UNIVERSITY OF CALIFORNIA, BERKELEY
COLLEGE OF ENGINEERING
GUIDE TO GRADUATE PROGRAM RULES AND REGULATIONS

Approved by Vote of the College of Engineering Faculty, November 17th, 2008

Note: The Graduate Division Guide to Graduate Policy is the primary source of rules and regulations relating to graduate degrees and programs throughout the University. This document, the College of Engineering Guide to Graduate Program Rules and Regulations, includes College-wide rules and regulations that augment the Graduate Division document. The rules and regulations in this document are intended to constitute a minimum set of requirements for College of Engineering departmental rules. Each department has the option to have more extensive or restrictive rules and regulations in any area.

Section 1: ADMISSIONS

1. Departments in the College of Engineering offer the following degrees: M.S. in Engineering, Ph.D. in Engineering, Master of Engineering, Doctor of Engineering (D. Eng.).

The Department of Electrical Engineering and Computer Sciences also offers an M.S. and Ph.D. in Computer Science.

The M.S. and Ph.D. in Bioengineering are available only to those who are admitted to the UCB-UCSF Joint Graduate Group in Bioengineering.

2. For admissions, the College of Engineering requires a minimum scholastic average of "B" (or 3.0 GPA on a 4.0 scale or the equivalent) in upper division technical courses taken while in upper division standing[1]. If a year or more of graduate work is involved, it is primarily the graduate work on which judgment should be based. A 3.5 grade point average for completed graduate work in the major is recommended for applicants to be admitted for doctoral studies.

3. To be considered for admission after a scholastic denial, the applicant should present new supporting evidence of ability to do graduate work. Such evidence includes attendance at an acceptable institution for at least a year and achievement of an outstanding scholastic record.

4. College Policy on Remedial Course Work in English Technical Writing and Speaking for doctoral students.

The college policy on remedial course work in English applies to those students admitted to Ph.D. programs who are required by Graduate Division policy to submit official evidence of English language proficiency.

a. All newly admitted doctoral students with TOEFL internet-based (iBT) test scores below 100 or paper-based test (PBT) scores below 600 are required to take the

[1] Note that these GPA requirements are intended to augment and not replace the Graduate Division GPA requirements, which are based on overall GPA in all courses taken after the second year, rather than on technical courses exclusively.

screening test for E 140/E 190 offered by the College of Engineering Technical Communications Program near the start of the semester in which they first enter the College.

b. All doctoral students who are recommended for E 140 by the screening test are required to enroll in E 140 during their first semester at Berkeley. The course may be taken for a letter grade or on a Satisfactory/Unsatisfactory (S/U) basis.
c. Students who receive an Unsatisfactory grade (equivalent to C+ or lower) in E 140 are required to repeat this course the next semester it is offered.
d. All students admitted to a doctoral program with TOEFL iBT scores below 100 or PBT scores below 600 are required to enroll in and complete E190, including those who complete E 140 with a Satisfactory grade. All non-native speakers of English, including those whose TOEFL iBT scores are 100 or higher (or whose PBT scores are 600 or higher) are strongly encouraged to enroll in and complete E 190

Note: E 140 is the course Technical Communication for Non-Native Speakers of English*, and E 190 is the course* Technical Communication**.**

5. College of Engineering Deferred Admission Program

Occasionally, it may be appropriate for admitted students to temporarily defer their admission. Except for the two cases of automatic deferrals (Teach for America and military service) listed below, deferral decisions are at the discretion of department.

a. **Eligibility:** The deferred admission option is directed toward well-qualified U.S. students in their senior year applying either to the M.S. or to the Ph.D. program and to M.S. students applying to the Ph.D. program.
b. **Length of Deferral:** The length of the deferral will be up to 3 years. Students accepting deferred admission must meet specified deadlines for notifying departments of their acceptance of admission.
c. **Procedure:** The student must contact the accepting department directly to arrange for a deferral, and with the exceptions listed below, the decision of whether or not to offer a deferral to a specific student is at the discretion of the department. Slots for deferred students are borrowed by departments from their future enrollment quotas and deducted at the time the student enrolls. It is the responsibility of the department to maintain records for this program. Additionally, since the Graduate Division normally retains application documents for only two years, and since there is a possibility that some deferrals may extend beyond two years, departments should secure applicants' records from the Graduate Division.
d. Teach for America: Program Deferrals will automatically be granted to students admitted to the COE as well as to the Teach for America program.
e. Military Deferrals: Program Deferrals will automatically be granted to students admitted to the COE who wish to first serve in the military.

Section 2: REGISTRATION AND ENROLLMENT

1. 298, 300/301, and 601/602 Courses:

a. Use of the number 298 shall be restricted to "Group Studies, Seminars, and Group Research."

b. Use of the numbers in the 300 series shall be restricted to courses covering pedagogical preparation for beginning GSIs.
c. Use of the numbers in the 600 series shall be restricted to "Individual Study for Examination Preparation."
d. All 298, 300 series, and 600 series courses in the College of Engineering shall be offered on a "Satisfactory/Unsatisfactory" basis, and shall not count towards degree requirements.

2. **299 Courses:** Use of the number 299 shall be restricted to "Individual Study for Research." All 299 courses in the College of Engineering shall be offered on "Satisfactory/ Unsatisfactory" basis.

Section 3: PETITIONS

Although the most common petitions (change in major or degree goal, change of grading option, change in thesis committee, adding and dropping after the third week) require Graduate Division forms, *"Petition"* forms to be used by students making special requests not covered by formal petitions outlined above are available in department offices and on the College of Engineering web site. The petition form may be useful for requesting waiver of the engineering academic residence requirement after passing the Qualifying Examination, or for any other request that does not require a special form by the Office of Admission and Records or the Graduate Division.

Section 4: MASTER'S DEGREES

1. **Degree Designations**
   a. **Master of Science in Engineering –** is awarded for programs emphasizing the application of the natural sciences to the analysis and solution of engineering problems.
   b. **Master of Science in Computer Science –** is available to students in the Computer Science Division of the Department of Electrical Engineering and Computer Sciences.
   c. **Master of Engineering –** is awarded for programs of study in professional engineering emphasizing application of technical, social, and economic approaches involved in the design, construction, and operation of engineering structures, processes and equipment with consideration of associated environmental and ecological problems.

The Master of Science degree requires either a thesis (Plan I) or a comprehensive examination/project (Plan II). The Master of Engineering degree is awarded for programs of study in professional engineering. It is normally a two-year program and requires a comprehensive individual study or research project report.

2. Master's Degree Requirements

In addition to the requirements established by the Graduate Division, the College of Engineering has established the following rules and requirements:

a. **Scholarship Requirement:** All courses taken in the major must be letter-graded except individual study course 299. Other upper-division or graduate courses taken to satisfy unit requirements may be taken on a Satisfactory/Unsatisfactory basis, subject to the regulations established by the Graduate Division. Note that all 298, 299, 300/301, and 601/602 courses offered in the College should be offered on a "Satisfactory/Unsatisfactory" basis, but units for courses numbered 298, 300/301, and 601/602 shall not count towards the minimum unit requirement for master's or doctoral degrees.

b. **Continuance into Doctoral Program**: With departmental approval, a student who is admitted initially for the Master's program may continue into the doctoral program. A grade point average of 3.50 in the major and satisfaction of departmental examinations or other criteria are usually necessary.

c. Degree Requirements:

i. **Master of Science:** In addition to the Graduate Division requirements, no more than four units of individual study (299 courses) may count towards the **twelve required units of graduate coursework in the major field**.

ii. **Master of Engineering:** The Master of Engineering is intended to be a professionally oriented two year graduate degree. All of the requirements of the Master of Science degree apply to this degree, and individual departments should define additional degree requirements as appropriate, subject to the following requirements:

1. **Coursework Requirements:** A minimum of 40 semester units of approved upper division and graduate courses and individual study course 299. 24 of these units must be in the major, and these units in the major are further restricted as follows:
    a. At least 16 of the units must be coursework (not including 299).
        - At least 12 of these coursework units must be graduate courses.
    b. At least 4 units of the coursework must be individual study (299).

   The total number of required units must not exceed 48 semester units. The graduate level of professionally oriented individual study or research should culminate in a written report.
2. **Early Program Approval –** A *Master of Engineering Program* card approved by the Graduate (Major-Field) Adviser is submitted to the Chair of the Graduate Advisers for approval no later than the beginning of the second semester of study in the program.
3. **Technical Breadth –** At least 8 semester units of graduate or advanced undergraduate courses in technical fields different from the specialty area are required. Generally, these will be in another

department of the College of Engineering, but courses in the same Department or outside the College of Engineering are satisfactory *if they are clearly in a different area from the professional major* (e.g., courses in computers or controls for an EECS student specializing in physical electronics). Note that courses do not meet the technical breadth requirement if they are in the same general subject as the professional major even if they are in different departments (e.g., courses in controls in ME would not satisfy this requirement for an EECS major specializing in control systems).

4. **Non-Engineering Breadth** – This requirement is designed to help the student develop an awareness of the need for engineers to interact productively with people in non-engineering specialties in seeking solutions to real problems which benefit society in a broad sense. 8 semester units of graduate or advanced undergraduate courses taken in programs outside of the College of Engineering, and selected to fulfill this objective, are required. Selection of a program to fulfill this requirement should consider how the specific courses chosen will further the objective. As guidance, the basic sciences, statistics, and mathematics are not considered appropriate since their courses would principally enhance the student's engineering competence. Some courses in applied physical and biological science areas may be suitable (e.g., *Seismology* courses may be appropriate for students interested in *earthquake engineering*) while others may not. Similarly, some courses from other Professional Schools may not be appropriate (e.g., *Architecture* courses in *structures and construction* areas may not be appropriate for students with Professional Major in *Structural Engineering*) while others may be appropriate.

5. **Reporting Completion of Requirements**: The completion of an approved written project report must be reported to the Graduate Division by the Graduate Adviser Chair. The Graduate Division will request a report on all Candidates at the end of each term.

6. **Eligibility for the Degree of Master's Engineering**: According to the Academic Senate legislation, candidates for the Master of Engineering degree must:

    a. Have completed the requirements for the Bachelor's degree in one of the Colleges or Schools of the University of California or at another college or university of approved standing;
    b. Have completed the substantial equivalent of the basic requirements for the degree of Bachelor of Science of Engineering.
    c. **Academic Residence Requirement:** The student shall have completed at least 3 semesters of graduate study in

residence. Details are the same as those listed under requirements for the M.S. degree.

Section 5: DOCTORAL DEGREES

1. **Degree Designations:**
   - **a.** The **Doctor of Philosophy in Engineering (Ph.D.)** is awarded for a program of study and research emphasizing (A) the application of natural sciences to the analysis and solution of engineering problems or (B) the theoretical principles on which engineering is founded, and a proficiency in the application of scientific research methods.
     - i. **Doctor of Philosophy (Ph.D.) in Engineering** – is awarded for programs of study and research emphasizing the application of natural sciences to the analysis and solution of engineering problems. Students must have a B.S. in one of the accredited engineering curricula or satisfy the equivalent of a B.S. degree as determined by the department concerned.
     - ii. **Doctor of Philosophy (Ph.D.) in Computer Science –** is available to students in the Computer Science Division of the Department of Electrical Engineering and Computer Sciences.
   - b. The **Doctor of Engineering (D. Eng.)** is awarded for programs of study and research in professional engineering emphasizing applications of technical and economic approaches involved in the design, construction, and operation of engineering structures, processes, and equipment with consideration of associated environmental and ecological problems.
   - **c.** The **Candidate in Philosophy (C.Phil.)** is occasionally awarded to students who have been *Advanced to Candidacy* for the Ph.D. degree and have completed all degree requirements except the dissertation, if extenuating circumstances will prevent them from completing the dissertation. It is *not* to be recommended if there is doubt in the minds of the faculty that the student can complete the Ph.D. degree requirements. This degree is most often awarded posthumously.

2. **Academic Residence Requirements:** It is the College policy that doctoral students must spend two semesters in residence after passing the Qualifying Examination (these two semesters may be part of the three year residency requirement of the graduate division). The semester in which the Qualifying Examination was passed shall count toward this requirement.

3. **Scholarship Requirement:** Students studying for a doctoral degree are expected to maintain distinguished scholarship. Grade point averages at or above 3.5 in the major and at or above 3.0 in the minors are normally considered evidence of distinguished scholarship. Other evidence of distinguished scholarship may be presented upon recommendation of the Chair of Graduate Advisers for approval by the College Committee on Graduate Study.

4. **Major and Minor Fields (College of Engineering Requirement)**
   - a. A program of doctoral study shall include a major field and two minor fields.

i. The major normally is devoted to one field of study within a single department and should be in the area of the thesis research. In cases of approved multidisciplinary programs offered by recognized Graduate Groups, courses from several departments may constitute a major.
ii. In addition to a major field, each student must select two minor fields that serve to broaden the base of the studies and lend support to the major field. Each minor program field should have an orientation different from the major program and the courses involved should contain concepts not present in the major program. Departments should establish and enforce their own rules for minor fields. Typically, at least one minor field consists of courses taken outside the department, and two or three courses at the upper division undergraduate or graduate level are typically required for a minor field.
iii. There is no strict course or unit requirement for the doctoral degree. Most departments have established a minimum of 8 to 12 semester courses. No 298, 299, 300/301, or 601/602 courses shall count towards the minimum requirements for a doctoral degree.

5. **Qualifying Examinations:** In addition to the Grad Division rules for Qualifying Examinations and Qualifying Examination Committees, some departments exclude the thesis advisor from participating in the examination. The application for admission to Qualifying Examinations and appointment of the Committee is made by submission of the "*Program of Study for Doctoral Candidates***"** to the Department Graduate Office at least four weeks before the examination. Courses listed on the *"Program of Study for Doctoral Candidates"* should include courses taken while in graduate standing, either here or elsewhere, excluding 298, 299, 601, and 602. All courses should be characterized as falling within the major or minor fields and, if necessary, certain courses may be regarded as constituting an additional minor.

   The student's Graduate (Major-Field) Adviser shows approval of the program and nominates the Committee by signature on the card. After endorsement by the Chair of Graduate Advisers, the Department will petition the Graduate Division to appoint the Qualifying Examination Committee. A student may not take the examination prior to receipt of notice of admission to the examination from the Graduate Division.

Section 6: APPEALS

The College of Engineering's appeals procedure covers appeals of administrative or academic decisions that terminate or impede the progress of a College of Engineering graduate student toward his or her degree goal. The scope of this procedure specifically *excludes* decisions about course grades, student employment, and student discipline, the appeal of which are covered by separate University or campus policies.

As a first step, students should bring grievances to the attention of their graduate advisers, who attempt to resolve the matter informally as described in the Graduate Division's Guide to Graduate Policy. If this fails, the Department's Chair of Graduate Advisers will attempt to solve the problem informally.

If these informal processes are not successful, then the matter is referred to a Department committee (Graduate Advisers Committee, Graduate Study Committee, Executive Committee, Grievance Committee, or *Ad Hoc* Committee) for a hearing and formal decision. If resolution is still not achieved, this committee may then refer the issue to the Department Chair for final Departmental review.

The next step for cases unresolved at the Departmental level is to submit an appeal to the Associate Dean of Student Affairs in the College of Engineering. Finally, if all the above attempts fail, a formal appeal may be presented to the Dean of the Graduate Division.