



**UC DAVIS**

**CIVIL AND ENVIRONMENTAL  
ENGINEERING**

# **Guidance Manual For Graduate Students and their Advisors**

Effective Fall 2019\*

This manual presents the policies and procedures of the departmentally based graduate program in Civil and Environmental Engineering that pertain to graduate students and their advisors. The requirements and rules presented are in addition to those of the Graduate Council, the Office of Graduate Studies and the College of Engineering. Students and advisors are expected to be aware of additional policies, requirements and deadlines described in the UC Davis General Catalog and the Schedule of Classes. This manual reflects the graduate degree requirements as approved by the Graduate Council on May 20, 2016.

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## **I. ADVISING SYSTEM**

### **Graduate Coordinator (Graduate Staff Advisor)**

The Graduate Coordinator is the first point of contact in the CEE department for all administrative issues pertaining to the graduate program. The Graduate Coordinator handles the administration of all required forms and petitions, graduate student questions and referrals, and monitors desk space assignments for all graduate students. All forms and petitions that require a signature from the Graduate Adviser must first be submitted to the Graduate Coordinator, who will obtain the signature and submit the forms to the appropriate office(s).

### **Graduate Adviser**

The Graduate Adviser serves as the department's representative to the Office of Graduate Studies and the College of Engineering. The Graduate Adviser is a resource for all graduate students in the department to provide information and advising on academic requirements, policies and procedures. The Graduate Adviser's signature is required on most forms related to graduate affairs such as petitions for exception, change of major requests, PELP requests, Programs of Study and Advancement to Candidacies. The Graduate Adviser also chairs the Departmental Graduate Program Committee (GPC), and reports on graduate matters to the faculty.

### **Student's Major Professor (Faculty Adviser)**

All students must have a Major Professor. New students should establish who will serve as their Major Professor (Faculty Adviser) before completing their first quarter, or in the second quarter at latest. Students should discuss with a potential major faculty member their willingness to serve as the Major Professor for the indicated degree objective and must obtain the faculty members consent to serve as their Major Professor. The Major Professor relationship is established by mutual agreement. While students should feel free to discuss academic matters with any faculty member, typically the Major Professor will oversee most of the student's research and progress during their degree program. Students may change major professors at any time as their research and educational interests change and develop. Students working on research jointly with more than one professor also may have two co-advisors. The Major Professor submits the annual "Graduate Student Annual Progress Report" via the online SPA system to the Office of Graduate Studies. New students are temporarily assigned to the Graduate Program Committee member for their group, also referred to as the Area Advisor, who can assist in formulation and approval of a coherent course of study.

### **Graduate Program Committee (GPC)**

This committee is composed of the Chairperson of the GPC, the CEE Department Chair, a member from each of the five research groups within CEE: Environmental, Water Resources, Geotechnical, Structural, and Transportation Engineering; and an ex officio member of the GSAC (Graduate Student Advisory Committee). The committee's responsibilities are outlined in detail in the bylaws of the CEE Graduate Program (Appendix A) and summarized here. The GPC administers the Graduate Program, acts

on issues regarding graduate admissions and degree requirements, recommends TA assignments, advises on fellowship support for graduate students, and reviews and approves Programs of Study for doctoral students. Additionally, the five members of GPC from each of the research groups within CEE serve as temporary Area Advisers to new graduate students until the selection of a Major Professor. Current membership for the GPC can be found on the "Current Graduate Students" website.

### **College of Engineering Graduate Study Committee (GSC)**

The Graduate Study Committee is composed of the individual Graduate Advisers or their designees from each Graduate Program in the College of Engineering. The function of this Committee is to coordinate and communicate matters of common interest to all graduate programs in the College of Engineering. Within the policies and procedures of Graduate Council, the GSC committee reviews cross-department graduate curricula issues, awards graduate fellowships and scholarships administered by the College, disseminates information pertaining to engineering graduate studies, and addresses issues related to graduate student welfare in the College.

### **Mentoring Guidelines**

*(Adopted from UC Davis Graduate Council)*

Graduate Council recognizes that the mentoring of graduate students by faculty is an integral part of the graduate experience. Faculty mentoring is broader than advising a student as to the program of study to fulfill coursework requirements and is distinct from formal instruction in a given discipline. Mentoring encompasses more than serving as a role model. Because of the uncertainty as to the nature of mentoring, the UC-Davis Graduate Council has outlined the following mentoring roles to guide the relationship between faculty and graduate students. Faculty and graduate students must realize that, while the Major Professor will be the primary mentor during a student's career at UCD, many of the mentoring "functions" defined below may be performed by program faculty other than the Major Professor. An important corollary to this recognition is that faculty members must realize that much of their interaction with all students has an important mentoring component. Graduate students also have responsibilities to insure successful mentoring and these are also indicated below.

*Faculty have a responsibility to mentor graduate students. Mentoring has been defined as....*

- A. Guiding students through degree requirements. This means:
  - 1. Providing a clear map of program requirements from the beginning; making clear the nature of the coursework requirements and qualifying exam; and defining a timeline for their completion.
  - 2. Providing clear guidelines for starting and finishing dissertation or thesis work, including encouraging the timely initiation of the dissertation or thesis research.
- B. Guiding students through thesis or dissertation research. This means:
  - 1. Evaluating clearly the strengths and weaknesses of the student's research.
  - 2. Encouraging an open exchange of ideas, including pursuit of the student's ideas.

3. Checking regularly on progress.
4. Critiquing written work.
5. Providing and discussing clear criteria for authorship of collaborative research.
6. Assisting in finding sources to support dissertation research, such as, teaching assistantships, research assistantships, fellowships, etc.
7. Being aware of student's research needs and providing assistance in obtaining required resources. For example, serve as the student's advocate for necessary desk and/or laboratory space.

C. Guiding students through professional development. This means:

1. Providing guidance and serving as a role model for upholding the highest ethical standards.
2. Treating students respectfully.
3. Encouraging and critiquing oral and written presentations.
4. Encouraging participation in professional meetings and conferences.
5. Facilitating interactions with other scholars, on campus and in the wider professional community.
6. Assisting with applications for research funding, fellowship applications, and other applications as appropriate for the respective discipline.
7. Being the student's advocate in academic and professional communities.
8. Providing career guidance, specifically assistance in preparation of CV and job interviews, and writing letters of recommendation in a timely manner.
9. Recognizing and giving value to the idea that there are a variety of career options available to the student in her/his/your field of interest and accepting that the student's choice of career options is worthy of your support.

*As partners in the mentoring relationship, graduate students have responsibilities.*

*As mentees, students should:*

1. Be aware of their own mentoring needs and how they change through their graduate tenure. Graduate students should discuss mentoring needs with their mentors.
2. Recognize that one faculty member may not be able to satisfy all of a student's mentoring needs. Seek assistance from multiple individuals/organizations to fulfill the mentoring roles described above.
3. Recognize that their mentoring needs must respect their mentor's other responsibilities and time commitments.
4. Maintain and seek regular communication with their mentors, especially their Major Professor.

## **II. STUDENT RESPONSIBILITIES**

Students are responsible for meeting all Graduate Program, Departmental, College, and Graduate Studies requirements set forth in this manual, the Degree Requirements, the

General Catalog and Class Schedule and Directory. Selected requirements are summarized below.

### **Required Core Courses**

Courses core to the CEE Graduate Program are specific to one of the five areas of specialization within Civil and Environmental Engineering: Environmental, Geotechnical, Structural, Transportation, and Water Resources. Students must complete the core courses in their respective area of specialization as part of their program of study in the CEE Graduate Program. The courses may be taken on the UCD campus, or their equivalent from another accredited academic institution.

### **Environmental Engineering (8-10 units)**

- a) Core Courses (8 units): Students must choose either a “Water track” or an “Air track”
  - Students pursuing the Water track must complete ECI 243A (4 units) and ECI 243B (4 units) - Water and Waste Treatment
  - Students pursuing the Air track must complete ECI 242 Air Quality (4 units) and ECI 247 Aerosols (4 units)
- b) Elective Courses: In addition to the above required core courses for the Water or Air track, students in the Environmental Engineering track are encouraged to complete as an elective two quarters of Environmental and Water Resources Engineering Seminar: ECI 296 (1 unit each quarter; 2 units), although these units will not count towards the required 36 units total.

### **Geotechnical Engineering (11-12 units)**

- a) Core Courses (12-13 units); Students pursuing the Geotechnical Engineering track must complete the following core course:
  - ECI 281A – Advanced Soil Mechanics (4 units)and an additional two core courses from the following list:
  - ECI 259 - Asphalt and Asphalt Mixes (4 units)
  - ECI 280A - Nonlinear Finite Elements for Elastic-Plastic Problems (4 units)
  - ECI 280B - Nonlinear Dynamic Finite Elements (5 units)
  - ECI 281B - Advanced Soil Mechanics (4 units)
  - ECI 282 - Pavement Design and Rehabilitation (4 units)
  - ECI 283 - Physico-Chemical Aspects of Soil Behavior (4 units)
  - ECI 284 - Theoretical Geomechanics (4 units)
  - ECI 286 - Advanced Foundation Design (4 units)
  - ECI 287 -Geotechnical Earthquake Engineering (4 units)
  - ECI 288 - Earth and Rockfill Dams (4 units)
- b) Elective Courses: Students interested in geotechnical engineering practice are encouraged to take ECI 281B - Advanced Soil Mechanics (4 units)

### **Structural Engineering and Structural Mechanics (12-16 units)**

- a) Core Courses (12-16 units): Students pursuing the Structural Engineering or Structural Mechanics track are encouraged to complete all four, but must complete a minimum of three of the following core courses:
- ECI 201 - Introduction to Theory of Elasticity (4 units)
  - ECI 211 - Advanced Matrix Structural Analysis (4 units)
  - ECI 212A - The Finite Element Method in Structural Mechanics (4 units)
  - ECI 213 - Analysis of Structures Subjected to Dynamic Loads (4 units)

### **Transportation Engineering (17-18 units)**

- a) Core Courses (17-18 units): Students pursuing the Transportation Engineering track must complete the following core courses:
- ECI 251 – Transportation Demand Analysis (4 units)
  - ECI 256 – Urban Traffic Management and Control (4 units)
  - An economics course such as ECN 100, ECN 145, ECI 268, ARE 275, ARE/ESP 175, ARE 176, or a course similar in spirit as approved by the Transportation Engineering Area Advisor (econometrics courses are normally not considered similar in spirit: they are statistics-oriented, and can have relatively little economics content per se). (3-4 units)
  - TTP 281 – ITS weekly seminar series: must be taken each quarter for at least the first two years (or until graduation). Can be waived due to a conflict with another course, after confirmation with the Transportation Engineering Area Advisor. Note: this course does not count towards the 36 unit requirement (1 unit each quarter; 6 units)

### **Water Resources Engineering (8 units)**

- a) Core Courses (8 units): Students pursuing the Water Resources Engineering track must complete two core courses from the following list:
- ECI 240 - Water Quality (4 units)
  - ECI 260 – Sediment Transport (4 units)
  - ECI 264A – Transport, Mixing and Water Quality in River and Lakes (4 units)
  - ECI 272A - Advanced Hydrogeology (4 units)
  - ECI 272N – Transport through Porous Media (4 units)
  - ECI 273 - Water Resource Systems (4 units)
  - ECI 276 - Watershed Hydrology (4 units)
  - ECI 277A - Computational River Mechanics (4 units)
  - ECI 278 – Hydrodynamics (3 units)
  - ECI 279 - Advanced Mechanics of Fluids (4 units)
  - ECI 289 – Turbulence (4 units) Note: This is a temporary course number and will change after approval of this as a regularly offered course.

### **Special Requirements**

- a) Students are required to acquire or demonstrate proficiency in public speaking



and technical presentation. Students satisfy this requirement by completing an approved ECI course, by participating and presenting in an appropriate seminar series (e.g. ECI 296), or by giving an oral presentation at a conference and receiving feedback from their Major Professor, or an equivalent approved by the Major Professor and Graduate Advisor. The Graduate Staff Advisor will maintain a list of approved courses.

- b) ECI 390 (Teaching Assistant Training) is required for Teaching Assistants in the Department of Civil and Environmental Engineering, but does not count toward degree requirements.

### **Required Background Courses for Students Without an Engineering Degree**

Students without a BS in Engineering who are admitted to the CEE graduate program are required to complete the following courses or equivalents. The engineering nature of prior degrees or individual courses may be certified by the Graduate Advisor, with appeal to the Graduate Program Committee based on the course content of prior degrees.

Select four courses from the following six categories:

- ECI 100 or ENG 103 Fluid Mechanics 4 units
- ENG 104 Mechanics of Materials 4 units
- ECI 140B or ENG 105\* Thermodynamics 4 units  
(\* or Chem 110C or Chem 107A or Chem 107B)
- ECI 141 Engineering Hydraulics 3 units
- ECI 115 Computer Methods 4 units
- ECI 114 Probabilistic Systems Analysis 4 units

Including at least two of the following three classes:

- ECI 100 or ENG 103
- ENG 104
- ECI 140B or ENG 105

In addition to the above courses, students must complete upper division engineering course units (typically 2-3 courses) approved by the students Major Professor or Graduate Adviser.

In consultation with their Major Professor, students must submit a completed "Prerequisite Completion" form with a list of the courses that they are taking to satisfy the above requirements including a brief written explanation of any equivalent courses. Some or all of these course requirements may be satisfied by equivalent courses taken in other departments or at other universities. Equivalent status of courses is determined on a case-by-case basis by the Graduate Adviser, in consultation with the student's Major Professor and the Chairperson, upon a written request by the student. If a student would like to count a course taken at another institution to fill one or more of these requirements, they must provide to their Major Professor and the Graduate Adviser a syllabus of the course taken, and evidence that they received a satisfactory grade in the course. None of the courses taken to fulfill the above requirements may be used for credit toward an advanced degree in Engineering, and all must be taken for a letter grade.

To enroll in an upper division undergraduate course at UC Davis, students will likely need to complete the Prerequisite Petition (during the registration process). Using this online petition, students will state they are a graduate student needing to take an upper division course in preparation for their graduate studies, and include a thorough description of how they have fulfilled the listed prerequisites for the course they wish to enroll in.

### **Summary of Master's Degree Requirements**

#### **Degree Requirements**

##### **Course work**

	Plan I MS (Thesis)	Plan II MS (with Written Exam)	Plan II MS (with Individual Capstone Project)	Plan II MS (with Capstone Project Course)
Minimum number of graded graduate <u>engineering</u> course units (exclusive of 290C and 299)	23	31	27	27
Minimum number of graded graduate and undergraduate* course units (exclusive of 290C and 299 and courses listed below)	27**	35**	31*	31*
Capstone Course				4***
ECI 299 and ECI 290C (Independent study or research) One unit of ECI 290C must be included each quarter when 299 units are taken.	8 required	None required	4 required	None required
<b>TOTAL MINIMUM UNITS REQUIRED</b>	36	36	36	36

\* Students may count only one upper division undergraduate course. Exceptions to this policy will be permitted by the approval of the student's Major Professor. No lower-division courses or courses that are considered core undergraduate courses may be used to fulfill any aspect of the graduate degree course work requirement, nor can any courses used to satisfy the program prerequisites. These courses are currently: ENG 102, 103, 104, 105; and ECI 100, 132, 135, 141, 171, 171L, and 190. Finally, HYD 144 may not be taken for credit if ECI 144 is offered in the same calendar year. This list is subject to change without warning as undergraduate curriculum changes occur.

\*\* No course taken in satisfaction of a student's undergraduate degree may be used or retaken to fulfill any aspect of the graduate degree course work requirement. Up to two graduate-level courses taken at other institutions and/or while in undergraduate standing may be transferred for use towards the graduate degree requirements, subject to the *Residence and Transfer Credit Policy* (GC2011-03).

\*\*\* Students who are satisfying the Plan II project requirement via the capstone course may not use this towards the 31 unit minimum. If used for the Plan II capstone project, this must be taken near the end of the MS degree, typically after advancement to candidacy.

### **Thesis/Report/Exam**

In conjunction with your Major Professor, select a three-person thesis or comprehensive examination committee as soon as practical (See Part III for Committee Membership and Responsibilities).

**Master of Science (M.S.), Plan I (Thesis):** A minimum of 36 units of coursework and a thesis are required. At least 27 units of coursework must be taken for a letter grade. Of the 27 units of coursework, 23 units must be graduate courses (200 level) in engineering and the remaining 4 units must be earned in upper division or graduate level courses (100 level or above), exclusive of seminar and research units. The remainder of the 36 unit requirement consists a minimum of 8 units of thesis research (ECI 299, 290C) units and/or additional coursework. Only courses in which a 'C' or higher or 'Satisfactory' (in courses with no letter-grading option) are earned may be counted toward satisfaction of degree requirements. Please see the section on Standards of Scholarship for additional information. A thesis must be approved and signed by a three-person committee and submitted to the Office of Graduate Studies.

Although coursework for the Master of Science degree can be completed in three quarters of full-time study, at least one calendar year to six quarters of full-time study is usually required to complete the M.S. Plan I.

**Thesis committee meetings:** The candidate and Major Professor should meet at least once a year with the other members of the thesis committee to discuss progress and any changes in research objectives. The candidate is encouraged to meet more frequently with their thesis committee, as often as is appropriate to keep the committee appraised of progress and receive interim feedback.

**Thesis:** Research for the Master's thesis is to be carried out under the supervision of a faculty member of the program and must represent an original contribution to knowledge in the field. The thesis research must be conducted while the student is enrolled in the program. The thesis is submitted to the thesis committee at least one month before the student plans to make requested revisions. All committee members must approve the thesis and sign the title page before the thesis is submitted to Graduate Studies for final approval. Should the committee determine that the thesis is unacceptable, even with substantial revisions, the program may recommend the student for disqualification from the program to the Dean of Graduate Studies.

The thesis must be filed in a quarter in which the student is registered or on filing fee status. Instructions on preparation of the thesis and a schedule of dates for filing the thesis in final form are on the Graduate Studies Calendar. A student must have a cumulative GPA of at least 3.0 for the M.S. degree to be awarded.

**Master of Science (M.S.), Plan II (Report / Exam):** A minimum of 36 units of coursework and a project or comprehensive exam are required. For the **MS Plan II with Written Exam:** At least 35 units of coursework must be taken for a letter grade. Of these 35 units of coursework, 31 units must be graduate courses (200 level) in engineering and the

remaining 4 units must be earned in upper division or graduate level courses (100 level or above), exclusive of seminar and research units. The remainder of the 36-unit requirement consists of other relevant coursework or directed research (ECI 299, 290C) if needed. For the **MS Plan II with an Individual Capstone Project**: At least 31 units of coursework must be taken for a letter grade. Of these 31 units of coursework, 27 units must be graduate courses (200 level) in engineering and the remaining 4 units must be earned in upper division or graduate level courses (100 level or above), exclusive of seminar and research units. The remainder of the 36-unit requirement consists of a minimum of 4 units of directed research (ECI 299, 290C). For the **MS Plan II with the Capstone Project Course**: At least 31 units of coursework must be taken for a letter grade. Of these 31 units of coursework, 27 units must be graduate courses (200 level) in engineering and the remaining 4 units must be earned in upper division or graduate level courses (100 level or above), exclusive of seminar and research units. The remainder of the 36-unit requirement consists of the 4 unit Capstone Course, and other relevant coursework or directed research (ECI 299, 290C) if needed. Only courses in which a 'C' or higher or 'Satisfactory' (in courses with no letter-grading option) are earned may be counted toward satisfaction of degree requirements. Please see the section on Standards of Scholarship for additional information.

Fulfillment of the Comprehensive Examination is the last requirement of the M.S. Plan II. A student may take the comprehensive examination once they have advanced to candidacy. Students typically complete the comprehensive examination during the final quarter of graduate study, after advancement to candidacy. There are three, Area-specific pathways by which a student may complete the comprehensive examination requirement.

1. **Timed, written exam**: Students may complete the comprehensive exam requirement by passing a timed, written exam that is taken near the end of their last quarter of study. This is the default pathway for students completing the Structural Engineering track. The written exam will be offered at least twice a year (dates will be announced at the start of each academic year). Students will have 2 hours to complete the exam and may bring only two sheets (8.5 x 11 inch letter size) of written notes with them. The exam shall consist of questions that form the theoretical background material in the relevant core courses. During Fall Orientation, the Area Advisor will provide students with a prospectus containing information on the specific content and format of the exam, including up to two sample exams.

The exam will be graded by the Comprehensive Exam Committee; students must receive a unanimous decision of "pass." If a student does not pass in their first attempt, they may retake the exam twice. Typically, they will retake the exam the following quarter; if a student does not pass the exam in the spring quarter, an option to re-take the exam in the summer may be provided, or they may have to wait until fall for another retake opportunity. Upon completion of any attempt at passing the Comprehensive Examination, the Chair of the Committee must notify the Graduate Coordinator, indicating the following:

- a) When the student took the exam,
- b) The recommendation to pass or not pass.
- c) The expected retake date, in cases of a not pass.

If a student, upon taking the exam for a third time, receives a “not pass”, the student will be recommended to the Dean of Graduate Studies for disqualification from further graduate work in the program.

2. **Capstone Project Course:** Students may complete their capstone project by taking an approved ECI 2XX course in their final quarter. The list of approved courses will be maintained by the Graduate Staff Advisor. This is the default pathway for students completing the Environmental, Transportation, or Water Resources tracks. The capstone projects in a project course will be carried out individually. They will be of similar scope and quality as the Individual Capstone Projects, with the specific topic and content determined in coordination with the ECI 2XX instructor or after consultation with another CEE faculty member. Typical capstone projects completed through the project course will include both a written report and oral presentation component. The instructor of record for the course must be a CEE Graduate Program member, and will provide primary review of the capstone projects and make an initial assessment of the quality of the projects. A second faculty member from the relevant Area will serve as a secondary reviewer for the capstone projects. The capstone course instructor and secondary reviewer will determine whether a students’ performance on both the oral and written reports constitute a pass; both must agree for a student to pass. Satisfactory completion of the capstone project will be indicated by the student receiving either an “S” grade (when the capstone course is graded S/U) or a B or higher (when the capstone course is letter graded). In cases where a student receives a not pass, they may revise their report one time based on feedback received from the instructor and secondary reviewer; the revised report must be turned by the end of the summer following the capstone course, except in exceptional circumstances.

If a pass is indicated by the students’ grade in the capstone course, the Master’s Report Form is signed by the Program Graduate Advisor and then forwarded to the Office of Graduate Studies. The deadlines for completing this requirement are available from Graduate Studies; the dates are also printed in the Class Schedule and Registration Guide issued each quarter. A candidate must be a registered student or in filing fee status at the time the program submits the form, with the exception of the summer period between the end of the Spring Quarter and the beginning of Fall Quarter. The program must file the report with Graduate Studies within one week of the end of the quarter in which the student’s degree will be conferred.

If a not pass is indicated, the student may be recommended to the Dean of Graduate Studies for disqualification from further graduate work in the program.

3. **Individual Capstone Project Report:** The written capstone project report, written

by the student, is generally expected to have the scope and quality of a refereed journal paper, without the need to be a novel contribution of knowledge to the field. The student must have the report read by their Comprehensive Examination Committee; the report constitutes the written portion of the examination and approval by the Comprehensive Examination Committee constitutes a pass on this portion of the exam. The written capstone project report is typically developed with feedback/guidance from the Chair of the Comprehensive Exam Committee, typically the Major Professor; if the written capstone project report is not approved by the entire Comprehensive Examination Committee upon the first submission to the entire Committee, the student may resubmit a revised report once to the entire committee. In addition to the written capstone project report, an oral presentation and/or exam may be required at the discretion of the Chair of the Comprehensive Examination Committee. The format of the presentation and/or oral exam is established by the Chair of the Comprehensive Examination Committee; typically the members of the Comprehensive Examination Committee meet with the student for a minimum of one hour and ask questions related to the report and/or to any courses the student completed to fulfill the M.S. Degree Course Requirements; the Comprehensive Examination Committee decides whether the students' performance on the oral presentation/exam constitutes a pass. If the student does not pass the oral presentation/exam, the committee may recommend that the student be reexamined one time.

Upon completion of the Comprehensive Examination, the Chair of the Committee must notify the Graduate Coordinator, indicating the following:

- a) When the student took the exam,
- b) The members on the committee, and
- c) The recommendation to pass or not pass.

If a pass is indicated, the Master's Report Form is signed by the Program Graduate Advisor and then forwarded to the Office of Graduate Studies. The deadlines for completing this requirement are available from Graduate Studies; the dates are also printed in the Class Schedule and Registration Guide issued each quarter. A candidate must be a registered student or in filing fee status at the time the program submits the form, with the exception of the summer period between the end of the Spring Quarter and the beginning of Fall Quarter. The program must file the report with Graduate Studies within one week of the end of the quarter in which the student's degree will be conferred.

If a not pass is indicated, the student may be recommended to the Dean of Graduate Studies for disqualification from further graduate work in the program.

### **Standards of Scholarship**

For courses to count toward satisfaction of degree or credential requirements, the student must earn an "A", "B", "C" or "satisfactory". Upper division or graduate level courses completed with a C- grade or lower do not count towards the student's unit

requirement for the master's degree, but do count in computing the GPA. Please note that a "satisfactory" is only accepted for courses with no letter-grading option. Students must maintain a minimum UCD cumulative and quarterly grade point average of 3.0 in all upper division (100 series) and graduate courses (200 series). Lower division courses are excluded in calculating the graduate GPA. They also do not count toward graduate program degree requirements.

## Required Forms to File

- a. **"Program of Study"** – First year students must file this form by the end of their second quarter after obtaining the signature of their Major Professor.
- b. **"Prerequisite Completion"** – Only required for students who are completing the "background courses", and must be completed by the end of the first year.
- c. **"Student Progress Assessment"** - This is an online form, and is initiated each year in early April, and is due in mid-June. Normally, this form is started by the student, and then completed during a meeting with your Major Professor. Students graduating in spring of that year may request to opt out of the SPA.
- d. **"Application for Candidacy"** - Submit applicable form to the Graduate Coordinator at the beginning of the quarter in which you intend to graduate, or the quarter in which you plan to complete your academic courses. . The student must obtain the Thesis Chair signature (if applicable), and pay the fee in person at the cashiers office prior to submitting to the Graduate Coordinator. The Graduate Coordinator will obtain the signatures required of the Graduate Adviser and Graduate Coordinator. This form may be obtained from the Graduate Coordinator and is also available online on the Graduate Studies forms page. To advance to candidacy, students must be in good standing and have a cumulative UCD GPA of at least 3.0 in all upper division and graduate courses.
- e. **"Master's Report Form, Plan II" (Plan II Students only)** – All Plan II students must file this form in their final quarter, approving that the student has completed their report/exam and all requirements for the master's degree. The Committee Chair must sign off on the form, note the date, and write "passed." The student must have advanced to candidacy. Return the form to the Graduate Coordinator. The graduate coordinator will obtain the signature of the Graduate Adviser. This form may be obtained from the Graduate Coordinator and is also available online at the CEE current student page.

## Master of Science Degree Program Timeline

The expectation is that full-time students in the masters program will broadly adhere to the following timeline:

Action Item	Quarter	
	M.S. Plan I	M.S. Plan II

Select a Major Professor*	1	1
Select a M.S. Thesis Committee	2	n/a
Select a second M.S. Capstone Project reader (for students completing Independent Capstone Projects only)	1	2
Complete Program Checklist	2	2
Complete Application for Candidacy	3-5	3
Complete Graduate Annual Progress Report	3, 6	3
Complete coursework	3-4	3
Complete M.S. Capstone Course or timed Comprehensive Exam**		3
Complete thesis or independent capstone report***	4-6	3-4

\* Students completing the Independent Capstone Project. Students completing the timed Comprehensive Exam or Capstone Project Course may have the Area Advisor as their Major Professor.

\*\*For students fulfilling the Capstone Course or timed Comprehensive Exam requirement

\*\*\*For students fulfilling the independent capstone report or the MS Plan I Thesis

NOTE: The timeline for students entering the CEE graduate program without a BS in engineering and who must complete prerequisite courses will likely be extended by 1-2 quarters, depending on the extent to which their previous coursework fulfills the prerequisite requirements.

### **Summary of Doctoral Degree Requirements**

“The Doctor of Philosophy degree is not granted by the University of California merely for the fulfillment of technical requirements, such as residence or the completion of fundamental courses. The recipient of a Ph.D. degree is understood to possess thorough knowledge of a broad field of learning and to have given evidence of distinguished accomplishment in that field; the degree is a warrant of critical ability and powers of imaginative synthesis. The degree also signifies that the recipient has presented a doctoral dissertation containing an original contribution to knowledge in her or his chosen field of study.” (from UC Davis Graduate Advisors Handbook)

### **Program of Study Committee**

Consult with your Major Professor to identify a Program of Study Committee as soon as possible, but no later than the end of your first quarter of study (see Section III for Committee Membership Requirements). The doctoral Program of Study Committee, composed of three faculty members, serves as the Guidance Committee and have the responsibility to guide you in formulating your Program of Study. In consultation with this Committee, develop a Program of Study.



### **Program of Study for PhD**

The Program of Study form serves as the formal written plan of courses to be reviewed and approved by the GPC. The form is filed (at a minimum) twice, once as preliminary Program of Study, and subsequently as final Program of Study. The preliminary Program of Study (student must check the “preliminary” box on the form) lists the courses planned to be used to satisfy the curriculum requirement of the Ph.D. degree, and should be filed with the Graduate Coordinator before the end of the second quarter of entering the Ph.D. program. The preliminary Program of Study must be reviewed and approved by the GPC within the first three quarters of entering the Ph.D. program. Early submission will allow Ph.D. students to adjust their Programs before investing time and energy in courses that may not be approved by the GPC. If a student decides to make any changes to the preliminary Program of Study after it has been approved by the GPC, the student must submit a revised preliminary Program of Study for a second review by the GPC. Upon enrollment in the final required coursework, and in order to request Graduate Studies’ approval of the Qualifying Examination committee, the student files the final Program of Study, including grades, with the GPC (student must check the “final” box on the form) for review and approval. GPC approval of the final version is a requisite step toward assignment of the Qualifying Examination committee. Because this involves the GPC, the student is strongly encouraged to work closely with their Major Professor to determine the proper time for submission of the final version in order to schedule the Qualifying Examination as the student desires (note: the GPC does not meet over the summer; and the QE application must be submitted at least one month prior to the QE date after program of study approval).

The GPC has the right to reject Programs of Study that are inadequately developed. Students are recommended to consult with their Major Professor and their Program of Study Committee, and follow the guidelines (below) carefully, in developing their Program of Study.

The Program of Study must include a minimum of 46 units of graded coursework beyond the baccalaureate degree. The Program of Study committee may, and often will, require more than the minimum 46 units of graded coursework be included as necessary to ensure appropriate academic preparation; typical programs of study range from 46-60 units. Courses taken should generally be at the graduate level and should collectively develop both depth and breadth of knowledge. A minimum of 24 units must be taken at the UC Davis campus. No courses used to satisfy prerequisites may be used. Courses taken more than eight years prior to the Qualifying Examination may be counted toward satisfaction of the Program of Study as an exception to policy only after approval of the Program of Study Committee. Only courses in which a ‘C’ or higher or ‘Satisfactory’ (in courses with no letter-grading option) are earned may be counted toward satisfaction of the Program of Study. Please see the section on Standards of Scholarship for additional information. Courses taken more than eight years prior to the Qualifying Examination are normally not counted toward satisfaction of the Program of Study.

Acceptable Programs of Study must satisfy the following qualitative criteria:

- **Depth:** knowledge of theoretical and practical aspects of the field usually, but not always;
- **Breadth:** should expand foundational knowledge;
- **Coherence:** courses taken should be complementary and intentionally chosen. The requirement of coherence expressly precludes taking a large number of single courses in unrelated areas.

When submitting the preliminary and final Program of Study for GPC review and approval, the following supplemental information should be provided in writing:

- For any course outside of CEE, provide either a syllabus for the course or description of the topics covered in the course;
- For students including courses on the Program of Study from institutions that assign numeric grades, a description of the basis for converting the numeric grades into letter grades should be provided. Both the numeric and letter grade should be provided on the Program of Study form.
- For students including courses on the Program of Study from institutions that are not on a quarter system, a description of the basis for converting course units into quarterly units should be provided.

### **Ph.D. Qualifying Examination**

Students must complete the course requirements and have an approved final Program of Study before taking their Qualifying Examination (QE). Passing this exam makes the student eligible for advancement to candidacy. The QE should normally be taken by the 6<sup>th</sup> quarter for students who enter with a relevant M.S. and no later than the end of the 9<sup>th</sup> quarter after admission to the doctoral program. According to university policy graduate students cannot hold an academic title (e.g. GSR, TA) for more than nine quarters before passing their QE.

The purpose of the qualifying examination is to determine if the student has the ability and academic preparation necessary to successfully conduct independent research and complete a doctoral dissertation. Students are encouraged to meet individually with the members of their QE committee prior to the exam to discuss expectations. Students should consult with their Major Professor, Program of Study Committee, and Area Advisor when developing a list of suggested QE committee members. The format of the QE is specific to a students' area of specialization.

#### **Exam format for Environmental, Transportation, and Water Resources Engineering students**

The Qualifying Examination will consist of a written research prospectus and an oral examination, which includes a presentation by the student.

## **Written Portion of the Exam – Dissertation Prospectus**

The written portion of the exam consists of a research proposal called the Dissertation Prospectus. The Prospectus should be provided to members of the qualifying examination committee at least two weeks before the qualifying exam.

The Prospectus is an independently prepared proposal typically 10-15 pages in length describing the student's dissertation-specific research motivation, aims, hypotheses, progress to date, and research approach. The exact scope should be discussed with the QE committee chair. Concepts within the research proposal can be discussed with others (such as the student's Major Professor and peers), but the writing of the proposal should reflect the student's work as the proposal will serve as evidence of the student's proficiency in scientific writing.

The Prospectus will provide information that may be discussed during the oral exam.

## **Oral Portion of the Exam**

The oral portion of the QE is intended to be a broad examination of topics related to the student's proposed research area, academic preparation, and readiness to produce a Ph.D. dissertation. The oral portion of the qualifying exam will be 2-3 hours in length and is intended to demonstrate the student's critical and creative thinking abilities, ability to synthesize, and depth and breadth of knowledge of the field of study.

Students should prepare a presentation that builds on their Dissertation Prospectus, which they will present during the exam. The target presentation length should typically be 15-25 minutes, although the exact scope should be discussed with the QE Committee Chair.

The outcome of the exam will be based on:

- Relevant portions of the student's previous academic record as reflected in the student's Program of Study;
- Overall evaluation of the student's performance and potential for scholarly research as indicated during the oral examination and through the Dissertation Prospectus.

## **Exam format for Geotechnical and Structural Engineering students**

The Qualifying Examination will consist of an oral examination, which includes a presentation by the student.

## **Oral Portion of the Exam**

The QE is an oral examination that will be 2-3 hours in length and is intended to evaluate the student's command of the field, ensuring that the student has both breadth and depth of knowledge, and to assess the student's ability to conceptualize a research topic and successfully produce the dissertation required for a doctoral degree.

Students should prepare a presentation, which they will present during the exam. The format, focus, and scope of the presentation will be determined in consultation with the QE Committee chair. The exam questions are designed to evaluate the student's understanding of the fundamentals of the student's field of study, often related to academic coursework, and the ability to synthesize and communicate a solution to general or open-ended problems related to their primary field of research.

The outcome of the exam will be based on:

- Relevant portions of the student's previous academic record as reflected in the student's Program of Study;
- Overall evaluation of the student's performance and potential for scholarly research as indicated during the oral examination.

### **Outcome of the Exam**

The committee will reach a decision on the student's performance immediately after the oral exam. The committee, having reached a unanimous decision, shall inform the student of its decision to:

- "Pass" (no conditions may be appended to this decision),
- "Not Pass" (the QE Chair's report should specify whether the student is required to retake all or part of the examination, list any additional requirements, and state the exact timeline for completion of requirements to achieve a "Pass"), or
- "Fail".

Whether or not a unanimous decision is reached, the Chair shall submit the QE report to Graduate Studies within 72 hours. If a unanimous decision takes the form of "Not Pass" or "Fail", the Chair of the QE committee must include in their report a specific statement, agreed to by all members of the committee, explaining their decision. The Chair of the QE committee must inform the student of the committee's decision. Having received a "Not Pass" the student may attempt the QE one additional time; the QE report must list the specific conditions and timing for the second exam. After a second examination, a vote of "Not Pass" is unacceptable; only "Pass" or "Fail" is recognized. Only one retake of the qualifying examination is allowed. Should the student receive a "Fail" on the first or second attempt at the exam, the student will be recommended for disqualification from the program to the Dean of Graduate Studies.

### **Dissertation Exit Seminar**

The dissertation follows Plan B with a required exit seminar. Satisfaction of the Exit Seminar requirement must be verified by the Dissertation Committee Chair. The Exit Seminar is a formal public presentation of the student's research before the program faculty and students. It is recommended that this presentation take place during the final quarter of the program. Adequate scheduling of the exit seminar is the responsibility of the student and the Major Professor. The student will provide the Major Professor with the seminar title, date, time, and location of the seminar. An abstract of the seminar is

to be widely advertised, and circulated via all appropriate email lists, and must be submitted for inclusion on the CEE department online calendar. Announcement shall be made at least two weeks before the seminar.

### **Dissertation**

The research conducted by the student must be of such character as to show ability to pursue independent research. The dissertation reports a scholarly piece of work of publishable quality that solves a significant scientific problem in the field and is carried out under the supervision of a member of program while the student is enrolled in the program. The chair of the dissertation committee must be a member of the program and must be immediately involved with the planning and execution of the research work done to formulate the dissertation.

Students should meet regularly with their dissertation committee. The dissertation must be submitted to each member of the dissertation committee at least one month before the student expects to make requested revisions; committee members are expected to respond within 4 weeks, not including summer months for nine-month faculty. Informing committee members of progress as writing proceeds helps the members to plan to read the dissertation and provide feedback within this time frame. The dissertation must be approved and signed by the dissertation committee before it is submitted to Graduate Studies for final approval.

### **Standards of Scholarship**

For courses to count toward satisfaction of degree or credential requirements, the student must earn an "A", "B", "C" or "satisfactory". Upper division or graduate level courses completed with a C- grade or lower do not count towards fulfilling a student's Program of Study, but they do count in computing the GPA. Please note that a "satisfactory" is only accepted for courses with no letter-grading option. Students must maintain a minimum cumulative and quarterly grade point average of 3.0 in all upper division (100 series) and graduate courses (200 series). Additionally, a student must have a UCD cumulative graduate GPA of at least 3.25 to take the Qualifying Exam and advance to candidacy. Lower division courses are excluded in calculating the graduate GPA. They also do not count toward graduate fulfilling the Program of Study.

### **Overview Key Requirements for Ph.D.:**

- a. Students must maintain a minimum UCD cumulative and quarterly grade point average of 3.0 in all upper division (100 series) and graduate courses (200 series). Additionally, a student must have a UCD cumulative graduate GPA of at least 3.25 to take the Qualifying Exam and advance to candidacy.
- b. Satisfy residency requirement (minimum of 6 quarters of full-time enrollment)
- c. Approval of a Program of Study
- d. Pass qualifying examination (five-person committee)
- e. Approval of Ph.D. Dissertation (three-person committee). The doctoral dissertation must be an original and substantial contribution to knowledge in your

major field. In it, you must demonstrate the ability to carry out a program of advanced research and to report the results in accordance with standards observed in recognized scientific journals.

- f. Presentation of Exit Seminar (see section on Dissertation Committee - Plan B).

### **Summary of Required Forms to File**

Students are required to obtain all of the forms listed below and complete them with the guidance of their Major Professor. Forms can be obtained from the Department's Graduate Coordinator or electronically from the CEE website or Graduate Studies website. After completion they should be returned to the Graduate Coordinator for appropriate signature(s) and/or approval for processing:

a. **"Program of Study"** – The preliminary version of this form should be filed no later than the second quarter of study. The GPC will then review the Program of Study at their next meeting. The Program of Study and all revisions (if any) must be approved by the GPC before filing the *Application for Qualifying Examination*. Note: the GPC meets at least once per quarter during the academic year. A copy of the approved Program of Study is filed in the Department office.

b. **"Application for Qualifying Examination"** - This form is required to establish the membership of a Qualifying Examination committee and to set the date of the examination. The Graduate Adviser will confirm satisfactory execution of the Program of Study before this form is forwarded to the Office of Graduate Studies for approval. (Note: *If your UC Davis overall GPA is less than 3.25, you will not be admitted to a doctoral oral qualifying examination.*) The Graduate Studies office must receive this form one month in advance of the qualifying exam (see Part III for Committee Membership). The examination cannot take place until your final Program of Study has been completed and approved by GPC.

c. **"Application for Advancement to Candidacy"** - Following successful completion of the qualifying exam, the student will obtain a copy of this form and submit it to the Chair of the Dissertation Committee (the student's Major Professor) who will sign and return the form to the student. On this form the student, in consultation with his/her Major Professor suggests the membership of the Dissertation Committee (see section on Committee Membership). The student will pay the Candidacy fee and submit the form to the Graduate Coordinator, who confirms that the Program of Study and Qualifying Examination have been completed. The Graduate Coordinator will then submit form to the Graduate Advisor for review and approval. The Graduate Coordinator then sends the application on to Graduate Studies.

d. **"StudentProgress Assessment"** - This is an online form, and is initiated each year in early April, and is due in mid-June. Normally, this form is started by the student, and then completed during a meeting with your Major Professor. Students graduating in spring of that year may request to opt out of the SPA.

### **Transfer from Masters to Doctoral Program**

Students whose degree objective is M.S. Plan I or Plan II may petition to change their degree objective to Ph.D or add Ph.D. as an additional degree objective. The request for continuation into the Doctoral program is initiated by filing a "Petition for Change of Degree Objective" form and a departmental Additional Information form. These forms are available from the Graduate Coordinator, and on the Graduate Studies website and the CEE website. Students will need to have:

1. Graduate GPA > 3.25.
2. A plan to complete the QE in a timely manner
3. A Preliminary Program of Study, complete with three CEE Faculty signatures
4. Positive recommendation from the faculty member in the CEE department graduate program who will serve as your Faculty Adviser for your doctoral work.

This change in degree objective becomes effective immediately upon approval. As a Master's student, if you have any inclination to pursue Doctoral studies, speak to your Major Professor or the Graduate Adviser about preparing a Program of Study.

### **Doctoral Degree Program Timeline**

The expectation is that full-time students in the doctoral program will broadly adhere to the following timeline:

<b>Action Item</b>	<b>Quarter</b>
Select a Major Professor	1
Select Program of Study Committee	1
Submit Student Progress Assessment	3, 6, 9, 12, 15
Submit preliminary Program of Study	2
Establish Dissertation Committee	3
Submit final Program of Study*	5-7
Submit Application for Qualifying Exam*	6-8
Take initial Qualifying Exam*	6-8
Retake Qualifying Exam (if necessary)	9
Submit Application for Advancement to Candidacy*	6-8
File Dissertation <b>and</b> Present Exit Seminar	15

\*The timing will depend on whether the student entered already having an MS

### **Preparation of M.S. Plan I Thesis, M.S. Plan II Report, or Ph.D. dissertation**

Consult with the Graduate Studies website on the required format for M.S. Plan I thesis or Doctoral dissertation. Formatting of M.S. Plan II report is at the discretion of the Major Professor. The Department does not permit the use of staff time or equipment for the word processing or printing/photocopying of thesis, report, or dissertation, unless all costs

are covered through research grants or by the student. Computers and printers available in the CEE graduate student lab are for research- or course-related work. The thesis or dissertation must be uploaded electronically for the Office of Graduate Studies at least two days prior to the exit appointment. A copy of the M.S. Plan II report must be submitted their Major Professor and to the members of their comprehensive examination committee (student is not required to submit a copy to Graduate Studies).

### **III. COMMITTEE MEMBERSHIP AND RESPONSIBILITIES**

#### **Membership of Advanced Degree Committees**

The student, in consultation with the Major Professor and the Graduate Adviser, nominates faculty to serve on the advanced degree committees. The Major Professor serves as the Chair of the thesis/dissertation committee and must be a member of the CEE graduate program. The Graduate Adviser nominates the committee to the Office of Graduate Studies for formal appointment in accordance with Graduate Council policy.

Only members of the Academic Senate or the CEE Graduate Program have automatic eligibility to serve as members of advanced degree committees. Only members of the CEE Graduate Program have automatic eligibility to serve as Chairs of advanced degree committees. Members of the Academic Senate who are not members of the CEE Graduate Program can seek exception to serve as Chair of an advanced degree committee; information regarding the petition process can be obtained from the Graduate Coordinator. Individuals who are not members of the Academic Senate or the CEE Graduate Program can serve on advanced degree committees with written recommendation from the student and approval by the Graduate Adviser and Graduate Studies; petition forms can be obtained from the Graduate Coordinator. Nomination of an individual who is not a member of the Academic Senate or the CEE Graduate Program to serve as the chairperson of an advanced degree committee is approved by the GPC only in the most exceptional circumstances. The current membership of the CEE Graduate Program is listed in Appendix A.

#### **Responsibilities of Committees for Masters Students**

For M.S. Plan I students, a three-person thesis committee must approve and sign the thesis. For M.S. Plan II students, a two- to three-person committee administers the Comprehensive Examination. The three-person committee shall be composed of at least two members of the CEE Graduate Group; the third member can be either a member of the CEE Graduate Group or the Academic Senate. If the third member of the committee is not a member of the CEE Graduate Group or the Academic Senate, a request for an external committee membership (available from the Graduate Coordinator) must be completed and approved by the Graduate Advisor and Graduate Studies. If the student wishes to have two people outside the CEE Graduate Group on their committee, a four person committee can be established. Exceptions to committee membership laid out above will be reviewed and approved by the Graduate Program Committee and Graduate Studies on a case-by-case basis.



The M.S. Plan I Thesis Committee ensures that the quality of the thesis is appropriate for the degree. The thesis is more research oriented (though not necessarily an original contribution to knowledge) than the M.S. Plan II report.

### **Responsibilities of Committees for Doctoral Students**

Doctoral students need three committees: the Program of Study (or Guidance) Committee (three persons), the Qualifying Examination Committee (four persons), and the Dissertation Committee (three or more persons).

### **Program of Study Committee**

In consultation with the Major Professor, Ph.D. students are expected to select a Program of Study Committee. The committee should be composed of three faculty members from the CEE Graduate Group. The committee will assist the student in the following manner:

1. The Committee reviews the student's Master's degree work and subsequent performance in course-work during the first quarter after completion of the Master's degree. (If the student has obtained the Master's degree at some other institution, the review should be conducted during the first quarter of residence at Davis.) The Committee may solicit comments from other faculty members.
2. The Committee guides the student in the preparation of a Program of Study (See Section II).
3. The Committee advises the student on selection of members of the Qualifying Examination Committee.

### **Ph.D. Qualifying Examination Committee**

The student, in consultation with the Major Professor and the Graduate Advisor, nominates four individuals to serve on the Qualifying Examination Committee. An optional fifth member may serve on the QE Committee. The committee shall be constituted subject to the following constraints:

- The Chair of a student's Dissertation Committee cannot be the Chair of the student's Qualifying Examination Committee.
- At least three members of the Qualifying Examination Committee must be members of the CEE Graduate Program.
- At least one person on each Qualifying Examination Committee shall not be a member of the CEE Graduate Program.

Upon completion of the Qualifying Examination, the committee chair indicates the results on the "Report on Qualifying Examination for Admission to Candidacy for the Degree Doctor of Philosophy" form within 72 hours of the exam, and returns it to the Graduate Coordinator, who then sends it to Graduate Studies. Upon successful completion of the

Qualifying Examination, the student receives an "Application for Candidacy for the Degree of Doctor of Philosophy."

### **Dissertation Committee - Plan B**

The Dissertation Committee is a three-member committee nominated by the student, in consultation with the Major Professor and the Graduate Advisor, and approved by the Dean of Graduate Studies. The role of the Dissertation Committee is to advise the doctoral student on the research topic and methods, provide guidance to the student in formulating and carrying out a doctoral research project and then to review the final completed dissertation for acceptance. The Major Professor usually serves as the Dissertation Committee Chairperson and should ascertain the level of interest from the other committee members regarding their direct participation in the research.

The Dissertation Committee shall be composed of at least two members of the CEE Graduate Program; the third member can be either a member of the CEE Graduate Program or the Academic Senate. If the third member of the Committee is not a member of the CEE Graduate Program or the Academic Senate, a request for an external committee membership must be completed and approved by the Graduate Advisor. If the student wishes to have two people outside the CEE Graduate Group on their Committee, a four person committee may be established. Exceptions to Committee membership laid out above will be reviewed and approved by the Graduate Advisor on a case-by-case basis. The composition of the Dissertation Committee is entered on the Advancement to Candidacy Form.

Students are expected to meet with the Chair of their Dissertation Committee regularly, at least quarterly if not more frequently. The student and Chair should endeavor to meet with the entire committee annually. A dissertation must be reviewed and approved (via signatures) by all members of this committee. Dissertation Committee members are expected to read and comment on a dissertation within four weeks from its submission. This time limit policy does not apply to summer periods for faculty holding nine-month appointments. The student and faculty will coordinate a timeline for the student to present the thesis to the dissertation committee. This timeline must allow all dissertation committee members enough time to fulfill their responsibilities within the four-week deadline.

## **IV. FUNDING, FEE, AND TUITION POLICIES**

### **Establishing California Residency**

Domestic nonresident students must establish evidence of intent to become a California resident as soon as possible through the Office of the Registrar. No US citizen or Permanent Resident will receive a Nonresident Tuition Fellowship beyond the first three quarters of graduate study. <http://registrar.ucdavis.edu/html/slr.html>.

### **Fellowships and Nonresident Tuition Fellowships**

Students are encouraged and responsible to take the initiative to investigate and apply for fellowships for which they are eligible. Many University Fellowships (highly competitive) are available for graduate study and all applications are due each year by January 15 unless otherwise indicated. There are awards for new students (the application process is part of the application to the University), and for continuing graduate students. All students who are eligible to complete the FAFSA should fill it out every year, regardless of the funding plan for the year. For information on fellowships that are available through the Department, see the Graduate Coordinator. For campus level fellowships, and resources for external fellowships, consult with the Office of Graduate Studies website: <https://grad.ucdavis.edu/financial-support>

### **Nonresident Supplemental Tuition programs for International Ph.D. students**

2<sup>nd</sup> and 3<sup>rd</sup> year pre-candidacy PhD students: 100% of the NRST for pre-candidacy, 2<sup>nd</sup> & 3<sup>rd</sup> year, international, PhD and MFA students who are supported by a qualifying extramural GSR appointment is rebated by central funds.

PhD Students who have Advanced to candidacy: Nonresident Tuition (NRST) will be waived for Ph.D. students who have successfully completed the qualifying examination and advanced to candidacy. To be eligible for the NRST exemption in a given quarter, a Ph.D. student must have advanced to candidacy prior to the first day of that quarter. Qualified students are exempt from NRST for three calendar years after advancement to candidacy. Any students who have not completed their doctorate after the three-year period and who remain enrolled students, will be eligible to apply for a non-competitive NRST fellowship through the Office of Graduate Studies.

### **Graduate Student Researchers (GSR)**

Graduate Student Researcher positions are awarded from research projects with available funding by individual faculty members. The research project typically forms the basis of the student's thesis. Normally, GSRs are expected to work 10 hours/week for a 25% appointment or 20 hours/week for a 49% appointment during the academic year. Full-time appointments during the summer are possible if funding is available and at the approval of the Principal Investigator (PI). Appointment as a GSR at 25% or greater, entitles the student to a fee remission that covers all in-state fees and NRST, if applicable, for each quarter that the student is employed. The minimum GPA requirement is 3.0, and students must be enrolled in 12 units.

### **Work-Study Graduate Student Researchers**

Graduate Student Researcher support is also available for students under a federally funded Work-Study Program. This program offers funds partially subsidized by the federal government that substantially reduce the burden on a faculty member's research projects. Students must be a U.S. Citizen or Permanent Resident, and have a demonstrated financial-need before they can participate in the Work-Study Program.

Work-Study selections are coordinated between the individual faculty and the Department Chair. Students must demonstrate eligibility for the Work-Study Program by filing a FAFSA form (online). Eligible students will be notified of Work-Study appointments by the Graduate Coordinator.

### **Teaching Assistants, Readers and Associate-Ins**

Teaching Assistant appointments are offered to exceptional students that show promise as classroom instructors. These appointments are made by the faculty with a limited number of offers made to potential new graduate students. Applications for Teaching Assistant position may be obtained on the CEE website. The number of Teaching Assistant appointments available depends on the demand and/or courses offered during each Fall, Winter and Spring quarter. Teaching Assistants are needed in all areas of our graduate program and first consideration is given to CEE students. The University allocates funds for TA positions to the Department, so the number of Teaching Assistantships is limited. Some Teaching Assistants with three quarters of experience are sometimes appointed as an Associate-In Civil Engineering and may take full charge of a lower division course, and in some cases, with approval by the Committee on Courses and Graduate Studies may also take full charge of an upper division or graduate level course. Funds and opportunities for these appointments are limited. Teaching Assistants are appointed at either 25% or 50% appointments that entitle the student to a partial fee remission of their in-state fees for each quarter they are appointed as a TA (select campus based fees are not included in the fee remission). The minimum GPA requirement for Teaching Assistants/Readers/Associate-Ins is 3.0, and students must enroll in a minimum of twelve units. The units must include ECI 390 and may also include ECI 290C and 299 research units. Readers appointments are 25% and selected on a quarterly basis based on class enrollment. The instructor of the course generally selects students to hold this position.

## **V. OTHER GRADUATE STUDENT POLICIES**

### **Academic Residence Requirements**

Master's students are required to be registered as full-time students for a minimum of three academic quarters, and Doctoral students as full-time students for a minimum of six quarters. Two consecutive summer sessions may be counted as the equivalent of one regular quarter for residence purposes, so long as at least two units are taken in each session.

### **Full-Time Status**

Graduate Studies considers 12 units to be a minimum academic workload for full-time students. Students must enroll in at least 12 units (including 290C and 299) unless they are officially designated as a part-time student. First quarter international students who last studied in a language other than English may seek the Graduate Adviser's approval to enroll in less than 12 units the first quarter of study at Davis.

### **Part-Time Status**

Part-time student status is available only for students who have full-time employment, health constraints, or family obligations. Part-time students may enroll in no more than six units of credit, including 290C and 299, during any quarter. Approved part-time students pay reduced tuition (information on the Finance & Business website). Applications for part-time status are available online on the Registrar's website.

### **Planned Educational Leave Program (PELP)**

The Planned Educational Leave Program is designed to allow students to suspend their program of studies for good cause (i.e., clarifying educational goals, job opportunities away from campus, or time to resolve personal, financial or medical problems), leave the campus, and be guaranteed the right to return later to resume academic work with a minimum of procedural difficulty. PELP is recommended for those students who are certain of the quarter in which they plan to return and who plan to be away no longer than three quarters. If a student is not certain of the return date, it is suggested that the Withdrawal process and Readmission Application be used.

The minimum Planned Educational Leave is one full quarter; the maximum is three quarters (or 6 quarters by exception). Readmission is guaranteed assuming the student resumes regular academic work at the agreed upon date and removes any holds that may have been placed on registration. Students who do not return at the agreed upon date and who do not officially extend their leave will be automatically withdrawn from the University. International Students should consult with SISS concerning VISA issues prior to requesting PELP.

Students wishing to go on PELP are required to contact the Graduate Coordinator who will send the application via email and offer guidance on how PELP status impacts eligibility for University Services. Once the Graduate Adviser approves the PELP application, it will be forwarded to the Office of Graduate Studies for final approval. The e-mail chain will be sent to the Office of the Registrar and the student will be charged a \$70.00 fee. Applications for PELP must go through the full approval process prior to the first day of instruction for a full refund of any fees paid (minus the administration fee). Applications filed after the tenth day of instruction are usually not approved, and subject to the schedule of refunds.

Students are ineligible for PELP if they are using University facilities to perform their research. While on PELP a student is not eligible for any student employment or departmental funding. A student on PELP shall not be eligible to receive normal University services except as follows:

- Placement and Student Employment Services
- Advising and Counseling
- Housing – check with Housing Office for stipulations
- Financial Aid – grants and other financial aid are discontinued for the period of leave, but financial aid counseling is available

- Optional Health Services - a student may purchase, at his or her own option, a Health card which will entitle him or her to full student health benefits
- Academic Credit – students on PELP are not eligible to enroll in concurrent courses on the Davis campus and shall not earn academic credit at Davis during the period of leave

The full PELP policy can be found on the Graduate Studies website.

### **Filing Fee Option**

Filing fee status is designed for graduate students who have completed all degree requirements (course work, laboratory work, preparation of the thesis or dissertation, and have Advanced to Candidacy) and may not require an additional quarter in residence to prepare the final thesis or dissertation. In this case, a student is eligible to pay a reduced filing fee instead of registering as a regular student. Students on filing fee will make no demands upon faculty time other than the time involved in the final reading of theses or dissertations or in holding exit seminars.

A student will be allowed to stay on filing fee status for a maximum of one quarter. An extension to a second quarter is possible by submitting a time extension request with appropriate justification, but this is not automatic or guaranteed. It is expected that a student will graduate before the filing fee period has elapsed, otherwise they will be expected to readmit and enroll full time in order to graduate. Students on filing fee will be allowed one quarter of employment without request for exception: exceptions beyond this one quarter period are never granted.

Students on filing fee status are not eligible for the privileges accorded regularly enrolled students. In particular, students on filing fee status:

- May not make use of University educational facilities, such as office desk space, laboratories, computers or mailboxes, nor possess keys to University space
- Are not eligible for the services of the University Health Center or for University housing
- May not enroll in courses of any kind
- May not make use of faculty time except as noted above

### **Filing Fee Application**

To apply for filing fee status, a student must submit the Filing Fee Application with the Major Professor's signature to the Graduate Coordinator. Accompanying this form must be the College of Engineering Supplemental Filing Fee form with signatures from all members of the committee stating they have reviewed a draft of the thesis or dissertation. The student will need to pay a onetime filing fee at the Cashier's Office prior to submitting the form to the Graduate Coordinator. The completed forms, as well as a timeline for completion and a draft of the thesis/dissertation must be submitted to the Graduate Coordinator approximately two weeks prior to the first day of the quarter filing fee is to become effective. The Graduate Coordinator will distribute the filing fee forms and instructions on a quarterly basis.

### **Satisfactory/Unsatisfactory (S/U) Grades**

Master's students may not opt to take any courses on an S/U basis that are used to satisfy the course unit requirements given in Section II. Doctoral students may not opt to take any courses on an S/U basis that appear on their Program of Study.

The student may take courses in addition to those needed to satisfy degree or program requirements on an S/U grading basis as either a Master's or Doctoral degree student. However, in accordance with Graduate Council policy, they may take only one course per quarter on this basis. After advancing to Candidacy for the Ph.D. degree, students, with the approval of the Graduate Adviser, may take an unlimited number of courses on an S/U grade basis.

If the student wishes to be graded on a Satisfactory/Unsatisfactory basis in any course, they must file a petition for that course. These petitions must be approved by the Graduate Adviser and the Dean of Graduate Studies. If the student accumulates a combination of more than eight units of Incomplete and Unsatisfactory grades before Advancement to Candidacy, they will be placed on academic probation. If a student elects the S/U grading option, the student is assigned a letter grade by the instructor on the same basis as other students in the class (for e.g., in a graduate course, if a student earns a grade of B- or higher, an S is shown on the record; in an undergraduate course, if a student earns a grade of C- or higher, an S is shown on the record).

### **Guidelines for Minimum Performance in 299 Courses**

The number of hours that a student is expected to devote to 299 courses should not be less than three hours of research per week per unit of 299. Students enrolled in a 299 course must also enroll in one unit of ECI 290C and meet with the Major Professor regularly during the quarter. Modern research investigators usually need financial and other support for their research. To obtain this support, the investigator must be capable of writing research reports, status reports, and final reports. It is strongly recommended that our students be trained in these aspects of research. ECI 290C and 299 courses are a logical place for the students to receive this training. Each individual faculty member is assigned CRNs for these courses. These CRNs change every quarter and are available from the Graduate Coordinator.

### **Course Credit by Concurrent Enrollment, Examination, and Transfer**

Prior to admission into the CEE graduate program, a student may be authorized to take 12 units on a "concurrent" basis through University Extension. These units will be counted toward a graduate degree if this student is eventually admitted into our graduate program. Courses taken on a "concurrent" basis after a student has been admitted for graduate study may not be used for degree credit.

## **Masters Programs**

The sum of the units earned in “concurrent” extension courses, courses taken by “examination,” and courses taken at other institutions, may not exceed twelve for a Master's program. Up to six 200 series course units that were taken in undergraduate status at UCD may be transferred into a Master's program, so long as they were not used to satisfy any requirements for the B.S. degree. Similarly, up to six course units taken outside the UC system and while in graduate standing, may be transferred into a Master's program.

## **Doctoral Programs**

For the Program of Study for a Doctoral Candidate, the sum of the units earned in “concurrent” courses, and courses satisfied by “examination,” may not exceed twelve. Approval for all such courses must be sought through approval of the Program of Study. Acceptance is not automatic.

## **Academic Dishonesty**

Academic work is concerned with developing students' own scholarly and professional capabilities and their respect for the work of others. Undisclosed collaborations, un-cited use of other's work, plagiarism, and other forms of academic dishonesty corrode development of professional and scholarly skills and demonstrate lack of respect for the works of others. Appropriately, faculty, students, the CEE program administration, and the UC Davis campus treat any such behavior with grave seriousness. Such cases are referred to the Office of Student Support and Judicial Affairs (<http://sja.ucdavis.edu/>).

## **Research Conducted at Off-Campus Locations**

Research for the thesis may be conducted at an on- or off-campus location provided that:

1. The planning, execution of the research, and resolution of the data are essentially an independent effort by the student.
2. Members of the thesis committee have access to the research area.
3. The results of the research may be published in full, and in unrestricted journals.
4. University patent policies are recognized.
5. The student is enrolled in a 299 course so that a faculty supervisor is formally appointed and budgetary credit can be obtained for (a) the faculty member's effort, (b) support by other University personnel, and (c) use of University facilities. No research involving the use of University facilities or supervision by faculty members is to be conducted by the student when he or she is not enrolled in a 299 course. Exceptions may be made for research conducted during the summer. After the research has been completed, and with the concurrence of the thesis committee, a student may write his or her thesis without enrolling in a 299 course. The thesis committee may require that the student give a defense of the research to establish that the research is completed.
6. All other policies regarding 299 courses apply.



### **Graduate Student Desk Space**

Students (& post-docs) needing desks should fill out an application form, located on the CEE web page.

The CEE department will attempt to provide a desk in a shared office for all of its PhD students but such provision is not guaranteed. Limited space for MS students is available. Office and desk assignment will be made on the basis of a policy and priority, which can be found on the CEE website. Desk assignments are not permanent for the course of a student's career, and students may be asked to move periodically.

### **Purchases with University-controlled funds**

Please contact the purchasing staff in the CEE office before you purchase or agree to purchase anything with research or department funds. A purchase request must be submitted in advance of any purchase, with the appropriate signatures, before a purchase order is generated. Any purchase without the proper paperwork, is considered "unauthorized"\* and you may be held responsible for the amount owed. Department policy is to allow a two day turnaround time for processing any purchase request. As per the UC Davis Policy and Procedure Manual 350-10:

\*....."An "Unauthorized" purchase is a purchase, letter of intent to purchase, or request for scheduling in advance of an order that is made by a person who lacks the proper authorization to commit University-controlled funds. Unauthorized purchases are a violation of University Policy and the individual who purchases goods or services can be held responsible for payment of charges incurred."

## **ADMINISTRATIVE AND SUPPORT STAFF**

A complete listing of the graduate program members and their research areas is provided at the end of the manual. The following is a list of key support personnel and their roles (Updated Summer 2019):

Lauren Worrell	(530) 752-1441	Graduate Program Coordinator
Brooke Noonan	(530) 752-1434	Chief Administrative Officer
Kristin Mendoza-Fabiani	(530) 752-5759	Financial Analyst
Stefanne Haro-Maendly	(530) 752-8775	Financial Analyst
Fatima Garcia	(530) 752-1228	Financial Analyst
Nena Herrera	(530) 752-6900	Financial Operations Analyst
Sabrina Oliver	(530) 752-0586	Academic Personnel/Program Assistant
Rachel LeBrett	(530) 752-3425	Undergraduate Student Advising
Rufa Pazyuk	(530) 752-8948	Undergraduate Program Assistant
Reuben Castelino	(530) 754-6421	Computer Technical Support
Victor Jones	(530) 752-0589	Development Engineer
Daret Kehlet	(530) 752-0589	Development Technician
Jessica Hazard	(530) 754-6411	Env. Lab Manager, Safety Coordinator

# **APPENDIX A (GRADUATE PROGRAM BYLAWS)**

## **UNIVERSITY OF CALIFORNIA, DAVIS CIVIL AND ENVIRONMENTAL ENGINEERING BYLAWS**

**Administrative home: Department of Civil and Environmental Engineering**

**Revised and approved by graduate program on June 13, 2002**

**Approved by Graduate Council June 2002**

### **Article I. Objective**

The departmentally-based graduate program in Civil & Environmental Engineering ("Program") is organized to establish and administer a graduate program of instruction and research leading to graduate degrees in civil & environmental engineering in conformance with the regulations of the Office of Graduate Studies of the University of California, Davis.

### **Article II. Membership**

1. Membership in the Program shall be limited to members of the Academic Senate and Adjunct Faculty associated with the Davis campus. Membership is based on disciplinary expertise and is independent of specific departmental appointment.
2. Membership in the Program shall include all faculty with Academic Senate appointments and Adjunct Faculty in the Department of Civil & Environmental Engineering (CEE). Expectations of members are set forth in section II.4 below. Review of these members is accomplished during the normal merit review process in the Department of CEE
3. Individuals included by Article II.1 but not Article II.2 may become members in the Program on a case-by-case basis as follows. Any Program member may nominate an individual to become a member of the Program. Nominees are limited to members of the Academic Senate or Adjunct faculty who (1) hold a Ph.D. or equivalent degree, (2) have the appropriate background and training and have done research in engineering or closely related areas, and (3) meet the expectations set forth in section II.4 below. The candidate will be evaluated by the Program members. The evaluation will be based on a wide range of relevant information including the candidate's qualifications, experience, and interests. In particular, participation in graduate student and post-doctoral training relevant to civil engineering will be considered. Program members will vote on the candidate's membership by a confidential ballot. Upon election as described under Article V, the new member will be sent a letter of invitation by the Program Chair and be considered a member only in the event of an affirmative reply in writing. This membership will be reviewed every 6 years by the GPC. Evaluation will be based on the criteria described in II.4 below. Members with positive reviews will be notified in writing and will be considered a re-appointed member only in the event of an affirmative reply in writing. Members may resign from the Program at any time by writing a letter of resignation to the Program Chair.
4. Membership expectations are as follows:
  - a. Have an active research program commensurate with the expectations of the University of California.

- b. Be willing to participate in the administration of the graduate program, e.g., by serving on Program administrative committees or as an administrative officer of the Program.
- c. Provide graduate level instruction and/or offer research instruction.
- d. Serve on guidance, thesis/dissertation and examination committees for graduate students in the Program.

### **Article III. Organization and Administration of the Program**

1. The administration of the Program and its activities will be vested in a Graduate Program Committee (GPC) consisting of seven Program members. The membership of the GPC will include the Chair of CEE, a Vice Chair of CEE and one member drawn from each of the five major areas of study represented within CEE. The Vice Chair of CEE that is a member of GPC will serve as chair of GPC and Master Adviser of the Program.
2. The administrative home of this Program is CEE. The Chair of CEE, who is Chair of the Graduate Program as well, shall appoint the Program's GPC.
3. The principal responsibilities of the Graduate Program Committee (GPC) and the Chair of the program are the following:
  - a. The GPC is responsible for nominating candidates for Graduate Adviser to the Graduate Studies Associate Dean for Programs who will recommend nominees to the Chair of Graduate Council for appointment. The Master Adviser may be nominated to be the Graduate Adviser.
  - b. The members of the GPC will serve as area graduate coordinators for their respective areas.
  - c. The GPC will advise the Graduate Adviser on interpretation of policies described in the *Guidance Manual for Graduate Students and Their Advisors*, a document that reflects the advising system, student responsibilities, committee membership and responsibilities, and other policies relating to graduate student advising. Major changes to this manual may require action from the Program membership.
  - d. The GPC will act on issues associated with graduate admissions such as recruitment and admissions criteria. Members of the GPC make recommendations to the Graduate Adviser regarding admission decisions of applicants to their disciplinary area.
  - e. The GPC will make recommendations, as necessary, regarding requirements for graduate degrees and other programmatic proposals for consideration by members of the Program.
  - f. The GPC will make recommendations concerning disbursement of Block Grant support and work study to the Chair of the Program. The Chair of the Program may make the final decision or delegate this decision to the Chair of the GPC.
  - g. The GPC will make recommendations to the Chair of the Program regarding student fellowships. Based upon these recommendations, the Chair of the Program may make the final decision or delegate this decision authority to the Chair of the GPC.
  - h. The GPC will make recommendations to the Chair of the CEE department regarding selection of teaching assistants.
  - i. The GPC will review and approve the Programs of Study for doctoral students.
  - j. The GPC will review graduate program membership and bring membership issues to the attention of the graduate program members.
  - k. The GPC will review, edit, and maintain the *Guidance Manual for Graduate Students and Their Advisors* as necessary.

4. If a member of the Program has an unresolved disagreement with the Graduate Adviser over the interpretation of the CEE graduate program policies, then that Program member may appeal to the GPC for a clarification of policy. The seven-member GPC will review the appeal and vote on the policy interpretation if necessary. The majority vote of the GPC shall be binding in terms of policy interpretation. It will then be the responsibility of the Graduate Adviser to implement the policy and act accordingly.

#### **Article IV. Composition of Degree Committees**

1. The Graduate Adviser, in consultation with the student, the Major Professor and Program members, recommends appointment of members to serve on examination committees and to review and pass upon the merits of each doctoral dissertation and master's thesis. Final approval of the membership on these committees rests with the Chair of Graduate Council.
2. Program members, and only Program members, have the automatic right to serve as members or chairs on advanced degree committees. Non-members of the Program can serve as members or chairs on advanced degree committees upon written recommendation by the Graduate Adviser and approval by Graduate Studies as discussed in the Graduate Studies Handbook of the Office of Graduate Studies. The Chair of the qualifying examination committee may not also be the chair of the doctoral dissertation research committee.

#### **Article V. Meetings and Voting**

1. An annual meeting of the program will be held in the Spring Quarter of each year. The Chair may call meetings of the Program membership as needed. In all cases, a quorum for the purpose of voting, either via a meeting and/or via paper or electronic ballot, to modify bylaws or establish graduate program policy or elect membership must be greater than 50% of the non-emeriti and non-adjunct Program members. Passage of proposals requires approval by greater than 50% of the members who actually vote on the proposal.
2. Balloting can be done in a meeting of the Program and/or via paper or electronic communication. If via a meeting, notice of the meeting time, date, and location will be provided to Program members at least seven calendar days prior to the meeting. If via paper or electronic communication, at least seven calendar days will be allowed for expression of opinions about the proposal and acceptance of votes.
3. New and revised bylaws must be submitted to the Graduate Council for review and approval.

# MEMBERS OF THE GRADUATE PROGRAM

## CIVIL & ENVIRONMENTAL ENGINEERING UNIVERSITY OF CALIFORNIA, DAVIS

Last update – Summer 2019

### DEPARTMENTAL MEMBERS

Bischel, Heather	(Environ)
Bronner, Colleen	(Environ)
Cappa, Christopher	(Environ)
Darby, Jeannie L.	(Environ)
Kinyua, Maureen	(Environ)
Kleeman, Michael	(Environ)
Loge, Frank	(Environ)
Lund, Jay R.	(Environ)
Wexler, Anthony	(Environ)
Young, Thomas M.	(Environ)
Boulanger, Ross	(Geotech)
DeJong, Jason	(Geotech)
Jeremic, Boris	(Geotech)
Martinez, Alejandro	(Geotech)
Ziotopoulou, Katerina	(Geotech)
Bolander, John E.	(Struct)
Chai, Rob Y. H.	(Struct)
Cheng, Dawn (Lijuan)	(Struct)
Dafalias, Yannis F.	(Struct)
Kanvinde, Amit	(Struct)
Kunnath, Sashi	(Struct)
Miller, Sabbie	(Struct)
Rashid, Mark M.	(Struct)
Sukumar, N. (Suku)	(Struct)
Fan, Yue Yue	(Transp)
Harvey, John	(Transp/Geotech)
Jaller, Miguel	(Transp)
Kendall, Alissa	(Transp/Environ)
Niemeier, Deb A.	(Transp)
Sperling, Daniel	(Transp)
Zhang, Michael	(Transp)
Bombardelli, Fabian	(Water)
Forrest, Alex	(Water)
Herman, Jonathan	(Water)
Kavvas, M. Levent	(Water)
Morales, Veronica	(Water)
Oldroyd, Holly	(Water)
Schladow, S. Geoffrey	(Water/Environ)
Younis, Bassam A.	(Water)

### EMERITI MEMBERS

Asano, Takashi	(Environ)
Chang, Daniel P.Y.	(Environ)
Modera, Mark	(Environ)
Schroeder, Edward D.	(Environ)
Tchobanoglous, George	(Environ)
Wuertz, Stefan	(Environ)
Idriss, I. M.	(Geotech)
Kutter, Bruce L.	(Geotech)
Herrmann, Leonard R.	(Struct)
Ramey, Melvin R.	(Struct)
Romstad, Karl M.	(Struct)
Taylor, Michael	(Struct)
Mokhtarian, Patricia L.	(Transp)
Ginn, Timothy R.	(Water)
Larock, Bruce E.	(Water)

### ADJUNCT MEMBERS

Abrahamson, Norm	(Geotech)
Maroney, Brian	(Struct)

### NON-DEPARTMENTAL MEMBERS

Handy, Susan	(Transp)
Harter, Thomas	(Water)
Sandoval Solis, Samuel	(Water)