

Environmental Sciences  
Graduate Program Handbook  
2014-2015

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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 November 2014. 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 and the Graduate Student Handbook published by the Graduate Division. This handbook should be consulted in conjunction with those documents which are available on the web at <http://www.catalog.ucr.edu/> and <http://www.graduate.ucr.edu/GSHndbk.pdf>.

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## Other Important Deadlines

***Register for Classes***

See: <http://www.classinfo.ucr.edu/enrollment/whentoenroll.htm>

***Submit Course Plan***

Before the end of the second quarter of study.

***Establish Advisory Committee***

Before the end of the first year of study.

***Important Dates***

See: <http://graduate.ucr.edu/forms/Important Dates 2014-15.pdf>

## ESGP “Cliffs Notes”

*In the spirit of the original, below is a summary of the most essential information for students.*

1. This is *your* education. Take ownership of it, be proactive about it, 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 ESGP Student Affairs Office.
  - For further clarification ask the Graduate Adviser.
3. Important events for incoming students:
  - Initial registration & enrollment – refer to section 3.3.
  - Transitioning to Riverside – see links in section 3.3.
  - Orientation – refer to the schedule on page ii.
4. Important events during the first year:
  - Quarterly registration through GROWL (<http://growl.ucr.edu>).
  - Submit 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.
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 take a comprehensive examination.
  - Ph.D. students must pass a written qualifying exam, nominate a Qualifying Exam Committee and pass an oral qualifying exam that focuses on the dissertation proposal, and nominate a Dissertation Committee Chairperson.
7. Before graduating (refer to section 8.4) ...
  - 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 (five) years for M.S. (Ph.D.) students.
  - M.S. (Ph.D.) students should aim to advance to Candidacy before the beginning of the second (third) year of study.

## Table of Contents

Foreword	i
Other Important Deadlines	ii
ESGP “Cliffs Notes”	iii
Table of Contents	iv
Section 1: Introduction	1
Section 2: Organization & Administration	1
2.1 Department and College	1
2.2 Graduate Program	2
Section 3: Admissions Process	6
3.1 Admissions Criteria	6
3.2 Selecting a Field Area	6
3.3 Registration & Enrollment	8
Section 4: Funding	10
4.1 Grants, Scholarships & Fellowships	10
4.2 Graduate Research Assistantships	11
4.3 Teaching Assistantships	12
Section 5: Advising	13
5.1 Orientation	13
5.2 Professional Staff	13
5.3 Major Professor	13
5.4 Committees	14
Section 6: Academic Requirements and Regulations	15
6.1 Required Course Work	15
6.2 Additional Master’s Degree Requirements	17
6.3 Additional Doctoral Degree Requirements	18
6.4 Candidacy	18
Section 7: Facilities	20
7.1 Space	20
7.2 Administrative Support	21
7.3 Core Instrumentation	22
7.4 Computing & Networking	22
Section 8: Additional Information	23
8.1 Course Planning	23
8.2 Satisfactory Progress	24
8.3 Professional Development and the Job Market	24
8.4 Graduation	25
Appendices (forms are available from the ESGP Student Affairs Office)	
Course Plan / Field Area form	A1
Major Professor / Advisory Committee form	A2
Student Progress & Evaluation form	A3
Sample schedule for a Ph.D. student	A4

## Section 1: Introduction

The Environmental Sciences Graduate Program (ESGP) offers the 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 and environmental quality. 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, biological, and societal influences. This interaction makes graduate study in environmental sciences distinct from many other scientific fields.

We have designed our program to offer advanced training in a number of 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 in the state and nation. Potential career opportunities exist at regulatory agencies, consulting firms, government and academic research institutions, and industrial research facilities.

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 Adviser. The ESGP Program Committee formally considers all petitions for modifications or exceptions to ESGP policies.

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## 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 Divisions: Agriculture and Natural Resources, Life Sciences, and Physical and Mathematical Sciences. 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 Chairperson is appointed by the Dean on the basis of advice 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 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:

- Academic Planning
- Budget
- ESGP Program
- ESGP Admissions
- Equipment
- Faculty Awards
- Safety
- Scholarship
- Social
- Space
- Staff Research Assistant Oversight
- Undergraduate Curriculum
- Web Page

## 2.2 Graduate Program

The ESGP is designed to offer advanced training in a number of specialized Field areas within environmental sciences, operating within a single graduate degree program administered by the Department of Environmental 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 Faculty Membership Criteria

The Environmental Sciences Graduate Program (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 justifying the appointment. Cooperating Faculty status lasts 2 years for assistant and associate professors and 3 years for full professors and is renewable.

### ***Emeritus Faculty Members***

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

## **2.2.2 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 two Graduate Advisers and two major committees: a Program Committee with responsibility for program oversight and issues concerning enrolled students; and an Admissions Committee with responsibility for recruiting, student admission, and financial aid.

### ***Program Director***

The ES Department Chair serves as the Program Director. He or she is responsible for all administrative tasks not otherwise delegated by the Rules of Governance or assigned to the Graduate Advisers. In consultation with the Graduate Advisers, he or she appoints all members of the Program and Admissions committees.

### ***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 the annual evaluation of graduate students, the administration of the written and oral examinations by the Graduate Fields, 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.

### ***Program Committee***

The ESGP Program 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 Steering 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 an annual performance review 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; maintenance of the graduate student handbook; organizing academic events such as student conferences and seminar series (invited speakers); organizing ESGP social events; coordinating teaching and course scheduling that affects multiple Fields; reviewing and approving student course plans and Advisory Committees, and enforcing course and degree requirements.

The Program Committee is comprised of the Program Director (*ex officio*), one ESGP Graduate Adviser who serves as Chair of the committee, and no less than three Graduate Faculty members who are appointed for renewable one-year terms by the Program Director in consultation with the Graduate Adviser. These appointments must include at least one representative from each of



three areas: physical and chemical sciences, biological sciences, and social sciences. All committee members have full voting rights.

The Program Committee also includes a current ESGP graduate student representative who is elected by the ESGP student body. The student representative does not have voting rights and is excluded from any discussions involving confidential personnel issues.

### ***Admissions Committee***

The Admissions Committee is responsible for most issues related to prospective and incoming students and financial aid. 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; and allocation of financial aid for incoming and continuing ESGP students (in conjunction with the ES Department Vice Chair for Teaching, and other departments as needed).

The Admissions Committee is comprised of the Program Director (*ex officio*), one ESGP Graduate Adviser who serves as Chair of the committee, and no less than three Graduate Faculty members who are appointed for renewable one-year terms by the Program Director in consultation with the Graduate Adviser. These appointments must include at least one representative from each of three areas: physical and chemical sciences, biological sciences, and social sciences. All committee members have full voting rights.

### ***Field Administration***

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 (in conjunction with the Admissions Committee); course requirements and content; teaching load allocation and course scheduling within the Field; administering written qualifying exams; evaluating student progress; job market assistance; and communicating with the ESGP standing committees.

Each Graduate Faculty member belongs to at least one Field and contributes to the administration of that Field. Granting and revoking membership in a Field must be approved by a majority vote of the current Field members. Changes in Field membership must be reported in a timely manner to the Program Director who maintains the official Field membership lists. Each Field also elects, with a majority vote of its members, one member to serve a renewable one-year term as the Field Director.

All changes at or above the Field level (e.g., additions and deletions of Fields, 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 requirements, course content, exam formats) must be approved by a majority vote of the Graduate Faculty members in that Field.

### 2.2.3 Academic Structure

The academic structure of the ESGP is intended to be highly flexible. Successful student applicants are admitted to a specific Field area and are sponsored by a Major Professor (a Graduate Faculty member) who is a member of that Field. Each student works with his or her Major Professor to develop a program of coursework to satisfy the degree requirements and the career objective. ***A course plan must be completed by the end of the second quarter of study and submitted to the Graduate Advisor.*** The course plan becomes part of the student's academic file and is used to ascertain that the student's committee members are in agreement that the proposed plan of coursework should adequately prepare the student for their research and their comprehensive exam (MS Plan II) or Ph.D. qualifying exam. Each student's course plan must be approved by a majority vote of the Program committee. Any changes to a student's course plan or Field area also must receive majority approval from this committee. Students graduating from the ESGP all receive diplomas reading either "Master of Science in Environmental Sciences" or "Doctor of Philosophy in Environmental Sciences," but transcripts also reflect a student's Field area.

#### ***Major Professors***

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

### 2.2.4 Meetings, Quorum, and Amendments

The Graduate Faculty 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 by the Program Committee, 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 Program Committee; a recommendation by the Program Committee to the Graduate Faculty; and majority approval by the entire Graduate Faculty.

### 2.2.5 Program Director, Graduate Advisers, and Field Directors

- ***Program Director:*** Dr. James O. Sickman, Chair of the Department of Environmental Sciences
- ***Graduate Adviser:*** Dr. Jiří Šimůnek

- **Field Directors**
    - **Environmental Chemistry and Ecotoxicology:** Dr. Daniel Schlenk
    - **Environmental Microbiology:** Dr. David Crowley
    - **Environmental and Natural Resource Economics and Policy:** Dr. Keith Knapp
    - **Soil and Water Sciences:** Dr. Laosheng Wu
    - **Environmental Sciences and Management:** Each student's Major Professor serves as the Field Director for that student.
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## Section 3: Admissions Process

### 3.1 Admissions Criteria

Entry to the ESGP requires completion of a baccalaureate degree in a field appropriate 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; a basic science such as biology, chemistry, or physics; or in a social science discipline such as economics, political science, geography, or sociology. Coursework requirements are specific to each Field area.

Applications will be evaluated based on evidence of past academic performance (including GPA and GRE), letters of recommendation, the student's statement of purpose, and overall promise as a future researcher. Each student also must select a Field area (see below) and 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/grad\\_admissions.html](http://graduate.ucr.edu/grad_admissions.html). Answers to frequently asked questions about the admissions process can be found at: <http://www.envisci.ucr.edu/graduate/faq.html>. 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:

- Environmental Chemistry and Ecotoxicology
- Environmental Microbiology
- Environmental and Natural Resource Economics and Policy
- Soil and Water Sciences
- Environmental Sciences and Management

### 3.2.1 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.

**Faculty:** Jay Gan, Daniel Schlenk.

**Entrance Requirements:** There are no entrance requirements for the Environmental Chemistry 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 course or specific elective courses may, however, need to first take prerequisite courses.

### 3.2.2 Environmental Microbiology

The Environmental Microbiology field area encompasses the study of microbial processes in natural and agricultural ecosystems and the effects of microorganisms on environmental processes and environmental quality. Research topics include fundamental research on microbial physiology, genetics, and ecology as related to the environment, applied research on microbial effects on the fate and transport of pollutants, anthropogenic effects on microbial communities, fate and transport of human pathogenic microorganisms in the environment, and the application of microorganisms and microbial assays as indicators of soil and water quality.

**Faculty:** David Crowley, Marylynn Yates.

**Entrance Requirements:** Students admitted to the Environmental Microbiology field area are expected to have a baccalaureate degree in biology, microbiology, or closely related field or demonstration of extensive background in biology and microbiology. Recommended prior course work includes chemistry (general, organic, and biochemistry), biology (general and advanced course work), microbiology (general), and statistics (general). Deficiencies in these areas must be remedied during the first year of graduate school.

### 3.2.3 Environmental and Natural Resource Economics and Policy

The economics and policy field area focuses on the human aspects of environmental problems. Coursework emphasizes training in the traditional areas of environmental and natural resource economics, including welfare theory, externalities, pollution control, resource extraction, and non-market valuation, but also in sustainability, environmental management, and environmental policy. Research topics could include the environmental impacts of agriculture, transportation and urbanization, land use in poor and industrialized countries, international trade and the environment, climate change, and methodological advances in non-market valuation, to name just a few. Training in this field enables a student to analyze and address a wide variety of environmental policy issues.

**Faculty:** Ken Baerenklau, Ariel Dinar, Keith Knapp, Kurt Schwabe.

**Entrance Requirements:** Students admitted to the Environmental and Natural Resource Economics and Policy field area normally will have completed a baccalaureate degree in the natural sciences, social sciences, or engineering. At least two undergraduate courses in economics and statistics are recommended. Students who do not have sufficient background to take the core courses or field courses may need to first take prerequisite courses.

### 3.2.4 Soil and Water Sciences

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

**Faculty:** Michael Anderson, David Crohn, Jay Gan, Robert Graham, Jim Sickman, Jirka Simunek, Laosheng Wu, Marylynn Yates.

**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.

### 3.2.5 Environmental Sciences and Management

The Environmental Sciences and Management field area is designed to serve students seeking interdisciplinary training in environmental research. Students enrolled in this field area will be expected to pursue a rigorous research plan that involves research in one or more of the following areas: science, management, or policy. Students will have the opportunity to select study committees from a spectrum of environmental disciplines.

**Faculty:** All Environmental Science Graduate Program Faculty.

**Entrance requirements:** There are no additional entrance requirements for this field area beyond those to enter the graduate program.

## 3.3 Registration & Enrollment

Applicants are notified of admissions decisions by the end of February; however fellowship and financial aid decisions may take longer. Successful applicants are encouraged to contact the ESGP Graduate Adviser 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 ESGP Student Affairs Office 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).
- 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 Adviser 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 can 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:

Graduate Student Affairs Office  
Environmental Sciences Graduate Program  
3428 Pierce Hall  
University of California  
Riverside, CA 92521  
(951) 827-5103  
[envisci@ucr.edu](mailto:envisci@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/>
  - Campus and Community: [http://graduate.ucr.edu/campus\\_community.html](http://graduate.ucr.edu/campus_community.html)
  - Student Services: [http://graduate.ucr.edu/current\\_students.html](http://graduate.ucr.edu/current_students.html)
  - International Education Center: <http://internationalcenter.ucr.edu/>
  - Graduate Student Association: <http://www.gsa.ucr.edu/>
  - Environmental Sciences mini-GSA:  
<http://www.envisci.ucr.edu/graduate/minigsa/minigsa.html>
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## 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/>
- [http://graduate.ucr.edu/fin\\_aid.html](http://graduate.ucr.edu/fin_aid.html)
- <http://graduate.ucr.edu/funding.html>

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 ESGP Admissions Committee is responsible for coordinating student financial aid. This does not mean the committee is responsible for securing aid for students, but rather the committee assesses each student's situation and allocates a limited amount of departmental funds accordingly. *Therefore it is imperative that each student assume responsibility for his or her funding and be proactive about planning ahead and coordinating funding with the Major Professor.* Some common types of funding for ESGP graduate students are discussed below.

### 4.1 Grants, Scholarships & 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 (<http://finaid.ucr.edu/typesAid/Pages/Grants.aspx>).

#### 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 (<http://finaid.ucr.edu/typesAid/Pages/Scholarships.aspx>).

CNAS administers some scholarships for continuing graduate students: <http://www.cnas-ugresearch.ucr.edu/grants/index.html>. Deadlines typically are in the spring.

The Department of Environmental Sciences also has some scholarships for continuing graduate students: <http://www.envisci.ucr.edu/graduate/scholarships.html>.

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 Winter quarter (for Fall admission) and require a combined GRE score of 1100 or higher on the verbal and quantitative sections and a minimum GPA of 3.25 (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 January 5 (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 course 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 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 his or her 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 his or her 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.

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 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. The first priority for TA appointments goes to students who have unfulfilled TA commitments as part of their support package. Remaining TA positions are assigned to eligible students in the ESGP or in cognate programs. Any further remaining TA positions will be posted and assignments will be made based on the pool of applicants. All ESGP graduate students who have remaining TA eligibility are automatically considered for available TA slots; formal application is not necessary. A student may decline support as a TA, but the student must then provide his or her 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 loss of funding.

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 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. 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 shown on page ii of this handbook.

### 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 our Student Affairs Office:

<b>Name</b>	<b>Contact Information</b>	<b>Title and responsibilities</b>
John Herring	1140A Bachelor Hall 951-827-2441 <a href="mailto:john.herring@ucr.edu">john.herring@ucr.edu</a>	<i>Student Affairs Assistant</i> Responsible for Earth Sciences and Environmental Sciences Graduate Program

### 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 adviser). Ultimately each student is responsible for taking ownership of his or her 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 an active role in the supervision, mentoring, and evaluation of their graduate students.

Each student is encouraged to keep in close contact with his or her 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, he or she 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 Adviser when such a change is made. The Major Professor/Advisory Committee form is included in the appendix.

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 guiding the student's research.
- Evaluating student progress and performance (see form in the appendix).

- Assisting the student with job placement (see Section 8.2).

## 5.4 Committees

### 5.4.1 Advisory Committee

In consultation with the Major Professor, *each student must select an Advisory Committee before the end of the first year of study*. The Major Professor/Advisory Committee form is included in the appendix. The Advisory Committee should consist of your Major Professor as Chair plus two other ESGP Graduate Faculty members (a list of ESGP faculty members can be found in the General Catalog). 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 the Thesis/Qualifying/Dissertation Committee when a student advances to Candidacy (see below, and Section 6.4). However this is not necessarily the case: as with the Major Professor, the Advisory Committee can and should be changed 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 when the student is preparing to apply for Candidacy (see Section 6.4). This three person committee includes the Major Professor as Chair plus two additional members. The committee is nominated on the application for Candidacy ([http://graduate.ucr.edu/forms/masters\\_advancement\\_forms/ENSC-MS.pdf](http://graduate.ucr.edu/forms/masters_advancement_forms/ENSC-MS.pdf)) and must be approved by the Graduate Dean. 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. 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 so the application for Candidacy may be submitted as soon as the student is eligible. 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; therefore at least one meeting between the student and the committee typically is needed before submitting the application and before substantial work on the thesis is begun.

### 5.4.3 Ph.D. Qualifying Exam Committee

For Ph.D. students, the Qualifying Exam Committee should be formed when the student is preparing for the oral qualifying examination (which focuses on the dissertation proposal). 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. *Both the proposed committee and exam date must be submitted to the Graduate Division at least two weeks (preferably one month) prior to the proposed oral exam date and must be approved by the Graduate Dean* (the ESGP Student Affairs Office assists with completion of the necessary form). 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 exam date to avoid unnecessary delays. Furthermore, because the ESGP oral examination focuses on the dissertation proposal, it

behooves the student to involve his or her committee members as early as possible in the proposal development. Note that the student is not responsible for forming a written qualifying examination committee; the Field Director establishes this committee and coordinates the exam.

#### 5.4.1 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) 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 ESGP Student Affairs Office assists with completion of the necessary form. *Graduate Division must be notified of any changes in committee membership no later than two weeks before the dissertation defense.* As with the Qualifying Exam 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 Dissertation Committee to be formed early in the student's research. Often members of the student's Qualifying Exam Committee will form the Dissertation Committee, but this is not necessary.

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## 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 Adviser.

### 6.1 Required Course 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. The Ph.D. and M.S. degree programs both require completion of the coursework given below, which is specific to each field area. 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 encouraged to attend a seminar each quarter (to be chosen in consultation with the Major Professor). Students must complete 2 units of ENSC 401 (Professional Development in Environmental Sciences) within their first year of entering the ESGP.

#### 6.1.1 Environmental Chemistry and Ecotoxicology

- All students must complete one core course: ENSC/ENTX200/CHEM246.

- Students focusing on Environmental Chemistry must complete 4 electives from the following list, of which at least 2 must be at the graduate level: ENSC104, ENSC/SWSC127, ENSC/SWSC/MCBL133, ENSC/ENTX/CHEM135, ENSC/ENTX/CHEM/SWSC136, ENSC/SWSC214, ENSC/SWSC217, ENSC/SWSC224, ENSC/SWSC225, ENSC/SWSC232, ENTX200L, ENTX/CHEM244, ENTX/CHEM/SWSC245, SWSC203, SWSC204.
- Students focusing on Ecotoxicology must complete: ENTX201 and ENTX208 and take at least two electives from the following list one of which must be at the graduate level: ENSC/SWSC214, ENSC/SWSC217, ENSC/SWSC224, ENSC/SWSC225, ENSC/SWSC232, ENTX200L, ENTX/CHEM244, ENTX/CHEM/SWSC245, SWSC203, SWSC204, ENTX154, ENTX205.

### 6.1.2 Environmental Microbiology

- Students must complete the following core courses: MCBL 201, MCBL 221, MCBL 211, and at least 4 elective courses (or 12 credit hours), three of which must be at the graduate level.

### 6.1.3 Environmental and Natural Resource Economics and Policy

- Students must complete two core course sequences: ECON 200A, ECON 200B, ECON 200C; and ECON 205A, ECON 205B, ECON 205C.
- Students must complete one field course sequence: ECON 207, ECON 208, ECON 209.
- Students must complete three elective courses comprised of upper division undergraduate courses and/or graduate courses approved by their adviser.
- Doctoral students must earn a satisfactory score on the cumulative examination in microeconomic theory and attain a 3.0 average in each of the core and field course sequences.
- No student will be given more than three attempts to achieve a satisfactory grade on the microeconomic theory cumulative examination. Any unexcused absences from the required examinations will be regarded as a failure.

### 6.1.4 Soil and Water Sciences

- Students must complete one course in each of the following core course groups.

**Chemistry:** ENSC 104/SWSC 104, CHEM 136/ENSC 136/ENTX 136/SWSC 136

**Physics:** ENSC 107/SWSC 107, ENSC 163

**Biology:** BPSC 134/ENSC 134/SWSC 134, ENSC 141/MCBL 141/SWSC 141

**Natural Structure and Diversity:** ENSC 138/GEO 138/SWSC 138, ENSC 140/SWSC 140

- Students may have completed these prior to admission or they may take them early in their graduate program. Students must present a departmental seminar summarizing results of their thesis or dissertation or internship during the final quarter of matriculation.

### 6.1.5 Environmental Sciences and Management

- Because students enrolled in this field area may carry out interdisciplinary research for their advanced degree, the graduate course plan will be individualized. It is expected that the student and his/her Advisory Committee will design a course plan that includes graduate environmental science, management, and/or policy courses. The student will be required to take 6 courses (24 units), 3 of which must be at the graduate level.

## 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. All students are required to give a presentation annually at the Environmental Sciences Graduate Program Student Symposium. 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. These must include the course requirements given above for the specific field area. At least 24 of the 36 units must be in graduate courses. A maximum of 12 of these units may be in graduate research for the thesis. No more than 4 units of ENSC 290 and 2 units of graduate seminar courses may be applied toward the degree. 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. These must include the course requirements given above for the specific field area. At least 18 units must be in graduate courses. Students may count no more than 2 units of graduate seminar courses and 6 units of graduate internship courses toward the required 18 units and no units from graduate research for thesis or dissertation.

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 Field Director. The examination is 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.

## 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, or should obtain a written waiver indicating release from this requirement from the graduate advisor. The normative time to degree is 5 years.

### 6.3.1 Written Qualifying Examination

Following completion of all course work prescribed by the student's Advisory Committee, a Ph.D. Written Qualifying Examination will be prepared and administered to the student by a Ph.D. Written Qualifying Examination Committee. The Ph.D. Written Qualifying Examination Committee will consist of at least three faculty members with interests in the student's line of research. The purpose of this examination is to determine that the student has gained sufficient knowledge in the chosen field to perform professionally and competently. This exam may be attempted only twice. If this exam 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.

### 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. This examination may be attempted only twice. If this exam 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 in front at least three Doctoral Dissertation Committee members may be required.

## 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. 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:

[http://graduate.ucr.edu/forms/masters\\_advancement\\_forms/ENSC-MS.pdf](http://graduate.ucr.edu/forms/masters_advancement_forms/ENSC-MS.pdf)

*Unless granted a Leave of Absence by the Graduate Division, Candidacy will lapse if the candidate does not register for every regular academic session (Fall, Winter, and Spring quarters) or if all remaining degree requirements are not satisfied within one calendar year after completion of the required coursework.*

#### 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. Take the comprehensive examination
5. Submit an application before the quarterly deadline:

[http://graduate.ucr.edu/forms/masters\\_advancement\\_forms/ENSC-MS.pdf](http://graduate.ucr.edu/forms/masters_advancement_forms/ENSC-MS.pdf)

*Unless granted a Leave of Absence by the Graduate Division, Candidacy will lapse if the Candidate does not register for every regular academic session (Fall, Winter, and Spring quarters) or if all remaining degree requirements are not satisfied within one calendar year after completion of the required coursework.*

#### 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 exam and nominate a Dissertation Committee Chairperson
7. Submit an application before the quarterly deadline (the ESGP Student Affairs Office assists with the necessary forms).

<http://graduate.ucr.edu/forms/phd-advancement/ENSC-PHD.pdf>

*Students are expected to advance to candidacy within four years of matriculation. Unless granted a Leave of Absence by the Graduate Division, Candidacy normally will lapse if the candidate does not register for every regular academic session (Fall, Winter, and Spring quarters) or if more than three calendar years have passed since advancement to candidacy.*

#### 6.4.4 Filing Fee Status

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: [http://graduate.ucr.edu/forms/Filing\\_Fee\\_PhD.pdf](http://graduate.ucr.edu/forms/Filing_Fee_PhD.pdf). 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. Refer to the Graduate Division Handbook for more information.

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## Section 7: Facilities

### 7.1 Space

The Department of Environmental Sciences is housed in both new and newly remodeled buildings. Our new building is Science Laboratories 1. This building is connected to the newly remodeled Geology Building which has served as our department’s home for decades. 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/imap/index.html>.

The departmental Space 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 Student Affairs Office (see Section 5), the department is supported by professional staff in the AEE Administrative Unit. Below is an abbreviated list of staff personnel who tend to interact more frequently with ESGP students.

<b>Name</b>	<b>Contact Information</b>	<b>Title and responsibilities</b>
Department Main Office	2258 Geology 951-827-5116	Offices for most professional staff. Packages delivered to this address.
Brittney Kuhn	2258 Geology 951-827-4504 <a href="mailto:louise.dehayes@ucr.edu">louise.dehayes@ucr.edu</a>	<i>Financial and Purchasing Assistant</i> Purchasing and storehouse orders, processing of repair and maintenance orders, processes travel and entertainment reimbursements, work orders for printing, physical plant, fleet services, telecommunications, parking, and bookstore.
Abraham Juliet	2258 Geology 951-827-5116 <a href="mailto:abraham.juliot@ucr.edu">abraham.juliot@ucr.edu</a>	<i>Senior Clerk</i> Responsible for deliveries, copy machine maintenance, distribution of copy codes, mail services, mail room supplies, and keys.
NAPSU	2630 Life Sciences 951-827-4228 <a href="mailto:napsupodc@ucr.edu">napsupodc@ucr.edu</a>	<i>Non Academic Personnel Service Unit</i> Processes staff personnel transactions in the payroll system including new hires, reappointments, leaves, and separations.

### 7.3 Core Instrumentation

The department is equipped to conduct a variety of research and teaching activities related to environmental sciences. The departmental instruments include:

- Perkin-Elmer 3000DV inductively coupled plasma optical emission spectrograph
- CE Elantech Nitrogen Carbon Analyzer
- Malvern Zetasizer III for laser analysis of particle size and electrophoretic mobility
- Mattson Cygnus 100 Fourier-transform infrared spectrometer
- Siemens D500 computerized X-ray diffractometer
- DuPont 9900 computerized thermal analyzer (DSC/DTA)
- Two atomic absorption spectrophotometers (Perkin-Elmer, Varian) with graphite furnace and hydride-vapor generation accessories
- Ten gas chromatographs (Hewlett-Packard, Varian, Shimatsu) with an assortment of detectors (FID, ECD, etc.)
- Seven HPLC/IC systems (Hewlett-Packard, Beckman, Dionex) with UV, electrochemical, conductivity, mass spectrometry, fluorescence, diode array, PAD, and radioisotope detection capabilities
- Three continuous flow analyzer systems (Alpkem, Technicon) for automated analysis of NO<sub>3</sub>, NH<sub>4</sub>, PO<sub>4</sub>, Br, etc.
- Four UV-Vis spectrophotometers with scanning and kinetics capabilities
- Shimadzu total organic carbon analyzer
- Beckman LS 5000TD liquid scintillation counter
- Packard gamma counter
- Three Conviron plant growth chambers with 100,000+ lux lighting and humidity control
- Various plate and shaking liquid culture incubators
- Several laminar flow biosafety cabinets
- High speed and ultraspeed centrifuges
- Walk-in cold rooms
- A living streams facility
- BioRad quantitative PCR thermal cyclers
- Nanodrop UV-Visible spectrophotometer
- BioRad gel imaging system
- Nikon E600 Fluorescence Microscope with attached Hamamatsu cooled-CCD camera
- Greenhouse and field facilities, including car, boat, drilling systems, etc.
- Additional information can be found at: <http://www.envisci.ucr.edu/about/facilities.html>

### 7.4 Computing & Networking

UCR boasts a state-of-the-art computer network. A summary of some of the main computer resources for students is given below. For more details, visit Computing and Communication's Student Services website: [http://www.cnc.ucr.edu/index.php?content=student\\_services](http://www.cnc.ucr.edu/index.php?content=student_services)

- Campus wireless network
- Five computer labs (Windows and Macintosh)

- Webmail accounts for all students (150MB each)
- Student personal website and file storage (20MB each)
- iLearn course management system
- iShare web-based file storage
- WebVPN off-campus access to the UCR network
- GROWL online access to student records
- Online library with access to most major databases and other UC library holdings

In addition, ESGP students have access to departmental computer resources including:

- Approximately 180 personal computers (Windows and Macintosh) and scientific workstations (Unix) located in faculty research laboratories
- A computer lab with approximately 20 personal computers (Window)
- A Windows-based Western Scientific 64 bit machine with 16 processor cores and 64GB of memory for large scale datasets and numerical modeling
- Three slide imaging systems
- Two digital projectors
- Optical scanners
- Numerous printers and plotters

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.

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## Section 8: Additional Information

### 8.1 Course Planning

Each student works with his or her Major Professor and Advisory Committee to develop a program of coursework to satisfy the degree requirements and the career objective. *A course plan must be completed by the end of the second quarter of study and submitted to the Program Committee.* Each student's course plan must be approved by a majority vote of the Program committee. Any changes to a student's course plan or Field area also must receive majority approval from this committee. The Course Plan / Field Area form is included in the appendix.

The Schedule of Classes (<http://www.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 his or her program. When in doubt, contact the instructor of record for a course to confirm the teaching schedule for the course. Major Professors often can help resolve scheduling problems. Petitions to waive a course requirement or to substitute a different course should be initiated through the ESGP Student Affairs Office. M.S. students may obtain a limited amount of "credit by examination" in lieu of coursework; refer to the Graduate Division Handbook 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 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 requires each student to submit an approved Course Plan by the end of the second quarter of study (see Section 2.2.3 and the appendix). The ESGP also requires Major Professors to submit annual student progress reports (see the appendix). 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, symposia 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 five years of matriculation.
- Failure to make progress in research for two consecutive quarters
- 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 normally are 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, he or she may be subject to academic disqualification by the Dean of the Graduate Division.

## 8.3 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 usually are 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.

## 8.4 Graduation

For Plan II M.S. students who pass the comprehensive examination, the application to Advance to Candidacy (see Section 6.4.1) also serves as the "degree check" and is the final step needed to complete the degree. The student should communicate with the ESGP Student Affairs Office, 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 ESGP Student Affairs Office 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/forms/Important Dates 2013-14.pdf> and the thesis/dissertation format guide is available at: <http://graduate.ucr.edu/dissertation.html>. Upon passing the oral defense, the student should communicate with the ESGP Student Affairs Office, 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 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 his or her 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 ESGP Student Affairs Office assists with the required forms.

# Course Plan / Field Area form

## COURSE PLAN / FIELD AREA Environmental Sciences Graduate Program

NAME OF STUDENT: \_\_\_\_\_ DATE PREPARED: \_\_\_\_\_

PROGRAM: M.S.  Ph.D.  DATE ENTERED PROGRAM: \_\_\_\_\_

EXPECTED COMPLETION DATE: \_\_\_\_\_

*A course plan must be completed by the end of the second quarter of study and submitted to the Graduate Adviser. Each student's course plan must be approved by a majority vote of the Program Committee. Any changes to a student's course plan or Field area also must receive majority approval from the Program Committee.*

- FIELD AREA:  Environmental Chemistry & Ecotoxicology  
 Environmental Microbiology  
 Environmental & Natural Resource Economics & Policy  
 Soil & Water Sciences  
 Environmental Sciences & Management

NEW FIELD AREA: Yes  No

COURSE PLAN (also note anticipated dates for written and oral exams, advancement to Candidacy):

Academic Year	Summer	Fall	Winter	Spring
1 <sup>st</sup> year	_____ _____ _____	_____ _____ _____	_____ _____ _____	_____ _____ _____
2 <sup>nd</sup> year	_____ _____ _____	_____ _____ _____	_____ _____ _____	_____ _____ _____
3 <sup>rd</sup> year	_____ _____ _____	_____ _____ _____	_____ _____ _____	_____ _____ _____
Additional years				

COMMENTS (attach additional pages if necessary):

\_\_\_\_\_  
STUDENT SIGNATURE

\_\_\_\_\_  
MAJOR PROFESSOR SIGNATURE



# Major Professor / Advisory Committee form

## MAJOR PROFESSOR / ADVISORY COMMITTEE *Environmental Sciences Graduate Program*

NAME OF STUDENT: \_\_\_\_\_ DATE PREPARED: \_\_\_\_\_

PROGRAM: M.S.  Ph.D.  DATE ENTERED PROGRAM: \_\_\_\_\_

EXPECTED COMPLETION DATE: \_\_\_\_\_

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### MAJOR PROFESSOR

*Each student must be sponsored by an ESGP Graduate Faculty member who agrees to serve as the student's Major Professor. Submit this form to the Graduate Adviser when changing Major Professors.*

Effective \_\_\_\_\_, the Major Professor is \_\_\_\_\_.  
DATE FACULTY MEMBER NAME

COMMENTS (attach additional pages if necessary):

\_\_\_\_\_  
STUDENT SIGNATURE

\_\_\_\_\_  
MAJOR PROFESSOR SIGNATURE

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### ADVISORY COMMITTEE

*In consultation with the Major Professor, each student must select an Advisory Committee before the end of the first year of study. The Advisory Committee should consist of your Major Professor as Chair plus two other ESGP Graduate Faculty members. Submit this form to the Graduate Adviser when selecting/changing the committee.*

Effective \_\_\_\_\_, the two additional Advisory Committee members are:  
DATE

\_\_\_\_\_  
FACULTY MEMBER NAME

\_\_\_\_\_  
FACULTY MEMBER SIGNATURE

\_\_\_\_\_  
FACULTY MEMBER NAME

\_\_\_\_\_  
FACULTY MEMBER SIGNATURE

COMMENTS (attach additional pages if necessary):

\_\_\_\_\_  
STUDENT SIGNATURE

\_\_\_\_\_  
MAJOR PROFESSOR SIGNATURE

# Student Progress & Evaluation form

## ANNUAL STUDENT PROGRESS REPORT *Environmental Sciences Graduate Program*

NAME OF STUDENT: \_\_\_\_\_ DATE PREPARED: \_\_\_\_\_

PROGRAM: M.S.  Ph.D.  DATE ENTERED PROGRAM: \_\_\_\_\_

QUALIFYING EXAMS (date, result): WRITTEN \_\_\_\_\_ ORAL \_\_\_\_\_

THESIS/DISSERTATION TITLE: \_\_\_\_\_

EXPECTED COMPLETION DATE: \_\_\_\_\_

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### ACADEMIC PROGRESS

(Comment on course work, deficiencies, research, etc. Attach additional pages if necessary.)

**COURSE WORK** (Please comment if student has completed required courses and any course work to be taken):

Have deficiencies been satisfied? Yes  No  If no please state the deficiencies that need to be met:

**RESEARCH:** (Please describe the student's research accomplishments this year and indicate goals for next year):

**ACCOMPLISHMENTS:** (Please indicate any special accomplishments, meetings attended, awards, etc. received by the student this year):

**SUGGESTIONS/COMMENTS:**

\_\_\_\_\_  
STUDENT SIGNATURE

\_\_\_\_\_  
MAJOR PROFESSOR/CHAIRPERSON

\_\_\_\_\_  
GRADUATE ADVISER

## Sample schedule for a Ph.D student

Fall	Student reviews information about the ESGP and contacts potential Major Professors to discuss opportunities.
January	Student submits completed application to Graduate Division.
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.
May-Aug	Student is in periodic contact with UCR, the ESGP, and the Major Professor to coordinate matriculation. Student registers for classes.
September	Orientation; classes begin.
Sep-Jun	<b>First year of study:</b> 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.
March	Student submits a Course Plan to the ESGP Program Committee.
Jun-Sep	Student works full-time on research and nominates an Advisory Committee to the ESGP Program Committee.
September	Student presents at the ESGP Student Symposium.
Sep- Jun	<b>Second year of study:</b> Student completes remaining required courses while allocating more time to research, particularly development of the dissertation proposal. Student nominates the Qualifying Exam Committee and submits a grant with the Major Professor.
Jun-Sep	Student prepares for and passes the written and oral qualifying exams, nominates the Dissertation Committee, and advances to Candidacy.
September	Student presents at the ESGP Student Symposium.
Sep-Jun	<b>Third year of study:</b> Student works full-time on research, conferring regularly with the Dissertation Committee. If no TA experience to-date, student arranges for a teaching practicum.
Jun-Jun	<b>Fourth year of study:</b> 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.
Jun-Jun	<b>Fifth year of study:</b> Student works full-time on research, conferring regularly with the Dissertation Committee. Student presents a practice job talk at the ESGP Student Symposium. 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.