Sciences:*** Dr. Francesca Hopkins

2.2.2 Faculty Membership Criteria

The ESGP is administered by the Department of Environmental Sciences Faculty (ES Faculty) and Cooperating Faculty Members (Cooperating Faculty) from other departments who hold special appointments in the ESGP. Together, these faculty members carry the title of Graduate Faculty in Environmental Sciences (Graduate Faculty).

Cooperating Faculty Members

Cooperating Faculty have rights and responsibilities equal to those of ES Faculty with regard to the ESGP. All Cooperating Faculty have voting rights with regard to programmatic issues; they are expected to chair or serve on ESGP administrative committees; they may help determine the allocation of ESGP resources (i.e., GSRs, TAs, and fellowships) and may be the recipients of these resources; they are expected to serve as Major Professors, to serve as committee members, and to provide graduate instruction and mentorship for enrolled students; and they are expected to attend meetings and informal activities of the ESGP. Accordingly, Cooperating Faculty status is used

judiciously and is conferred only with the approval of no less than 2/3 of the entire Graduate Faculty and with the approval of the Dean.

A faculty member may apply for Cooperating Faculty status once each year. Applications consist of a letter to the ESGP Program Director (Department Chair) justifying the appointment. Cooperating Faculty status lasts two years for assistant and associate professors and three years for full professors and is renewable.

Emeritus Faculty Members

Emeritus ES Faculty have rights and responsibilities equal to those of ES Faculty.

2.2.3 Organization & Administration

The ESGP is organized around a central administrative structure and specialized academic Field Areas. The program is administered under the leadership of the Program Director, with assistance from the Graduate Advisor and Field Directors (together which make up the Graduate Education Committee with responsibility for program oversight, issues concerning enrolled students, recruiting, student admission, and financial aid).

Program Director

The ES Department Chair serves as the Program Director. The Chair is responsible for all administrative tasks not otherwise delegated by the Rules of Governance or assigned to the Graduate Advisor. In consultation with the Graduate Advisor, the Chair appoints all members of the Graduate Education Committee.

Graduate Advisor

The Graduate Advisor is a tenured faculty member and is responsible for all procedures involving the administration of students in the program. The Graduate Advisor oversees graduate student recruitment, the annual evaluation of graduate students, the administration of written and oral examinations by the Graduate Faculty, maintenance of the graduate student handbook, organization of academic events such as the ESGP Symposium, and handles all student inquiries or concerns. The Graduate Advisor is nominated for renewable one-year terms by the Program Director in consultation with the Graduate Faculty and with approval by the Dean of the Graduate Division.

Graduate Education Committee

The ESGP Graduate Education Committee is responsible for oversight and governance of the ES Graduate Program as well as issues related to enrolled students. The oversight responsibilities of the Committee include: upholding and reviewing the ESGP Rules of Governance, developing and evaluating proposals for programmatic changes, making recommendations to the ESGP Faculty regarding programmatic changes, and submitting periodic performance reviews of the ESGP to the Graduate Faculty at the end of each academic year. Responsibilities regarding enrolled students

include: orientation, official communication with enrolled students, coordinating teaching and course scheduling that affect multiple Field Areas, reviewing and providing guidance on student course plans and Advisory Committees, and enforcing course and degree requirements.

The ESGP Graduate Education Committee is responsible for most issues related to prospective and incoming students. This charge includes: marketing (e.g., website content that affects multiple fields), recruiting (e.g., handling requests for information and campus visits), processing applications and determining whether minimum admission requirements have been met, forwarding applications to the appropriate ESGP faculty, official communication with prospective and incoming students.

The Graduate Education Committee is comprised of the Program Director (*ex officio*), the ESGP Graduate Advisor who serves as Chair of the committee, and Graduate Faculty members (i.e., Field Directors) who are appointed for renewable one-year terms by the Program Director in consultation with the Graduate Advisor. These appointments will include at least one representative from each of the Field Areas. All committee members have full voting rights.

Field Administration

Each Graduate Faculty member belongs to at least one Field Area and contributes to the administration of that Field. To promote programmatic flexibility and disciplinary autonomy within the ESGP, many decisions are entrusted to subsets of Graduate Faculty who administer the Field Areas. Consequently, each Field is responsible for most administrative issues that are specific to the faculty and students in that Field, including: marketing and recruiting, proposals for new courses, administering written qualifying exams, evaluating student progress, job market assistance, and communicating with the ESGP standing committees.

All changes at or above the Field level (e.g., additions and deletions of Field Areas, changes to the ESGP Rules of Governance) must be approved by a majority vote of the Graduate Faculty. Changes within a Field (e.g., course content and examination formats) must be approved by a majority vote of the Graduate Faculty members in that Field Area.

2.2.4 Academic Structure

The academic structure of the ESGP is intended to be highly flexible. Successful student applicants are admitted to the ESGP and are sponsored by a Major Professor (a Graduate Faculty member). Each student works with their Major Professor to develop a program of coursework to satisfy the degree requirements and the career objective. Students and Major Professors are encouraged to develop a course plan within the first or second quarter of study and submit it to the Graduate Advisor for feedback. A course plan template can be found on the Department's website (https://envisci.ucr.edu/graduate/current-students/resources). Students are also encouraged to solicit feedback on their course plans from the Graduate Faculty comprising the student's Advisory Committee (see Section 5.4.1). When submitted to the Graduate Advisor, the course plan becomes part of the student's academic file and is used to ascertain that the student and Major Professor are in agreement that the proposed plan of coursework should adequately prepare the student for their research and their comprehensive examination (MS Plan II) or Ph.D. qualifying exam. Any

changes to a student's course plan or Field Area should be done in consultation with the student's Advisory Committee. Students graduating from the ESGP all receive diplomas reading either "Master of Science in Environmental Sciences" or "Doctor of Philosophy in Environmental Sciences".

Major Professors

Major Professors (faculty advisors) are expected to play a primary role in the supervision and mentoring of their graduate students. They are specifically responsible for ensuring that their students' evaluations are filed in a timely manner, course plans are developed, and that any agreed upon responsibilities for student funding are met.

2.2.5 Meetings, Quorum, and Amendments

The Graduate Education Committee will hold at least one meeting each year and more often as needed. Meetings may be called at any time by the Program Director or the Graduate Advisor, which may receive requests for meetings from Graduate Faculty members at any time.

Quorums and passage requirements for membership and amendments are specifically stated in the Rules of Governance. All other issues that require a vote must be voted on by at least 50% of the eligible members, and passage requires majority support of those voting. Voting may be done by email ballot.

Changes to the ESGP Rules of Governance require a written proposal submitted by a Graduate Faculty member; an evaluation of the proposal by the Graduate Education Committee; a recommendation by the Graduate Education Committee to the Graduate Faculty; and majority approval by the entire Graduate Faculty.

Section 3: Admissions Process

3.1 Admissions Criteria

Entry to the ESGP requires completion of a baccalaureate degree in an appropriate field as preparation for graduate study in environmental sciences. Students normally will come to the program from an environmental sciences related discipline such as atmospheric science, aquatic science, Earth science, environmental chemistry, hydrology, or soil science; or a basic science such as biology, chemistry, or physics. Coursework requirements are specific to each Field Area and are available in the UCR Catalog and summarized in Section 3.2 of this handbook.

Applications will be evaluated based on evidence of past academic performance (e.g., GPA and grades in individual classes), letters of recommendation, the student's statement of purpose, and overall promise as a future researcher. Each student must be sponsored by a Graduate Faculty member who agrees to serve as the student's Major Professor. A student will not be admitted to the program without a Major Professor. It is strongly suggested that the student directly contact

potential Major Professors to gauge their interest and whether they have space in their research groups prior to application.

Additional information about the application process, including fees, forms, and deadlines, is available at: http://graduate.ucr.edu/admissions. Funding options for students are discussed in Section 4 of this handbook.

3.2 Selecting a Field Area

Students may conduct research under the supervision of a sponsoring Graduate Faculty member in any of the following Field areas:

- Atmospheric Sciences
- Environmental Chemistry and Ecotoxicology
- Hydrologic Sciences
- Soil and Water Sciences

3.2.1 Atmospheric Sciences

The Atmospheric Sciences field area encompasses diverse topics such as atmospheric chemistry and air quality, health effects of air pollution, drivers of radiative forcing and global warming, remote sensing of the atmosphere, and atmosphere-ocean interactions. Students will receive training in observing, modeling, and understanding atmospheric circulation and the fate of atmospheric chemical species. Much of the research being conducted addresses the societal impacts of air pollution and climate change.

Core Faculty: Roya Bahreini, Francesca Hopkins, King-Fai Li, Ying-Hsuan Lin, William Porter.
Cooperating Faculty: Haofei Zhang.

Entrance Requirements: There are no entrance requirements for the Atmospheric Sciences Area beyond the general requirements for admission to the ESGP. It is recommended that students have completed one year of chemistry, as well as courses in general physics, organic chemistry, calculus through integrals, and statistics. Students who have not completed courses required for their research may need to complete additional courses to remedy deficiencies.

3.2.2 Environmental Chemistry and Ecotoxicology

The Environmental Chemistry and Ecotoxicology Field Area focuses on the sources, physical and chemical transformations, and removal processes of chemicals in soil, water, and air, and their impacts on ecological systems and human health.

Core Faculty: Roya Bahreini, Jay Gan, Francesca Hopkins, Ying-Hsuan Lin, William Porter, Daniel Schlenk, David Volz, Samantha Ying.

Entrance Requirements: There are no entrance requirements for the Environmental Chemistry Field Area beyond the general requirements for admission to the ESGP. For Ecotoxicology, prospective students would be expected to have had courses in General Biology/Zoology and Organic Chemistry. Students who do not have sufficient background to take the core courses or specific elective courses may, however, need to first take prerequisite courses.

3.2.3 Hydrologic Sciences

The Hydrologic Sciences Field Area offers comprehensive training in the understanding and quantification of physical and biogeochemical processes that govern movement, storage, and quality of water in the environment. Students can specialize in a variety of areas including catchment hydrology, ecohydrology, vadose zone and groundwater hydrology, hydrologic modeling, irrigation and water management in agricultural fields and urban landscapes, catchment biogeochemistry, contaminant fate and transport, Earth surface processes, and related areas.

Core Faculty: Hoori Ajami, Andrew Gray, Amir Haghverdi, Jiri Šimůnek, Laosheng Wu.
Cooperating Faculty: Ray Anderson, Ariel Dinar, Kurt Schwabe, Elia Scudiero.

Entrance Requirements: There are no entrance requirements for the Hydrologic Sciences Field Area beyond the general requirements for admission to the ESGP. It is recommended that students have completed one year of general chemistry, general physics, organic chemistry, calculus through differential equations, statistics, and physical geology or physical geography.

3.2.4 Soil and Water Sciences

The Soil and Water Sciences Field Area offers comprehensive training in the chemistry, physics, biology, and ecology of soils, surface waters, groundwater, and wetlands. Students can specialize in a variety of areas, including soil and aquatic chemistry, hydrology, limnology, soil-plant relations, biogeochemistry, bioremediation, ecosystem and soil microbial processes, contaminant fate and transport, water resources management, hillslope processes, soil genesis, soil mineralogy, geomorphology, and related areas.

Core Faculty: Hoori Ajami, Jay Gan, Andrew Gray, Amir Haghverdi, Daniel Hirmas, Peter Homyak, Francesca Hopkins, Jiri Šimůnek, Laosheng Wu, Samantha Ying.
Cooperating Faculty: Emma Aronson, Darrel Jenerette, Elia Scudiero.

Entrance Requirements: Admission to the Soil and Water Sciences field area requires a baccalaureate degree with preparation in both physical and life sciences. It is recommended that students have completed one year of general chemistry, as well as courses in general physics, organic chemistry, calculus through integrals, general biology, statistics, and physical geology or physical geography.

3.3 Registration & Enrollment

Applicants are notified of admission decisions by the end of February; however fellowship and financial aid decisions may take longer. Successful applicants are encouraged to contact the ESGP

Graduate Advisor and their Major Professors to obtain answers to any questions they may have about the offer of admission. Upon acceptance of the offer, the UCR Graduate Division and the Student Services Advisor will work with the student to facilitate registration and enrollment. Below are some important things for all students to keep in mind:

- Unless granted a Leave of Absence by the Graduate Division, students must register for every regular academic session (Fall, Winter, and Spring quarters). Students may also discuss the option of Ready to Enroll Status with the Graduate Advisor.
- Most students with financial aid must be enrolled in at least 6 units before the fee payment deadline (usually 2 weeks before the quarter begins) so their accounts may be credited appropriately. Otherwise a late payment charge will be assessed.
- *Failure to enroll or pay fees before the appropriate deadline will result in lapse of student status. Enrollment after the deadline requires special approval by the Graduate Dean and payment of an additional fee. Lapse of student status may require reapplication to the University.*
- Students must carry a full academic course load (12 graduate units) during each quarter unless half-time student status has been approved by the Graduate Advisor and Graduate Division in advance, in which case the student can register for no more than six units.
- International students are always considered non-residents for tuition purposes, but domestic non-resident students are expected to become residents after their first year of study and thus become eligible for reduced tuition. *Establishing residency for tuition purposes requires advanced planning – see the Registrar for more information.*
- Students are encouraged to participate in advance enrollment and to verify that their course enrollment has been successful as soon as possible.

Questions about enrollment and registration should be directed to:

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Student Services Advisor
CNAS Graduate Student Affairs Center
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University of California
Riverside, CA 92521
Voice: 951-827-2441
Email: john.herring@ucr.edu

Additional information about registration and enrollment can be found in the General Catalog, in the Graduate Division Handbook, and at: http://classes.ucr.edu/enrollment/. Some other useful sources of information for incoming students are provided below:

- Graduate Division: http://graduate.ucr.edu/
- Student Services: https://gsrc.ucr.edu/campus-resources
- FAQs about the Graduate Program: https://envisci.ucr.edu/graduate-education-faq
- International Students: https://international.ucr.edu/students
- Graduate Student Association: https://gsa.ucr.edu/
- Environmental Sciences mini-GSA: https://envisci.ucr.edu/graduate/mini-gsa

Section 4: Funding

Upon admission to the ESGP, students will receive notice from the Graduate Division of any financial aid package also being offered. Admitted students who receive a financial aid offer should examine the offer carefully and contact their prospective Major Professor with any questions. Most offers include a combination of funding sources, possibly over multiple years. Each financial aid offer is unique and entails certain rights and responsibilities for both the student and the University. Financial aid can be revoked if a student does not make satisfactory progress through the degree program or fails to satisfy other requirements of the aid package.

Admitted students not receiving an offer of financial aid, or continuing students in search of additional financial aid after their initial offer has expired, have access to a variety of funding sources including: Grants, Scholarships & Fellowships, Graduate Student Research Assistantships (GSRs), Teaching Assistantships (TAs), personal funds (e.g., loans, savings, outside employment), subsidized benefits (e.g., healthcare), and tuition and fee waivers (e.g. non-resident tuition fee waiver for Ph.D. candidates). The Graduate Division and the UCR Financial Aid Office both maintain websites dedicated to helping students fund their educations:

- http://finaid.ucr.edu/
- https://graduate.ucr.edu/funding

As with University-administered funding, other types of financial aid can be revoked if a student does not make satisfactory progress or fails to satisfy other requirements of the aid package.

The Graduate Division in consultation with the Graduate Education Committee are responsible for coordinating student financial aid, which typically covers some or all of the tuition and stipend in the first year of the student's degree program. *Therefore it is imperative that each student be proactive about planning ahead and coordinating funding with the Major Professor who is responsible for funding the student in later years.* Some common types of funding for ESGP graduate students are discussed below.

4.1 Grants, Scholarships, and Fellowships

4.1.1 Grants

Grants are awarded on the basis of financial need and do not require repayment. If you believe you can demonstrate significant financial need, contact the UCR Financial Aid Office for more information about grants (https://graduate.ucr.edu/funding#outsideucr).

4.1.2 Scholarships

Scholarships are awarded on the basis of merit and do not require repayment. If you believe you have a meritorious academic record, contact the UCR Financial Aid Office for more information about scholarships (https://graduate.ucr.edu/funding#fellowships).

CNAS administers some scholarships for continuing graduate students: https://cnas.ucr.edu/cnas-scholarships. Deadlines typically are in the spring.

The Department of Environmental Sciences also has some scholarships for continuing graduate students: https://envisci.ucr.edu/graduate/current-students/scholarships-awards.

Scholarships also are available from a variety of other sources including: the National Science Foundation, CONACYT (the Mexican equivalent of NSF), the U.S. Environmental Protection Agency, the U.S. Department of Agriculture, the U.S. Department of Energy, the Ford Foundation, UC MEXUS, and other UC, State, and Federal agencies.

4.1.3 Fellowships

Fellowships are merit-based and do not require repayment. The Graduate Division awards fellowships to incoming students who are nominated by the ESGP and who the Graduate Division deems to be highly meritorious. Typically, these fellowship awards include a stipend and full or partial payment of tuition and fees. Applications are considered once each year during the Winter quarter (for Fall admission) and require a minimum GPA of 3.25 (or 3.00 with additional justification). International students also must achieve a passing score on the TOEFL. *ESGP applicants who are interested in applying for a fellowship should note this on their application and submit the completed application by December 1st (earlier than the deadline for students not applying for fellowships).*

Fellowship recipients must complete a full-time program of study or research each quarter (at least 12 units in regular courses and research units), maintain a GPA of 3.0 or better, have no more than 7 units of "Incomplete" grades, be advanced to candidacy for the Ph.D. within 12 academic quarters after entry (unless the award letter specifies a different date) and be making satisfactory progress toward their degrees. Fellowship holders may supplement their awards with employment, with the prior approval of the Graduate Dean.

4.2 Graduate Research Assistantships

Most GSRs are administered through the ESGP and typically are funded by research grants awarded to ESGP faculty. However, sometimes a student may work as a GSR for a non-ESGP faculty member. The process for a student to obtain a GSR varies: a student may be offered a GSR by a faculty member in need of research assistance, or may seek out a GSR with a particular faculty member. Ideally a student's GSR work is related to their own research, but sometimes a student must work on an unrelated project in order to receive funding. A student may decline to work on an unrelated project, but the student must then provide their own alternative funding. Students are encouraged to be proactive about submitting research grants with their Major Professors. If

awarded, this ensures the GSR funding matches the student's research interests. Substandard performance in a GSR position may result in loss of funding.

During the academic year, GSR appointments may not exceed 50% time (20 hours per week), but during the summer full-time appointments may be made. Typically, an academic-year appointment will be at 49% time due to accounting conventions. Check the General Catalog (Graduate Studies – Financial Support) for current salary rates or visit this website: https://www.ucop.edu/academic-personnel-programs/compensation/.

Students supported by GSRs must register for and complete a full-time program of study or research (at least 12 course, research, and teaching units), maintain a GPA of 3.00 or better, have no more than 7 units of "Incomplete" grades, be advanced to candidacy for the Ph.D. within 12 quarters after entry (unless the award letter specifies a different date), and be making satisfactory progress toward their degrees.

4.3 Teaching Assistantships

Most teaching assistants (TAs) are administered through the ESGP but sometimes a student may be a TA for a course taught outside the Department or by a non-ESGP faculty member. TAs for many life sciences courses in CNAS are arranged by a college-wide life sciences TA allocation committee. For courses taught in the Department of Environmental Sciences, available TA positions are initially assigned to eligible students in the ESGP with input from the corresponding instructors. Any remaining available TA positions will be announced, and assignments will be made from the pool of applicants with input from the corresponding instructors. A student may decline support as a TA, but the student must then provide their own alternative funding. TAs are evaluated by their students at the end of each course and the evaluations are reviewed by the ESGP. Substandard performance in a TA position may result in requirement for additional TA training or loss of TA opportunities.

During the academic year TA appointments may not exceed 50% time (20 hours per week). Students may assume larger teaching loads during the summer. Most academic year appointments are at the 25% or 50% levels, depending on responsibilities. Check the General Catalog (Graduate Studies – Financial Support) for current salary rates.

Students supported by TAs must complete a full-time program of study or research (at least 12 course and research units), maintain a GPA of 3.00 or better, have no more than 7 units of "Incomplete" grades, and be making satisfactory progress toward their degrees. No student may serve in teaching title codes (TA, Fellow, Associate In) for more than 18 quarters without special permission from the Graduate Division.

Each year the Graduate Division recognizes exemplary teaching skills with the Outstanding Teaching Awards. The ceremony is held each year, at the end of the Spring quarter. The ESGP nominates a student to receive the award based on teaching skills, mentoring skills, and other pedagogical skills.

Section 5: Advising

5.1 Orientation

Prior to the start of each fall quarter, various orientation sessions are held for students who have entered the ESGP since the fall of the previous year. The orientation schedule for the current academic year is communicated to students by the Graduate Advisor.

5.2 Professional Staff

The Department has professional staff available to assist faculty and students with a variety of administrative issues. Academic matters are handled by the staff in the CNAS Graduate Student Affairs Center (see Section 3.3 for the Student Services Advisor's contact information).

5.3 Major Professor

Each student must be sponsored by an ESGP Graduate Faculty member who agrees to serve as the student's Major Professor (also known as the faculty mentor or advisor). Ultimately each student is responsible for taking ownership of their graduate education and ensuring that administrative tasks are completed, deadlines are met, and adequate progress is made through the program. However, Major Professors are expected to play a primary role in the supervision, mentoring, and evaluation of their graduate students.

Each student is encouraged to keep in close contact with their Major Professor, who will help the student make a variety of professional decisions during the course of study. As a student begins to define a research interest and make plans for writing the dissertation, the student may want to change Major Professors in order to work with someone better suited to the chosen area of research. Students take the initiative in changing Major Professors and, with consent of the new Major Professor, must notify the Graduate Advisor when such as change is made. The Major Professor/Advisory Committee form is available at http://envisci.ucr.edu/graduate/current-students/resources. Note: When changing Major Professors, a new Major Professor must be identified no later than one quarter after leaving the previous Major Professor's research group.

Generally, the Major Professor's responsibilities include, but may not be limited to:

- Working with the student to develop a program of coursework to satisfy the degree requirements and career objective.
- Working with the student to secure sources of funding and ensuring that any agreed upon responsibilities for funding are met.
- Helping the student to put together an Advisory Committee (see below) and serving as Chair of this committee and of the student's Thesis or Dissertation Committee.
- Helping the student to develop a research topic and supervising the student's research.

- Evaluating student progress and performance.
- Assisting the student with job placement (see Section 8.4).

5.4 Committees

The table below summarizes the rules and regulations regarding graduate committees.

ESGP Graduate Committee Rules and Regulations			
Committee Name	**When Committee is Formed**	**Number of Faculty on Committee**	**Required Makeup of the Committee**
Advisory Committee (recommended)	Before the course plan is finalized, but usually within the first two quarters of study	3 or more	Major Professor plus 2 other ESGP faculty (ES or Cooperating Faculty). Additional faculty from outside the ESGP may also serve on this committee. A student can choose to keep this committee informal or formalize it by submitting the appropriate form to the Graduate Advisor.
Written Qualifying Examination Committee	Prior to written examination (typically taken near end of first year or within second year)	3 or more	Major Professor plus 2 other ESGP faculty (ES or Cooperating Faculty) with expertise in student's research field. Additional faculty from outside the ESGP may be appointed with approval from the Major Professor.
Oral Qualifying Examination Committee	Prior to oral examination (taken within one year after passing Written Qualifying Examination)	5	Major Professor plus 3 other ESGP faculty (ES or Cooperating Faculty) plus 1 outside faculty who is a member of the UC Academic Senate. Cooperating Faculty may not serve as an outside faculty member. Additional faculty from outside the ESGP or who are non-UC Academic Senate faculty may be appointed with approval from the Major Professor.
Ph.D Dissertation Committee	By date of oral qualifying examination	3 or more	Major professor plus 2 other ESGP faculty (ES or Cooperating Faculty). Additional faculty from outside the ESGP may be appointed with approval from the Major Professor.
M.S. Thesis Committee	By end of first year in graduate program	3 or more	Major professor plus 2 other ESGP faculty (ES or Cooperating Faculty). Additional faculty from outside the ESGP may be appointed with approval from the Major Professor.

5.4.1 Advisory Committee

In consultation with the Major Professor, *each student is encouraged to select an Advisory Committee prior to finalizing their course plans and before the end of the second quarter of study*. Students and their Major Professors have the option of keeping this committee informal or they can formalize it by submitting the Major Professor/Advisory Committee form available at https://envisci.ucr.edu/graduate/current-students/resources. The Advisory Committee should ideally consist of your Major Professor as Chair plus two other ESGP Graduate Faculty members (i.e., ES or Cooperating Faculty; a list of ESGP faculty members can be found at

https://envisci.ucr.edu/faculty). The committee should be used as a resource for help in selecting courses and providing advice on an array of issues. Often, the Advisory Committee will later become members of the Thesis/Qualifying/Dissertation Committee when a student advances to Candidacy (see below, and Section 6.4). However, this is not necessarily the case; the Advisory Committee can and should be altered to meet the changing needs of the student.

5.4.2 M.S. Thesis Committee

For M.S. students, the Thesis Committee should be formed prior to the end of student's first year in the graduate program. This three-person committee includes the Major Professor as Chair plus two additional ESGP faculty members (i.e., ES or Cooperating Faculty). Additional faculty from outside the ESGP may be appointed to the committee with permission of the Major Professor. The committee is nominated on the application for Candidacy (https://graduate.ucr.edu/petitions-and-forms) and must be approved by the Graduate Dean. Application for Master's Advancement to Candidacy should be made by the first day of the quarter in which the student plans to graduate although students are recommended to advance to candidacy by the end of their first year of study. Prior to preparing this application, the student should work with the Major Professor to develop a committee appropriate for the student's needs and in accordance with University regulations. Note that the Major Professor and the two additional committee nominees must approve the student's thesis title and research plan on the application for Candidacy (Section 6.4); therefore at least one meeting between the student and the committee is typically needed before submitting the application and before substantial work on the thesis is begun.

5.4.3 Ph.D. Written Qualifying Examination Committee

The Ph.D Written Qualifying Examination Committee will consist of the Major Professor and at least two other ESGP faculty members (i.e., ES or Cooperating Faculty) with expertise in the student's line of research. Additional faculty from outside the ESGP may be appointed to the committee with permission of the Major Professor. Note: The student is not responsible for forming a written qualifying examination committee; the Field Director, in consultation with the Major Professor establishes this committee and coordinates the exam. Students are encouraged to attempt their written qualifying examination near the beginning of their second year of study.

5.4.4 Ph.D. Oral Qualifying Examination Committee

For Ph.D. students, the Qualifying Examination Committee should be formed when the student is preparing for the oral qualifying examination (which focuses on the dissertation proposal). The oral qualifying examination must be attempted within 1 year of passing the written qualifying examination.

This five-person committee includes the Major Professor as Chair plus four additional members, one of whom must not be a Graduate Faculty member in the ESGP. Because they are considered Graduate Faculty, Cooperating Faculty may not serve in this outside member role. *Both the proposed committee and examination date must be submitted to the Graduate Division at least two weeks (preferably one month) prior to the proposed oral examination date and must be approved by the Graduate Dean* (the Student Services Advisor assists with completion of the necessary

form; the form can be found at https://graduate.ucr.edu/petitions-and-forms). The student should work with the Major Professor to develop a committee appropriate for the student's needs and in accordance with University regulations. Because some faculty may be unavailable or decline to serve on the committee for a variety of reasons, students are encouraged to contact potential committee members well in advance of the anticipated examination date to avoid unnecessary delays. Furthermore, because the ESGP oral examination focuses on the dissertation proposal, it behooves the student to involve their committee members as early as possible in the proposal development. Note: Although the student and Major Professor work together to form the student's oral qualifying examination committee, the Field Director is responsible for coordinating the exam in consultation with the Major Professor.

5.4.5 Ph.D. Dissertation Committee

For Ph.D. students, the Dissertation Committee should be formed by the date of the oral examination; however only the Chair of this three-person committee [typically the Major Professor plus two other ESGP faculty (i.e., ES or Cooperating Faculty)] must be nominated to the Graduate Division for purposes of advancing the student to Candidacy. In this case the remaining two members should be nominated shortly thereafter. The Student Services Advisor assists with completion of the necessary form (https://graduate.ucr.edu/petitions-and-forms). Additional faculty from outside the ESGP may be appointed to the committee with permission of the Major Professor.

Graduate Division must be notified of any changes in the Dissertation Committee membership no later than two weeks before the dissertation defense. As with the Qualifying Examination Committee, the student should work with the Major Professor to develop a committee appropriate for the student's needs and in accordance with University regulations. It is in the best interests of both the student and the faculty for the Ph.D Dissertation Committee to be formed early in the student's research. Often members of the student's Qualifying Examination Committees will form the Dissertation Committee, but this is not necessary.

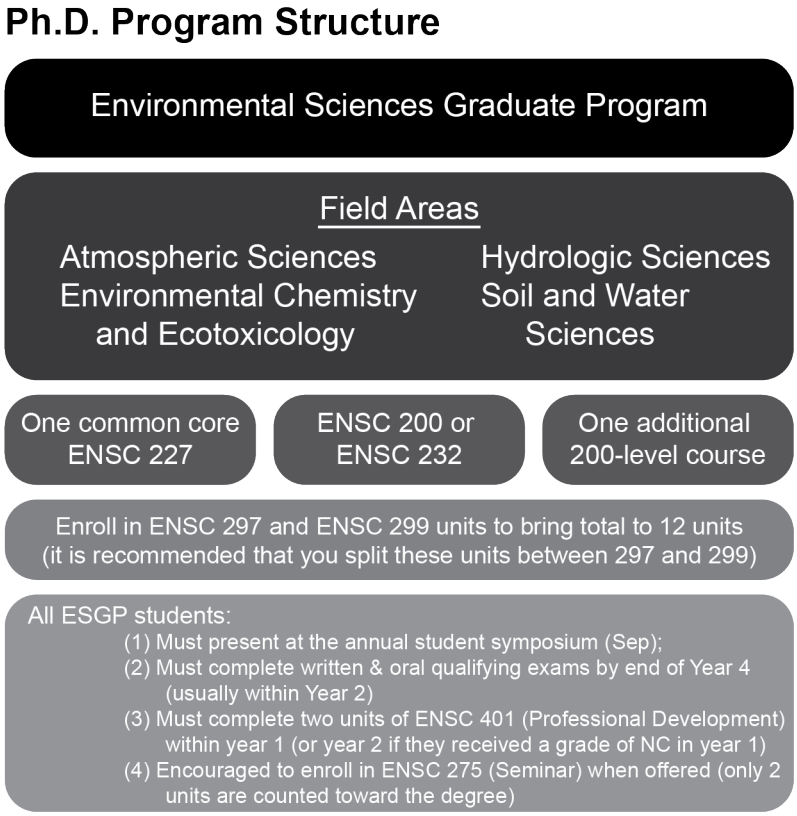
Section 6: Academic Requirements and Regulations

The UCR General Catalog provides the official record of the academic requirements and regulations for the degrees offered by the ESGP. This section summarizes those requirements and elaborates on some of them to provide additional guidance. This section is not meant to supersede the General Catalog. If any discrepancies exist between this section and the General Catalog, assume the Catalog is correct but seek clarification from the Graduate Advisor.

6.1 Required Course and Academic Work

The ESGP offers both the M.S. and Ph.D. degrees. The M.S. and Ph.D. programs are separate; students who enter the Ph.D. program do not need to acquire a M.S. degree first, although students may elect to take both (although this is very uncommon). The Ph.D. and M.S. degree programs

both require completion of the coursework given below and summarized in the tables. Students with a M.S. objective may need to take additional courses to fulfill the requirements of the Plan I (Thesis) or Plan II (Comprehensive Examination) options. Students are required to complete two units of ENSC 275 (Research Seminar in Environmental Sciences) and encouraged to enroll in the class each quarter that it is offered. Students must attempt 2 units of ENSC 401 (Professional Development in Environmental Sciences) within their first year of entering the ESGP. If a student receives a grade of NC in their first attempt, they must successfully complete 2 units of ENSC 401 by the end of their second year. All students are required to present each year at the annual Environmental Sciences Graduate Program Student Symposium. Full-time students must enroll in at least 12-units per quarter; typically, students will enroll in 1 to 12 units of ENSC 299 and/or ENSC 297 units each quarter to reach this 12-unit target. Note: We strongly advise students to enroll in a combination of ENSC 299 and ENSC 297 units in their first two years of study on the chance that they may, at a later date, wish to complete an M.S. degree rather than the Ph.D degree (see Section 6.5).



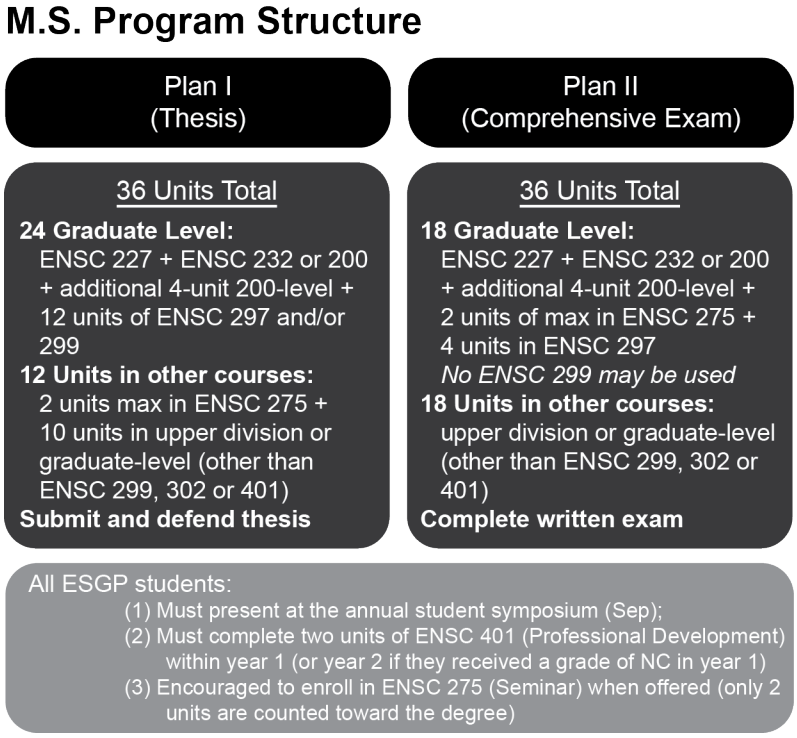
The Ph.D. and M.S. degree programs both require completion of the following courses:

- Each student must complete ENSC 227.
- Each student must complete either ENSC 200 or ENSC 232.
- Each student must complete at least one additional graduate-level, four-unit elective within or outside of the Department of Environmental Sciences. Upper division ENSC courses (100-series) may be used to fulfill this requirement if they are taken in conjunction with

ENSC 292 (Concurrent and Advanced Studies). See the Catalog for more information on ENSC 292.

- Each student may complete additional upper-division undergraduate courses and/or graduate-level courses depending on the student's field area and research focus.

6.2 Additional Master's Degree Requirements



The M.S. degree is offered under the Plan I (Thesis) and Plan II (Comprehensive Examination) options. The general requirements for the M.S. degree are found in the Graduate Studies section of the General Catalog. The normative time to degree is 2 years.

6.2.1 Plan I (Thesis)

Students must complete a minimum of 36 quarter units of graduate and upper-division undergraduate courses in, or significantly related to, Environmental Sciences. At least 24 of the 36 units must be in graduate courses and must include the graduate courses described in Section 6.1 for the Ph.D program. A maximum of 12 of the 36 total units may be in either directed research (ENSC 297) or graduate research for the thesis (ENSC 299). No more than 4 units of ENSC 290 and 2 units of graduate seminar courses may be applied toward the degree. No units from ENSC 401 or ENSC 302 may be applied toward the degree. After the first year, all students are required to give a presentation annually at the Environmental Sciences Graduate Program Student Symposium. A thesis must be written and accepted by the M.S. thesis committee members, and a final oral defense of the thesis must be passed.

6.2.2 Plan II (Comprehensive Examination)

Students must complete a minimum of 36 quarter units of graduate and upper-division undergraduate courses in, or significantly related to, Environmental Sciences. At least 18 of the 36 units must be in graduate courses and must include the graduate courses described in Section 6.1 for the Ph.D program (ENSC 227, ENSC 232/200 and so on). No more than 4 units of ENSC 290, 12 units of ENSC 297, and 2 units of graduate seminar courses may be applied toward the graduate unit requirement or the degree. No units from graduate research for thesis or dissertation (ENSC 299) may be used to satisfy the graduate unit requirement or the degree. No units from ENSC 401 or ENSC 302 may be applied toward the degree.

Students must take a comprehensive written examination that covers fundamental topics in environmental sciences. The written examination, which is three to four hours long, is prepared and evaluated by a committee appointed by the relevant Field Director. The examination is usually taken during the latter part of the final quarter in the M.S. program. Students must wait at least eight weeks before retaking a failed examination. Students failing the examination twice are dismissed from the program. Ph.D. students who have passed their written qualifying exam, but who wish to leave the graduate program with a Plan II Master's Degree, may substitute the Ph.D written qualifying for the M.S. comprehensive examination with the approval of their Major Professor. If a Ph.D. student fails their written qualifying exam (i.e., <75% overall score) but obtains an overall score of 65% or better and wishes to leave the graduate program with a Plan II Master's Degree, they may substitute the Ph.D. written qualifying for the M.S. comprehensive examination with the approval of their Major Professor.

6.3 Additional Doctoral Degree Requirements

The general requirements for the Ph.D. degree are found in the Graduate Studies section of the General Catalog. After the first year, all students are required to give a presentation annually at the Environmental Sciences Graduate Program Student Symposium. The normative time to degree is 5 years.

6.3.1 Ph.D. Written Qualifying Examination

Following completion of all required course work, a Ph.D. Written Qualifying Examination will be prepared and administered to the student by a Ph.D. Written Qualifying Examination Committee (Section 5.4.3). The purpose of this examination is to determine whether the student has gained sufficient knowledge in the chosen field to perform professionally and competently. This examination may be attempted only twice. A student failing the written qualifying examination must wait until the following quarter to retake the exam. If this examination is failed twice, the student may be redirected to the M.S. degree if the student does not already hold an M.S. in Environmental Sciences or terminated from the program. Students are encouraged to take this examination near the beginning of the second year of study.

The Field Director solicits examination questions from the Ph.D. Written Qualifying Examination Committee. The Field Director then combines these questions into a comprehensive and coherent set of questions for the written exam. The Ph.D written examination consists of a 6 to 8 hour closed-book examination spread over two days. Students are allowed the use of a computer for performing computations and typing out their answers, but no internet connection is allowed (the computer will be supplied by the Department). Once completed, the student sends their completed examination to the Field Director who distributes the examination to the Ph.D. Written Qualifying Examination Committee for grading. Each Committee member is responsible for assigning a score (0 to 100%) to the questions they submitted and may also make recommendations on scoring other questions. The Field Director collects the scores from the Committee and computes an overall score for the exam. Depending on the difficulty and relevance of the questions, the Field Director may weight certain questions more than others. An overall passing score on the Ph.D. Written Qualifying Examination is 75% or higher.

6.3.2 Ph.D. Oral Qualifying Examination

A student who satisfactorily passes the Ph.D. Written Qualifying Examination may proceed with the Ph.D. Oral Qualifying Examination, which will focus on the dissertation proposal. This examination is conducted before the Oral Qualifying Examination Committee, consisting of five faculty members, one of whom must be from outside the ESGP (Section 5.4.4). The Oral Qualifying Examination should be taken no later than one year after the Written Examination is passed. This examination may be attempted only twice. If this examination is failed twice, the student will be redirected to the M.S. degree if the student does not already hold an M.S. in Environmental Sciences or terminated from the program. The Ph.D. Written and Oral Qualifying Examinations will normally be taken at the end of the second year of graduate study and before the start of the third year.

6.3.3 Dissertation

All Ph.D. students must write a doctoral dissertation, which must be read and accepted by all members of the Doctoral Dissertation Committee, comprised of at least three faculty members from the ESGP. A final oral dissertation defense (seminar) in front of the Department and the Doctoral Dissertation Committee is required. The student should contact the Student Services Advisor approximately 2 weeks before the scheduled defense date so that the Advisor has time to notify the Department about the defense.

6.4 Candidacy

Students who have satisfied all ESGP requirements in accordance with applicable rules and regulations, except for completing a thesis (Plan I M.S.), comprehensive examination (Plan II M.S.), or dissertation (Ph.D.), generally are eligible to "advance to Candidacy." The primary purpose of this designation is to demonstrate adequate progress towards the degree. Students who do not advance within an acceptable timeframe (4 years for Ph.D. students) may have a hold placed on their registration. In addition, international students receive an exemption from non-Resident Tuition only for the first 6 academic quarters of their program; if an international student has not advanced by the beginning of the 7th academic quarter of their program, they are no longer

exempted from non-Resident Tuition until they advanced to Candidacy. Students who have advanced also receive certain benefits including higher GSR salaries and exemption from Non-Resident Tuition (for up to three years for Ph.D. students). Therefore, students are encouraged to advance to Candidacy as soon as possible. Note that students remain eligible to enroll in optional coursework after advancing. Refer to the Graduate Division Handbook for more details on Candidate status.

6.4.1 Plan I (Thesis) M.S. students

Students should apply to the Graduate Division for advancement to candidacy after completing the following steps in accordance with all applicable rules:

1. Satisfy the academic residence and GPA requirements
2. Satisfy the ESGP Student Symposium presentation requirement
3. Complete (or have in progress) all required coursework
4. Nominate a Thesis Committee and obtain approval for a thesis title and research plan
5. Submit an application before the quarterly deadline: https://graduate.ucr.edu/petitions-and-forms

6.4.2 Plan II (Comprehensive Examination) M.S. students

Students should apply to the Graduate Division for advancement to candidacy after completing the following steps in accordance with all applicable rules:

1. Satisfy the academic residence and GPA requirements
2. Satisfy the ESGP Student Symposium presentation requirement
3. Complete (or have in progress) all required coursework
4. Submit an application before the quarterly deadline.

6.4.3 Ph.D. students

Students are advanced to candidacy after completing the following steps in accordance with all applicable rules:

1. Satisfy the academic residence requirements
2. Satisfy the ESGP Student Symposium presentation requirement
3. Complete all required coursework
4. Pass the written qualifying exam
5. Nominate a Qualifying Examination Committee and set an oral examination date
6. Pass the oral qualifying examination and nominate a Dissertation Committee Chairperson
7. Submit an application before the quarterly deadline (the Student Services Advisor assists with the necessary forms).

6.4.4 Filing Fee Status and Leaves of Absence

Students who have satisfied all ESGP requirements in accordance with applicable rules and regulations, except for completing a thesis (Plan I M.S.), comprehensive examination (Plan II M.S.), or dissertation (Ph.D.), are eligible for "Filing Fee status" during their final quarter of enrollment. For Plan I M.S. and Ph.D. students to be eligible for Filing Fee status, a draft of the thesis or dissertation must be approved by the student's committee with only minor changes outstanding. Filing Fee status is optional but substantially reduces the cost of tuition and fees. A student may be on Filing Fee status only once (except for Plan II M.S. candidates who fail the exam, then a second quarter is allowed): if the degree is not completed during the Filing Fee quarter, full registration is required for all subsequent quarters to avoid a lapse of Candidacy.

The deadline to apply for Filing Fee status is usually one to two weeks before the quarter ends. The form to request Filing Fee status can be found on the Graduate Division website (https://graduate.ucr.edu/petitions-and-forms) and through the R'Grad portal. Note that it is usually best to be on Filing Fee status during the anticipated last quarter of study: tuition and fees are reduced and there is no penalty for failing to graduate during that quarter. However, also note that student privileges, services, and employment eligibility are affected by Filing Fee status. Students on Filing Fee status are not eligible for TA or GSR appointments, financial aid, research grants and do not receive health insurance through the Student Health Insurance Plan (SHIP).

Students may request a Leave of Absence because of illness or family responsibility. The form to request a Leave of Absence can be found on the Graduate Division website (https://graduate.ucr.edu/petitions-and-forms) and may be available through the R'Grad portal. Since students on Leave do not pay fees, they may not use University facilities or make demands on faculty time. Students on Leave are ineligible for fellowships, research grants, financial aid or the Student Health Insurance Plan (SHIP). A graduate student on Leave may not work on any UC campus nor can they take qualifying examinations or receive credit for academic work done during the leave period.

Students may also consider declaring Ready to Enroll Status if they cannot enroll for one or more quarters. For more information about this student status please contact the Environmental Sciences Graduate Advisor.

6.5 Moving from the Ph.D. Program to the M.S. Program

After the first year or two in the Ph.D. Program, students and their advisors may come to the decision that a Ph.D. degree isn't practical or desirable for the student or that the student's and advisor's goals are not compatible. At this juncture, students have several options including: i) continuing in the Ph.D. program under the direction of a different Major Professor, ii) withdrawing from the Ph.D. program and leaving UC Riverside, and iii) withdrawing from the Ph.D. program and entering one of the Environmental Sciences Master's Program tracks (Plan I or II) under the direction of their current Major Professor. This last option is open to students who entered the Environmental Graduate Program with Bachelor's and Master's degrees. For students with a prior Master's degree, the Major Professor would prepare a justification letter

explaining how the Environmental Sciences M.S. degree will be different from the student's previous Master's degree.

If the student and their Major Professor decide that there is sufficient research productivity on the part of the student to justify writing an M.S. thesis, then the student will need to submit an application to Advance to Master's Plan I Candidacy by the first day of the quarter that the student wishes to graduate. A student may request permission from Graduate Division to change their degree objective from a Ph.D. to Plan I (Thesis) M.S. by submitting a Change in Degree Objective (https://graduate.ucr.edu/petitions-and-forms) form if the student wishes to go on Filing Fee status for their final quarter. If the student does not wish to apply for Filing Fee status, the student can remain in the Ph.D. program until they had completed the requirements for the M.S. Plan I and subsequently withdraw from the Ph.D. program. For this transition to occur smoothly it is important that the student complete all course work described in Section 6.1 for the Ph.D. program within the first year of study. In addition, when enrolling in extra research units each quarter, students are advised to split these units equally between ENSC 299 and ENSC 297. ENSC 299 units are required to meet the Graduate Unit Requirement for the Plan I M.S. Program. ENSC 297 units may be required to meet the overall unit requirement for the Plan I M.S. Program (see Section 6.2.1) although no more than 12 units of ENSC 297 and ENSC 299 combined will be allowed to count toward the degree. Once all course requirements are met, the student will submit and defend their thesis and the M.S. degree will be awarded.

If the decision to withdraw from the Ph.D. program and enter the M.S. program occurs after the student passed the Ph.D. written qualifying exam (or received a Master's pass; see Section 6.2.2), then the student has the option of completing a Plan II (Comprehensive Exam) M.S. degree in Environmental Sciences. In this case, the Ph.D. written qualifying exam can be used as the Comprehensive Exam. Note that the Graduate Unit Requirements for the Plan II M.S. are different from the Plan I M.S., and no ENSC 299 units can be used to satisfy the graduate or overall unit requirements for a Plan II M.S. Instead, students will likely use ENSC 297 units (up to a maximum of 12 units) to at least partially satisfy both the 18 Graduate Unit Requirement and the 18 Other Unit Requirement assuming that they only took the three required graduate level courses for the Ph.D Program [i.e., ENSC 227, ENSC 232 or 200 and one additional 200-level course (or upper division combined with ENSC 292)]. Once all course requirements are met, the M.S. degree will be awarded. As with students moving to Plan I M.S. Program from the Ph.D., students do not need to change their degree objective unless they wish to apply for Filing Fee status for their last quarter of study. In addition, the student will need to submit an application to Advance to Master's Plan II Candidacy by the first day of the quarter that the student wishes to graduate.

Students moving from the Ph.D. to M.S. program should be aware of some additional restrictions on reaching the 36 unit requirement. Only two units of ENSC 275 and no units of ENSC 302 or ENSC 401 may be counted toward the overall unit requirement for the Plan I and Plan II M.S. Programs. ENSC 292 (Concurrent and Advanced Studies) can be used to satisfy the unit requirements for the M.S. programs; taking ENSC 292 concurrently with an upper division ENSC course also raises the upper division course units to the graduate level. Four units earned from ENSC 290 and ENSC 265 can be used to satisfy the degree requirements for the Type I M.S. only.

Section 7: Facilities

7.1 Space

The Department of Environmental Sciences is housed in Science Laboratories 1 and the Geology Building. Both buildings contain offices for faculty, staff, and students, classrooms and meeting rooms, and state-of-the-art laboratories. High speed Ethernet and wireless service is available throughout the buildings. For building locations, refer to the campus map (http://campusmap.ucr.edu).

The Departmental Safety, Space, and Equipment Committee works with the Major Professors to assign office space to ESGP students. Students are assigned office space based on availability and demand. Currently most students share an office with at least one other student. Efforts are made to assign office space based on proximity to Major Professors, students with similar interests, and relevant facilities such as laboratories and instrumentation. When availability is limited, priority may be given to more advanced students and students supported by GSR and TA positions. All students have access to a mailbox and copy machine in Geology 2306.

7.2 Administrative Support

In addition to the staff in the CNAS Graduate Student Affairs Center (see Section 5), the Department is supported by professional staff in the BEES Administrative Unit.

Name	**Contact Information**	**Title and responsibilities**
BEES Administrative Staff	2460 Geology 951-827-5116	Offices for most professional staff. Packages delivered to this address.

7.3 Computing & Networking

While some students, particularly those with GSR and TA funding, may be provided with computers in their offices, the Department does not purchase personal computers for students. Students desiring to have exclusive access to a personal computer must purchase it themselves.

Section 8: Additional Information

8.1 Course Planning

Each student works with their Major Professor and Advisory Committee to develop a program of coursework to satisfy the degree requirements and the career objective. Students are encouraged to develop a course plan by the end of the second quarter of study and submit it to the Graduate Advisor for feedback.

The Schedule of Classes (http://classes.ucr.edu/) is the most accurate source of information for developing a course plan. However, it only provides information for the next academic quarter. The General Catalog provides information on all courses offered by the University. However, it does not always list when a course will be offered next and this can affect a student's timely progress through their program. Planned courses for the current academic year are posted on the Department website at: https://envisci.ucr.edu/courses. When in doubt, contact the instructor of record to confirm the teaching schedule for the course. Major Professors can often help resolve scheduling problems. Petitions to waive a course requirement or to substitute a different course should be initiated through the Student Services Advisor. M.S. students may obtain a limited amount of "credit by examination" in lieu of coursework; refer to the Graduate Division Handbook (https://graduate.ucr.edu/regulations-and-procedures) for more information.

Students should consider the scheduling of their written qualifying exams when developing a course plan. Exams cannot be administered until all course requirements have been met, and a student cannot advance to candidacy without passing the written exam. The Graduate Division Handbook (https://graduate.ucr.edu/regulations-and-procedures) provides additional guidance on these and related matters.

8.2 Satisfactory Progress

Students are expected to make "satisfactory progress" towards their degree objectives. To promote satisfactory progress, the ESGP encourages each student to develop a course plan with their Major Professor and other members of their Advisory Committee within the first or second quarter of study (see Section 2.2.3 and http://envisci.ucr.edu/graduate/current-students/resources). The ESGP also requires Major Professors to ensure the timely submission of annual student progress reports (instructions to complete this report is sent out by the Graduate Advisor). Students not making satisfactory progress are not eligible for any academic appointments (e.g., GSR, TA) and may not hold a merit-based fellowship. Guidelines for determining unsatisfactory progress include:

- Overall GPA below 3.0 or GPA below 3.0 in two successive quarters.
- Twelve or more units of "Incomplete" grades outstanding.

- Failure to complete program requirements (courses, examinations, attendance of symposia and seminar presentations) satisfactorily, within the period specified by the graduate program.
- Failure to pass a required examination in two attempts.
- Failure to pass qualifying exams within four years of matriculation.
- Failure to make progress in research for two consecutive quarters (NC provided for ENSC 297 and/or 299 units)
- Failure to make adequate progress toward the completion of the thesis or dissertation.
- Failure to complete the degree within 1 year after reaching normative time.

The ESGP considers these criteria as well as a review of all graduate work undertaken by the student in determining satisfactory progress. The ESGP must notify students in writing and as early as possible when a determination of unsatisfactory progress is made. Students are normally given one quarter to make the necessary improvements and demonstrate satisfactory progress. If improvement is not made, the student may be encouraged to withdraw from the program. If the student chooses not to withdraw, they may be subject to academic disqualification by the Dean of the Graduate Division.

8.3 Appealing Academic or Administrative Decisions

The procedure for appealing academic or administrative decisions that impacts a student's progress begins with the program. Academic or administrative decisions do not include grades; for grade appeals, see "Grading" at https://graduate.ucr.edu/regulations-and-procedures#appeal_procedures_for_graduate_students. Grounds for a formal appeal are provided in detail by Graduate Division under "Appeal Procedures for Graduate Students" at https://graduate.ucr.edu/regulations-and-procedures#appeal_procedures_for_graduate_students. A summary of these grounds is provided below:

- Evidence of a procedural error or violation of official policy.
- Evidence of non-academic criteria being used in an academic decision.
- Evidence of special mitigating circumstances beyond the student's control that were not properly taken into account in a decision.

Students are urged to pursue an informal resolution of any dispute of academic decisions. Many issues and concerns can be resolved through respectful communication among the affected parties without the need to escalate to the formal appeal process. At this stage, a third party (e.g., the Graduate Advisor or Program Director) may be asked to help informally mitigate the dispute and come to an amicable resolution.

If an informal resolution cannot be reached, the formal appeal should be initiated by written communication to the Graduate Advisor or, if there is a conflict of interest, the Program Director within 21 calendar days from the day that the student knew or should have known about the action or decision affecting their progress. The written statement must clearly indicate (1) the action or decision that is being appealed, (2) the date the action or decision occurred, (3) the grounds upon which the appeal is based (see above), and (4) the relief being requested. Any additional documentation or background may also be sent at this time.

The Graduate Advisor (or Program Director if there is a conflict of interest) determines whether the appeal is valid (i.e., meets the criteria stated above for grounds for a formal appeal). If the grounds of the appeal are in question, the Graduate Advisor may request additional material from the appellant and/or forward the appeal to the other party and ask them to provide a written response within 14 days of receipt. The appellant will be notified on the determination of validity within 21 days of submission of the original written appeal. If the appeal is determined to be valid, the Graduate Advisor will forward the appeal along with all documentation and responses to the Faculty Hearing Panel (discussed below). If a determination is made that the appeal is invalid based on the criteria stated above, the appellant can appeal the outcome to Graduate Division following the "Appeal of Program Decision" procedures which can be found at https://graduate.ucr.edu/regulations-and-procedures#appeal_procedures_for_graduate_students.

The Graduate Education Committee (minus any Graduate Faculty that were involved in the action or decision being appealed) serves as the program's Faculty Hearing Panel for the formal appeal following a determination by the Graduate Advisor (or Program Director) that the appeal is valid. The Panel must have at least 2 members. If less than two members are on the Panel because of conflicts of interest, the Graduate Advisor will appoint their replacements from the Graduate Faculty. The Panel will (1) review the written appeal, responses, and any other submitted material, (2) allow the affected parties to meet separately with the Panel, and (3) interview other parties to discover information relevant to the action or decision being appealed if necessary. The Panel may deem the result of an exam invalid but may not change the exam result. The Panel will make a decision within 60 days of submission of the original written appeal. If the appeal is approved, a written summary of the appeal and conclusions reached will be communicated to the Graduate Advisor. The Graduate Advisor is then responsible for communicating with Graduate Division to ensure prompt corrective action is taken and will send the summary to the Student Services Advisor to be kept in the student's academic file. The Graduate Advisor will also inform the student of the decision. If the appeal is not approved by the Panel, the appellant can appeal the outcome to Graduate Division following the procedures found at https://graduate.ucr.edu/regulations-and-procedures#appeal_procedures_for_graduate_students.

8.4 Professional Development and the Job Market

The ESGP faculty and staff are responsible for assisting students in obtaining employment following the completion of their degrees. The Major Professor, in particular, is expected to play a key role in this process. However, the student is responsible for taking the initiative to seek out job opportunities and for ultimately securing employment.

Students are encouraged to keep in mind their career goals throughout the duration of their time in the ESGP. Winning a fellowship, teaching a class, pursuing an internship, publishing an article, and/or presenting research at a professional meeting can signal to employers that a student is a good job prospect. It is never too early to start looking for these opportunities and discussing options with the Major Professor or other ESGP faculty.

Periodic discussions with the Major Professor also are advisable because many job openings are advertised through personal contacts or publications and email lists to which ESGP faculty

subscribe. Furthermore, the Major Professor typically is in the best position to provide the student with information and feedback about specific positions available to the student. In addition to providing advice, both the Major Professor and the other members of the student's Advisory or Thesis/Dissertation Committees can provide letters of recommendation which are usually required.

Announcements of job openings come to the ESGP in numerous ways and every effort is made to advertise these openings to students. However, students must be proactive about seeking out job opportunities on their own. Relevant professional organizations are a good place to start. Some have online employment databases where students can register as job seekers. Often the annual professional meetings of these organizations are where first round interviews are conducted.

8.5 Graduation

For Plan II M.S., the application to Advance to Candidacy (see Section 6.4.2) also serves as the "degree check" to ensure all the required coursework is completed. The final step needed to complete the degree is passing the comprehensive examination. The student should communicate with the Student Services Advisor, the Graduate Division, and the Registrar to ensure there are no outstanding issues and the degree will be awarded in a timely manner. The student's office should be vacated and keys returned to the Department before the start of the next quarter.

For Plan I M.S. and Ph.D. students who have advanced to Candidacy, the Thesis/Dissertation Committee is responsible for supervising and evaluating the remainder of the student's academic requirements. To complete the degree each student must:

- Complete and submit a written thesis/dissertation that is accepted by the committee.
- Pass an oral defense of the thesis/dissertation, unless granted a waiver.
- Submit a thesis/dissertation acceptance page signed by the appropriate committee members (the Student Services Advisor assists with the required forms).
- Complete a "degree check" with the Graduate Division and deposit the thesis/dissertation before the quarterly deadline.

Filing deadlines can be found at http://graduate.ucr.edu/graduation-procedures and the thesis/dissertation format guide is available at http://graduate.ucr.edu/dissertation-and-thesis-submission. Upon passing the oral defense, the student should communicate with the Student Services Advisor, the Graduate Division, and the Registrar to ensure there are no outstanding issues and the degree will be awarded in a timely manner. *Note that the student must bring a draft of the thesis/dissertation to the Graduate Division at least one week before the filing deadline for a format review.* The student's office should be vacated and keys returned to the Department before the start of the next quarter.

If a student plans to complete the degree during Fall or Winter quarters but does not, the student may complete the degree before the next quarter officially begins and not be assessed registration fees for the new quarter. If a student plans to complete the degree during Spring quarter but does not, and if the student has been registered or on Filing Fee status for each of the three quarters preceding Summer Session, the student may complete final degree requirements during the

summer months without paying additional fees. Otherwise, students must register for 2 units of Summer Session credit to complete. Students cannot use Filing Fee status in the summer.

Students admitted to the M.S. program who have not yet satisfied all degree requirements and who desire to continue in the Ph.D. program instead must petition the Graduate Division. International students also must reconfirm financial support to obtain approval.

A Ph.D. Candidate who must leave UCR and end their studies without a degree may apply for the Candidate in Philosophy. This will only be awarded to students leaving UCR without a M.S. or Ph.D. degree. The Student Services Advisor assists with the required forms.

Sample schedule for a Ph.D. student

MATRICULATION YEAR

Fall	Student reviews information about the ESGP and contacts potential Major Professors to discuss opportunities.
December	Student submits completed application to Graduate Division for priority consideration.
February	Notices of admission and financial aid sent.
March	Student discusses course work and research plans with the Major Professor.
April	Student accepts the UCR offer (deadline is April 15th).
May-Aug	Student is in periodic contact with UCR, the ESGP, and the Major Professor to coordinate matriculation. Student registers for classes.

YEAR 1

September	Orientation; attend the ESGP Student Symposium; classes begin.
Sep-Jun	**First year of study**: Student develops a course plan with guidance from the Major Professor (required) and Advisory Committee (recommended) and may submit this to the Graduate Advisor for feedback. Student focuses on course work and periodically discusses research and funding plans with the Major Professor. Student allocates an increasing amount of time to research throughout the year.
Jun-Sep	Student works with their Major Professor to identify potential Written Qualifying Exam Committee members and prepares for the written qualifying exam.

YEAR 2

September	Student presents at the ESGP Student Symposium.
Sep- Jun	**Second year of study**: Student passes the written qualifying exam. Student focuses on the development of the dissertation proposal and conducts preliminary research to strengthen the proposal. Student nominates the Qualifying Examination Committee.
Jun-Sep	Student prepares for and passes the oral qualifying exam, nominates the Dissertation Committee, and advances to candidacy.

YEAR 3	
September	Student presents at the ESGP Student Symposium.
Sep-Jun	**Third year of study**: Student works full-time on research, conferring regularly with the Dissertation Committee. If no TA experience to-date, student may seek a TA position.
YEAR 4	
Jun-Jun	**Fourth year of study**: Student works full-time on research, conferring regularly with the Dissertation Committee. Student presents work at the ESGP Student Symposium and submits work to a professional meeting and/or a refereed journal.
YEAR 5	
Jun-Jun	**Fifth year of study**: Student works full-time on research, conferring regularly with the Dissertation Committee. Student presents talk at the ESGP Student Symposium. Student submits a second or third work to a professional meeting and/or a refereed journal. Student enters the job market in Fall, interviews for positions during Winter, and receives an offer in Spring. Student passes the oral defense of the dissertation and graduates in June.

Graduate Student Learning Outcomes

Student learning outcomes (SOs) for a Ph.D. in Environmental Sciences

SO1: Students who graduate with a Ph.D. in Environmental Sciences from UCR will have comprehensive knowledge of factual information, theoretical principles, and methodological approaches in the core areas of their chosen field area. This should enable them to pursue either academic or non-academic careers that relate to their major discipline.

SO2: Students who graduate with a Ph.D. in Environmental Sciences from UCR will produce a dissertation that contributes to fundamental knowledge in their chosen discipline. The learning outcomes from experience should include (1) an ability to critically read and evaluate scholarly literature; (2) integrate and synthesize new ideas; (3) identify relevant research questions; and (4) develop and carry out appropriate research strategies.

SO3: Students with a Ph.D. in Environmental Sciences should be effective communicators.

SO4: Students with a Ph.D. in Environmental Sciences should be capable professionals.

SO5: Students with a Ph.D. in Environmental Sciences who wish to pursue an academic career should have learned the skills required for them to become effective teachers.

Student learning outcomes for a M.S. in Environmental Sciences

SO1: Students who graduate with an M.S. in Environmental Sciences will master key concepts of the field area in which they specialize (field areas are the same as for the Ph.D.).

SO2: Students who graduate with an M.S. Plan I (Thesis) in Environmental Sciences have experience in original research.

SO3: Students who graduate with an M.S. in Environmental Sciences develop skills that foster professionalism in their chosen fields.

SO4: Students who graduate with an M.S. in Environmental Sciences should develop skills for effective communication.