

**INDUSTRIAL ENGINEERING AND  
OPERATIONS RESEARCH  
GRADUATE STUDENT HANDBOOK**

**2018 – 2019**



**UNIVERSITY OF CALIFORNIA, BERKELEY**

**Student Services Office  
4145 Etcheverry Hall  
Berkeley, CA 94720**

## Table of Contents

<b>Chapter 1: Introduction</b>	<b>3</b>
<b>Chapter 2: Administration</b>	<b>4</b>
2.1 Staff	
2.2 IEOR Advisory Board	
<b>Chapter 3: Faculty</b>	<b>5</b>
3.1 Faculty Contact Information	
<b>Chapter 4: Registration Information and Adding/Dropping Courses</b>	<b>6</b>
4.1 Enrollment	
4.2 Fee Payment	
4.3 In Absentia Registration	
4.4 Withdrawn Students	
<b>Chapter 5: Master of Science (MS)</b>	<b>10</b>
5.1 Master of Science in IEOR	
5.2 Five Year Bachelor's-Master's Program	
<b>Chapter 6: Master of Engineering (MEng)</b>	<b>19</b>
<b>Chapter 7: Doctor of Philosophy (PhD)</b>	<b>22</b>
7.1 Course Requirements	
7.2 The Doctoral Entrance Examination	
7.3 Program of Study: Major and Minor Requirements	
7.4 The Qualifying Examination	
7.5 Advancement to Candidacy	
7.6 Dissertation Workshops and Dissertation Defense Workshop	
<b>Chapter 8: Filing Fee</b>	<b>31</b>
8.1 General Information	
8.2 Application	
8.3 Readmission Procedures	
<b>Chapter 9: California Residency</b>	<b>35</b>

<b>Chapter 10: Financial Support</b>	<b>38</b>
10.1 Overview	
10.2 GSI Appointments	
10.3 Reader Appointments	
10.4 GSR Appointments	
<b>Chapter 11: Graduate Appeals Procedure</b>	<b>41</b>
11.1 Purpose and Scope	
11.2 Informal Resolution Procedures	
11.3 Formal Resolution Procedures	
11.4 Appeal to the Graduate Division	
11.5 Complaints Involving Discrimination	
<b>Chapter 12: Deadlines</b>	<b>44</b>
<b>Chapter 13: Department and Campus Services</b>	<b>45</b>
13.1 Department Services	
13.1.1 Copy Services	
13.2 Campus Services	
13.2.1 Disabled Students' Program	
13.2.2 Cal 1 Card	
13.2.3 Library	
13.2.4 Sports and Exercise	
13.2.5 Campus Safety Services	
13.2.6 Student Housing	
13.2.7 Parking and Transportation	
13.2.8 AC Transit EasyPass	
<b>Chapter 14: Resources</b>	<b>49</b>
<b>Chapter 15: Student Life</b>	<b>53</b>
15.1 Student Groups	
15.2 Resources of Interest	
<b>Chapter 16: Student Parents</b>	<b>55</b>

## **CHAPTER 1: INTRODUCTION**

Welcome to the IEOR Graduate Student Handbook where you will find department-specific information regarding courses and degree requirements, as well as a collection of resources that will aid IEOR graduate students in navigating their way towards completing their studies at Berkeley.

This Graduate Handbook is meant as a reference only. The Graduate Division Guide to Graduate Policy is the primary source of rules and regulations relating to graduate degrees and programs throughout the University. For additional information, answers to your questions or feedback, please contact Anayancy Paz, Graduate Student Advisor.

## CHAPTER 2: ADMINISTRATION

### 2.1 Staff

The IEOR staff provides information and resources to assist students during their studies and to clarify some of the necessary administrative demands of the Graduate Division.

Contact information and departmental roles of IEOR staff members can be found at

<http://ieor.berkeley.edu/people/staff>.

### 2.2 IEOR Advisory Board

The IEOR Advisory Board (IAB) is a volunteer group of leaders from industry, government, academia, and the engineering profession who have a major influence in the IEOR field. Advisory Board members are strongly committed to maintaining and strengthening the excellence of the IEOR Department at UC Berkeley so that it continues to be one of the best educational and research programs in the world.

The Advisory Board provides:

- Feedback on Department's educational, research and outreach initiatives.
- Insights and counsel from industrial and other external organizations into the trends, opportunities, and challenges in the field.
- Fundraising support and advice with developing the Department's resources, industrial partnerships, and related activities.
- Advocacy for the Department within the College of Engineering and the broader UC Berkeley campus community.

A list of current IEOR Advisory Board members can be found at

<http://ieor.berkeley.edu/people/advisory-board>.

## CHAPTER 3: FACULTY

### 3.1 Faculty Contact Information

Contact information for faculty can be found at <http://ieor.berkeley.edu/people/faculty>.

## CHAPTER 4: REGISTRATION INFORMATION AND ADDING/DROPPING COURSES

To be officially registered, you must enroll in at least 12 units and pay the first installment of your registration fees. This will allow you access to the AC Transit EasyPass, libraries, and fellowships. We strongly advise incoming students to meet with the Head Faculty Graduate Advisor to discuss your class schedule.

### Registered Students

- Must register for 12 units
- May graduate
- Have access to the Recreational Sports Facility (RSF) and libraries
- Are covered by SHIP (Student Health Insurance Plan)
  - The SHIP is a comprehensive medical insurance plan, providing medical, counseling, prescription, vision and dental services. For more information, please see <https://uhs.berkeley.edu/ship>.
- May hold Graduate Student Researcher (GSR), Graduate Student Instructor (GSI), and Reader appointment(s)
- Eligible for all student services and privileges.

### 4.1 Enrollment

1. Review Graduate Division's enrollment website at <http://registrar.berkeley.edu/registration/enrollment> for deadlines and regulations.
2. Review the schedule of classes at <https://registrar.berkeley.edu/scheduling/academic-scheduling/class-schedule>
3. Enroll in classes in [CalCentral](#).
  - a. During Phase I, sign up for up to 12 units of classes. Please note that students usually take 3 classes and the rest of the units are usually IEOR 298 or 299. If you are unable to enroll in your desired class because it is full, be sure to place your name on the waitlist and attend the first lecture.

- b. During Phase II, you may add additional classes until you are taking at least 12 units. The unit cap is 20.5 units for the semester. (this is a hard cap enforcement during Phase II). You are free to enroll for more units during the Adjustment Period in August (fall)/January (spring).
4. You can make changes (adding or dropping classes) to your schedule in [CalCentral](#) from Phase I during the Phase I period. After Phase I is closed, you must wait until Phase II to adjust your courses further. After Phase II begins you may adjust your courses until the third week of instruction. After the third week of instruction, you must submit to the Student Services Office (4145 Etcheverry Hall) the [Graduate Petition to Change Class Schedule](#) to change your schedule.
5. Verify the classes on [CalCentral](#) to make sure your schedule is correct.

#### **4.2 Fee Payment**

For information on how to pay your bill, please see <http://studentbilling.berkeley.edu>.

Students who have IEOR Department support, such as a GSR, GSI, or Reader appointment or who have been granted fellowships may have partial or full fees paid. Some students with external fellowships such as the NSF will also have their fees paid. Percentages dictate the level of payment. Please see

<http://graddashboard.berkeley.edu/appointments/fee-remission-eligibility> for details.

Details of your fee payment status can be found at [CalCentral](#).

#### **4.3 In Absentia Registration**

In absentia status is a form of registration available to academic and professional graduate students undertaking coursework or research related to their degree programs outside of California. Students registered in absentia are only assessed full health insurance fees, and 15 percent of the academic fees. If applicable, students are also assessed non-resident tuition and/or professional school fees.



The Absentia Request form can be found in your [CalCentral](#). Applications are due in early August for the fall semester and early January for the spring semester to the Graduate Division Office.

### **Eligibility Criteria**

- Students must be enrolled full-time in regular UC units. Students in self-supporting programs or exchange programs are not eligible for in absentia registration.
- Research or coursework
  - Must be of a nature that makes it necessary to be completed outside of California for at least one full academic term.
  - Must be directly related to the student's degree program as evidenced by faculty approval.
  - Must involve only indirect supervision appropriate to evaluating the student's academic progress and performance from UC faculty during the in absentia period.
  - Must involve no significant studying or in-person collaboration with UC faculty during the in absentia period.
- Doctoral students:
  - Must be advanced to candidacy by the time in absentia begins.
  - May only use in absentia registration for a maximum of four semesters.

Students may hold University fellowships and GSR appointments, but may not hold GSI, Reader, or Tutor appointments during the in absentia period.

International students on F or J status planning on registering in absentia, please also consult with the [Berkeley International Office](#) (2299 Piedmont Avenue, 510-642-2818) of your plans.

### **4.4 Withdrawn Students**

For instructions on how to withdraw from your graduate program, please visit

<http://grad.berkeley.edu/policy/registration-and-exchange-programs-policy/#d18-withdrawal>.

## **Withdrawn Students**

- May not take classes
- May not graduate
- Certain fees may not be refundable
- Cannot hold GSR or GSI appointment
- May hold Reader appointment
- May take Prelim Exam with permission of Head Graduate Advisor and Chair of Prelim Committee
- May not take Qualifying Exam
- Must apply for readmission. There is no guarantee that a student will be readmitted.  
Please note that there is a reapplication fee.

For information about how to apply for readmission please see:

<http://grad.berkeley.edu/policy/registration-and-exchange-programs-policy/#d19-readmission-and-re-enrollment>.

## CHAPTER 5: MASTER OF SCIENCE (MS)

The MS is a one year (Fall and Spring semester) technical and full-time master's degree program. Participants in the program are self-funded; the Department of IOR does not offer funding and students are not eligible for Academic Student Employment appointments funded by the Department. The MS is a terminal degree, meaning that students in the MS program are not expected to continue further into the PhD program.

The Five Year MS program is available only to UC Berkeley undergraduates majoring in IOR or ORMS.

### 5.1 MS Program -

- **Plan II**

Master of Science degree, Plan II (Comprehensive Examination or Project):

Students are required to complete 24 semester units of upper division and graduate course. 12 units of 200 level courses must be in the IOR major and taken for a letter grade. IOR 298 does not count towards this requirement.

All students are required to take at least one course from each of the following groups:

1. **Optimization:** 160, 162, 262A\*, 262B, 264, 266, 268, 269
2. **Stochastic Models:** 131, 161, 165, 166, 263A, 263B, 265, 267
3. **Modeling:** 150, 153, 215, 220, 221, 250, 251, 253, 254, 290A, 290R

\*Students may take EECS C227T as an alternative to 262A.

Students must also register for and attend the Department's Monday seminar for at least one unit in one semester.

### **Master of Science Tracks**

A MS student who wishes to specialize in a sub-area of the discipline may include one or more of the following tracks in his or her program. Students are not required to choose a track. All MS students, whether they choose a track or not, must complete the requirements of the Master of Science degree listed above.

- ***Operations Research Track***

IEOR 262A

IEOR 263A

2 of the following: IEOB 221, 261, 262B, 263B, 264, 266, 267, 268, 269

- ***Production and Service Operations Track***

2 of the following: IEOB 250, 251, 254

1 of the following: IEOB 150, 151, 153

1 of the following: IEOB 130, 131, 165, or another course from the preceding category.

- ***Simulation and Decision Technology Track***

IEOB 115 or 215

IEOB 261 or 131

IEOB 166

IEOB 262A

- ***Financial Systems Track***

IEOB 221

IEOB 222 (may be replaced by PHDBA 239A upon approval)

IEOB 223 (may be replaced by Stat 251 upon approval)

IEOB 131 or 231 (may be replaced by Econ 140P or PHDBA 239C upon approval)

In addition to the required and optional courses, students must write a thesis (plan I) or pass a comprehensive examination (plan II).

- **Thesis (Plan I)**

For students who choose to write a thesis, the minimum unit requirement of regular coursework is 20 units of upper division and graduate courses, not including the thesis. Half of these units must be 200-level course work in the IEOB major. A committee of three professors, including one from another department, will be formed to guide and approve the thesis.

### ***The Comprehensive Exam (Plan II)***

Instead of writing a thesis, MS students can choose to take the Comprehensive Exam. The structure of the comprehensive exam may vary from year to year, but it is designed so that students whose curriculum includes 12 units of graduate courses in the major should be prepared for the exam. The comprehensive exam currently consists of a short oral presentation, to a panel of two or three faculty, of a solution to a case study, for which the students will be given at least two weeks to prepare, followed by relevant questions from the faculty panel.

### **Additional Requirements for the MS (Plan I and Plan II)**

All students in the Department must also take the Department Seminar, IEOR 298-1, for one unit. Beyond these requirements, the program is quite flexible. No more than two units of independent study (299) may be counted toward the degree. The remainder of the program can include electives outside the department.

Entering students are expected to have two years of undergraduate mathematics, primarily calculus but including linear algebra. In addition, they are expected to have completed at least one semester each of upper division courses in probability and in statistics. They should also have competency in a scientific programming language.

### **Advancement to Candidacy**

A student who has been advanced to candidacy has been officially recognized by the university as a candidate for the degree. In order to be advanced to candidacy a student must have an approved Course of Study Plan on file, completed a minimum number of units, and have a minimum GPA of 3.0. Students are required to review their Academic Progress Report listed in CalCentral by the third week of their second semester.

If course requirements are set to be complete on time, the student becomes eligible to take the final oral exam (otherwise called the Master's project). This is a case study report and oral examination conducted by a committee of two faculty members.

### **Relation to Doctoral Requirements**

In general, the first year Doctoral Requirements meet the requirements of the MS degree, but the reverse is not necessarily true. Students who are interested in earning a PhD degree should apply to enter the PhD program even if they do not yet have an MS degree. More detailed information on the Entrance Exam may be found in the section on Degree Requirements for the PhD.

### **5.2 Five Year Bachelor's-Master's Program**

The Department of IEOR has a five-year program that combines the Bachelor's and the Master's degree. This program is only for IEOR and ORMS undergraduates to broaden their educational experience at Berkeley.

The Five Year Bachelor's-Master's program is designed for a small number of students with outstanding performance to allow them to obtain an MS degree in addition to the Bachelor's degree. The Master's degree portion typically takes three semesters to complete. In other words, the Five Year Bachelor's-Master's program will allow well-prepared students to start taking graduate-level courses in the last semester of their undergraduate portion. Admission to this program will be more selective than the standard admission for the MS program.

The combined Bachelor's-Master's program has two features that distinguish itself from the standard MS program. First, each student in the program must complete three courses within his/her selected area of concentration, one of which may be an upper division or graduate course from outside the department that is aligned with his/her concentration. Second, each student must complete an individual or small-group project as part of the program via at least 2 units of either graduate-level independent study units or a graduate-level project-based course, to gain experience in applying IEOR methodology to real world problems. Students can fulfill both of these requirements without taking courses or units beyond those required for the Master's degree by carefully planning their course of study.

### **Admission Process**

The admission process has three steps:

1. Applicants complete the Departmental Application in the Fall semester of the senior year. The application includes Statement of Purpose, Draft course of Study Plan, current transcript, 2 Letters of Recommendation.
2. The Departmental Graduate Admissions Committee selects a subset of applicants for interviews. Only a subset of those interviewed will be admitted to the program.
3. Students admitted by the Department are required to submit an application to the Graduate Division for the MS degree by the December deadline. Graduate Division admission is contingent on maintaining good progress, including a minimum GPA of 3.0, successful receipt of the Bachelor's degree, and incurring no disciplinary actions.

### **Admission Requirements**

1. Outstanding performance in the current program (preferred minimum 3.5 GPA in upper division courses)
2. A well-written and compelling personal essay explaining the student's rationale for entering the program
3. A successful interview in which faculty will assess the student's technical background, experience, and ability to communicate orally
4. Two letters of recommendation from faculty members who know the applicant well and can provide both an evaluation of the student's technical skills and evidence that he or she can benefit significantly from the program
5. A non-binding draft course of study plan, demonstrating that the applicant has carefully considered the area of concentration that he or she wishes to pursue

### **Application Documents**

Required forms and supporting documents for the application are to be submitted in a single envelope to the IEOR Department. Incomplete applications will be automatically rejected.

1. Departmental application
2. Draft course of study plan
3. Statement of purpose

4. Unofficial transcripts (note: if admitted to this program, official transcripts will be required)
5. Two letters of recommendation (please see the application form for instructions)

**NOTE:** For Berkeley students admitted to the five-year program, the normal departmental requirement of the GRE is waived.

Students selected for the program are also required to meet all of the normal requirements for applying for an M.S. degree during their senior year, with the understanding that as long as they maintain good performance in their courses and have incurred no disciplinary actions, their admission recommendation to the Graduate Division should be pro forma.

### **Requirements for the MS Degree within the 5-Year Program**

#### **Course Requirements**

In addition to the course requirements that all M.S. students must complete, each student must complete three courses in his or her area of concentration. Applicants may find it helpful to consider the following areas of concentration when preparing their course of study plan. Potential IEOR courses in each area are listed below. Students should consult their faculty advisors for potential courses in other departments.

#### **Operations Research**

IEOR 261, 262B, 263B, 264, 266, 267, 268, 269

#### **Production, Logistics and Service Operations**

IEOR 215, 250, 251, 253, 254

#### **Financial Engineering**

IEOR 215, 221, 290A, 290R

#### **Plan II capstone**



Oral comprehensive exam or master's project (a project report and oral examination approved by a committee of two faculty members)

### **Procedure to Request Backdate Graduate Standing**

Berkeley undergraduates who take graduate coursework during their last undergraduate semester may petition to backdate graduate standing in order to receive graduate credit for that coursework. Graduate standing may be backdated for only one semester, and students may petition for credit only for the coursework taken in the FINAL undergraduate semester that was not previously used to satisfy requirements for another degree and/or honors program at Berkeley or at any other institution. The request must be submitted to the Head Graduate Adviser in a memo by the end of the first week of classes. The memo must specify the units and courses taken in the FINAL undergraduate semester to be backdated and must be accompanied by a written statement from the student's undergraduate college confirming that the coursework was not undertaken in fulfillment of an undergraduate degree requirement. No single course may be used to satisfy more than one category. Courses in the 300 series or higher do not count toward the unit requirements for Master's degree.

### **Academic Residence Requirement for a Master's Degree**

A Master's degree requires a minimum of two semesters of academic residence. Academic residence is defined as payment of registration fees, and enrollment in at least 4 units in 100 or 200 series courses each semester of academic residence.

### **Advancement to Candidacy**

A student who has been advanced to candidacy has been officially recognized by the university as a candidate for the degree. Advancing to candidacy means you are ready to write a master's thesis (**Masters Plan I**) or take a final oral exam (**Masters Plan II**). Masters students are advanced to candidacy as a group by their Student Services Office. It is the student's responsibility to ensure that they are set to complete all degree requirements, maintain progress to completion, complete a minimum number of units, and have a GPA of at least 3.0.

Students are required to review their Academic Progress Report before the third week of their second semester and inform the Student Services Office of any any missing grades, inconsistencies, etc.

If course requirements are set to be complete on time, the student becomes eligible to take the final oral exam (otherwise called the Master's project). This is a case study report and oral examination conducted by a committee of two faculty members.

### **Frequently Asked Questions - Five Year Bachelor's-Master's Program**

- *How does this program differ from the standard MS program?*

The combined Bachelor's-Master's program is targeted toward students who wish to design a coherent program in an area of concentration, combining IEOR courses with a course(s) outside the department, and to apply their education on a real world project.

- *I don't quite meet the GPA requirement of 3.5. Will exceptional applicants be considered with an upper division GPA of less than 3.5?*

Chances of admission are not good with an upper division GPA of less than 3.5. However, demonstrated strengths that are consistent with the applicant's planned course of study could compensate for a slightly lower upper division GPA.

- *I don't have any research experience. How important is this for my application?*

Undergraduate research is definitely a plus, but is not required for the application.

- *When are applicants admitted?*

Typically, students will apply and be provisionally admitted by the Department near the end of the Fall semester of the Senior year. Students in the final semester of their undergraduate program are not eligible to apply.

- *I'd like to take some time off between completing my bachelor's degree and starting the master's degree. Is this possible?*

No. This program will not accommodate leaves of absence. Admitted students are expected to transition immediately from the undergrad program to the grad program in order to complete the entire program in five consecutive years. If you wish to take some time off, you are encouraged to apply to the standard MS program.

- *I recently graduated from UC Berkeley IEOR/ORMS undergraduate program. Can I apply for this program?*

No. Applications will be accepted only from students currently enrolled in our undergraduate degree programs. Other students, including IEOR/ORMS graduates, are encouraged to apply to the standard MS program.

- *Can 5th year students receive assistantship support?*

In principle, the answer is yes, but in practice the answer is very likely to be no. Completing the requirements for the MS program in two semesters beyond completion of the BS requirements will be very challenging and time consuming (unless the student can transfer units from the final semester of his or her undergraduate study that were not counted toward his or her Bachelor's degree requirements). However, if a faculty member wishes to support a 5th year student to complete his or her MS program within two semesters, then it is the decision of the individual professor.

- *Am I still allowed to apply for the regular MS or PhD program if I am not admitted?*

Yes.

## CHAPTER 6: MASTER OF ENGINEERING (MENG)

<b>Normative Time</b>	9 months or 2 semesters
<b>Minimum Number of Units to Complete Degree</b>	25 semester units
<b>Minimum Number of IEOR</b>	12 semester units (must be in 200 series and letter-graded)

All students are required to take the new *MEng Core Courses*: **IEOR 240** and **IEOR 241**.

Students must take two additional graduate IEOR courses. For guidance, we propose the following concentrations.

***Decision Analytics*** – Provides students with a broad understanding of cutting-edge approaches to quantitative analysis and managerial decision-making applicable across a wide range of industries.

*Course Requirements: any two of IEOR 220, 231, 250, 251, 252, 253, 254*

***Risk Management & Finance*** – Prepares students for careers in finance, energy, and other industries where risk management is critical.

*Course Requirements: IEOR 221 and any one of IEOR 222, 231*

***Simulation & Modeling*** – Prepares students for careers as analysts focusing on production and distribution systems, service systems, product or process design, or marketing in a wide range of industries.

*Course Requirements: IEOR 231 and any one of IEOR 220, 250, 251, 252, 253*

### **CORE LEADERSHIP CURRICULUM UNITS**

Students must enroll in 8 Semester Units (must be in 200 series). These must consist of:

2 semester units – E 291: Capstone Integration (taken for a letter grade)

3 semester units – E 271: Engineering Leadership I (taken for a letter grade)

3 semester units – E 272: Engineering Leadership II (taken for a letter grade)

OPTIONAL – Innovation Lecture Series (taken S/U)

### **CAPSTONE PROJECT UNITS (E 296M A-B)**

Students must enroll in 5 semester units of 296M A-B (letter graded), which can be counted towards the 25 unit total requirement. The semester enrollment restrictions for these courses are as follows:

2 semester units – Fall

3 semester units – Spring

Students are required to complete a capstone project. The project enables the student to integrate the core leadership curriculum with the concentration and gain hands-on industry experience.

### **MINIMUM GRADE POINT AVERAGE (GPA)**

All students are required to have a minimum overall GPA of 3.0.

### **MINIMUM UNITS REQUIRED TO BE REGISTERED EACH SEMESTER**

Full time graduate students must enroll in at least 12 semester units during the Fall and 13 semester units during the Spring.

### **ADVANCEMENT TO CANDIDACY**

Students should apply for Advancement to Candidacy at the beginning of their second semester.

### **ORAL PRESENTATION AND REPORT**

An oral presentation and a written report of the capstone project are required by the end of the Spring semester. The audience at the oral presentation may consist of the student's faculty advisor, other instructors, peers, and industry partners.

Two committee members are needed for the report:

Student's IEOR advisor

IEOR or outside professor

Both members must also be members of the Berkeley Division of the Academic Senate.

## Chapter 7. PhD (Doctorate Degree)

The Department of Industrial Engineering and Operations Research offers two doctoral degrees: Ph.D. in IEOR, and D.Eng. in I.E. There is some difference between the two degrees in the nature of an acceptable dissertation, but all other degree requirements are the same. For students specializing in a particular area and/or working with particular faculty members, acceptable programs may be more tightly structured, as determined by the faculty involved. Course numbers are for courses within this Department; consult the General Catalogue for course descriptions. Excluded here are University requirements regarding registration and residence.

### 7.1 Course Requirements

Doctoral students are required to complete at least nine IEOR graduate courses prior to graduation <sup>(1)</sup>. The set of courses must include:

- IEOR262A (Mathematical Programming I),
- IEOR263A (Applied Stochastic Processes I),
- at least one additional course from Group A,
- at least one additional course from Group B,
- at least two courses from Group C,
- IEOR298-1 (Departmental Seminar) at least one semester in the first year. Also, students must attend at least half of the departmental seminar (298-1) presentations in every subsequent semester.

#### **Group A - Optimization**

262B (Mathematical Programming II)

264 (Computational Optimization)

266 (Network Flows and Graphs)

269 (Integer Programming and Combinatorial Optimization)

#### **Group B – Stochastic Modeling**

231 (Intro to Data Modeling, Statistics, and System Simulation)

261 (Experimenting with Simulated Systems)

263B (Applied Stochastic Processes II)

267 (Queueing Theory)

#### **Group C – Modeling and Applied Operations Research**

215 (Analysis and Design of Databases)

220 (Economics and Dynamics of Production)

221 (Introduction to Financial Engineering)

250 (Introduction to Production and Logistics Models)

251 (Facilities Design and Logistics)

253 (Supply Chain Operations and Management)

254 (Production and Inventory Systems)

265 (Learning and Optimization)

268 (Applied Dynamic Programming)

*In addition, many occasionally offered 290 courses fit into this category (290A, 290R, etc.) – check with the head graduate advisor about specific courses.*

- (1) Students are encouraged to take these nine courses in the department for a letter grade. The six courses required for the Doctoral Entrance Examination must be taken for a letter grade. At least nine courses overall in the department must be taken for a letter grade.

Advanced undergraduate courses in Linear Algebra and Real Analysis (equivalent to Math 110 and Math 104) are prerequisites for the PhD program. Students who have not taken these courses prior to entering the graduate program are required to do so during their first year.

Students in the doctoral program are strongly encouraged to take eight courses (four per semester) their first year in the graduate program, in addition to the department seminar.

## **7.2 The Doctoral Entrance Examination**

Every doctoral student is required to take the Doctoral Entrance Examination. Students entering without an MS degree are required to complete all MS degree requirements, and may do so by completing the MS course requirements and passing the Doctoral Entrance Exam.

The Entrance Examination consists of three parts:

- (1) An optimization exam: Students are required to take 262A and at least one other course in Group A to be prepared for this exam.
- (2) A stochastic processes exam: Students are required to take 263A and at least one other course in Group B to be prepared for this exam.
- (3) An exam on modeling and applied operations research: Students are required to take two courses in Group C to be prepared for this exam.

*All required courses for the Doctoral Entrance Examination must be taken for a letter grade.*

The Entrance Examination will be offered near the end of the spring semester, during RRR week, before the finals. Passing the Entrance Examination is based on both superior performances on all parts of the exam, and on previous coursework. Students are required to take the entire exam at the same time. In order to take the exam, students are expected to perform sufficiently well in their first year courses. During the middle of the spring semester, a faculty committee will review the performance of first year doctoral students, and students who have performed sufficiently well on their coursework so that a superior performance on all parts of the exam will lead to passing will be permitted to take the exam.



The entrance examination will consist of three oral examinations in the areas of optimization, stochastics and modeling. Each student will be examined by two faculty members in each of the three areas. In optimization and stochastics each student will be examined on topics related to the two courses taken in the area (in case the student took three courses in optimization, they should state a preference to which course will be considered the second). For modeling, the students will be provided with a case study, approximately two weeks prior to the exam. Each student is expected to address the case study using applied operations research techniques to be presented at the modeling oral exam.

### **7.3 Program of Study: Major and Minor Requirements**

Some students have specific research interests and goals when they enter a doctoral program; for others, these interests develop in the process of taking courses and preparing for the Entrance Examination. In either case, it is imperative that students begin their research as soon as possible after completing their Entrance Examination. One of the important initial steps in this process is finding a faculty member who will agree to supervise the dissertation (Thesis Adviser). Every student is required to complete at least one unit of independent study with a faculty member each semester after passing the Entrance Examination until finding a Thesis Adviser.

A minimum of nine graduate courses are required in the major, including those taken prior to the Entrance Examination. Usually, these are courses taken in this Department, but to a very limited extent, courses taken in other departments or at other institutions may be counted as part of this requirement. These courses should provide depth in the student's probable research area.

In addition, coursework is required in two minor areas. This is a College of Engineering requirement, which specifies that "two or three courses (of advanced undergraduate or graduate level) typically represent a minimum program for a minor." The loose wording reflects the diverse needs of the College. In the IEOR Department, each minor must consist of six units at the graduate level, at least three of which must be taken for a letter grade. A minor may serve either to strengthen theoretical foundations (e.g. measure-theoretic probability theory) or as an area of application (e.g. transportation). At most one course of one minor can be a course from within the IEOR Department, as long as this course is distinct from the major. Both minors should be selected to strengthen the student's background in his or her research area, and subject to the approval of the Head Graduate Advisor. Graduate courses at other institutions may make up part of a minor if the subject matter is appropriate.

The Thesis Adviser, once known, should be consulted about all matters regarding the program of study.

#### **7.4 The Qualifying Examination**

The Qualifying Examination is a written and oral examination administered by four faculty members. Three of these faculty members are required to be IEOR faculty members and the fourth faculty member must be from another department with expertise in one of the student's minor areas of study. Students are expected to take the Qualifying Examination within three semesters after passing the Doctoral Entrance Exam. Priority in department funding (especially NRTs) will be given to students who have passed their Doctoral Entrance Exams and are in their 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> semesters. Although it is necessary for a student to

identify a potential research area and some potential dissertation topics in order to complete this exam, it is not necessary for the student to do a substantial amount of research in the area of the examination.

The student is required to have completed or be currently enrolled in courses that will complete at least one of the two minors at the time of the Qualifying Examination. At least one of the minors completed or being completed at the time of the Examination must consist entirely of courses from outside the department. In addition, at the time of the Qualifying Examination, the student is required to have a specific plan for completing the other minor within two semesters.

Prior to the exam, the student is required to identify a research area (broadly defined) in which he or she will be able to demonstrate expertise during the oral part of the examination. In addition, the student must be prepared to demonstrate expertise in one minor field. The objective of the exam is to assess the student's ability to demonstrate knowledge in a broad research area, and to identify potential research topics within this area.

At least six weeks prior to the approximate date of the Qualifying Examination, the student needs to begin to arrange for Graduate Division approval of the exam committee. The application form can be downloaded at [http://grad.berkeley.edu/wp-content/uploads/qe\\_application.pdf](http://grad.berkeley.edu/wp-content/uploads/qe_application.pdf). Once the date and the exam committee are decided upon, the student must also request a room in which the exam can be held. Meanwhile, the student should prepare a list of topics, called a syllabus, which will form the basis of the Exam. The syllabus should include topics from the three subject areas to be listed on the "Application for Qualifying Examination" form, i.e., equivalent to several courses, together with topics from one the minor areas.

At least one month before the exam date, the student must also prepare and submit the following documents to Head Graduate Advisor: a white Program of Study card that includes all major and minor courses taken or planned (whether or not they are included in

the syllabus), a transcript, a list of faculty members who will serve on the exam committee, a syllabus, a preliminary draft of the technical report for the exam committee, and the student's advisor's signature to approve the intended date and topics. Both the Graduate Division's "Application for Qualifying Examination" form and the Program of Study card must be approved and signed by the Head Graduate Advisor.

At least two weeks prior to the exam, the student must submit his or her Qualifying Exam Report, to the qualifying exam committee. This report should be in the form of a research proposal, and should include both a substantial survey and critical evaluation of the literature in the likely area of the dissertation, and a potential research agenda in this area. If the student has completed preliminary research in this area, it is also appropriate to include a report of this research in this document. However, preliminary results are not required, and cannot make up the bulk of the document.

The Qualifying Exam document will be reviewed by the three professors who represent the major on the student's Qualifying Examination Committee, to determine adequacy of preparation for the research area. For students who follow these guidelines and the recommendations of the Graduate Adviser and Thesis Adviser, this usually results in quick approval. However, if preparation is judged to be inadequate, they may recommend additional coursework and postponement of this Examination.

In many departments, including IEOR, it has been the practice for students to schedule their own Qualifying Examinations. This exam is to be scheduled for three hours, at a time when all Committee members can attend.

The oral portion of the Qualifying Examination has two parts. In the first part, the student presents a 45-minute talk based on his or her Qualifying Examination Report. The Committee will ask questions pertaining to the report and presentation at this time. During the second part of the oral examination, the committee will ask more general questions to determine the

student's level of expertise in the broadly defined research area specified by the student (and described in the syllabus). During this time, the outside committee member will also ask questions about one of the student's minor areas.

If the student's performance is judged to be unsatisfactory, the Committee may recommend reexamination, possibly after additional preparation has been completed. If the reasons for the unsatisfactory performance are judged to be major and fundamental, the Committee may recommend that a second attempt be denied.

### **7.5 Advancement to Candidacy**

After passing the Qualifying Examination, the student should file an application for Advancement to Candidacy, which sets up a three-person Guidance Committee for the Dissertation. The application form can be found in your [CalCentral](#). Once this is approved, the student is eligible for reduced fees. After advancing to candidacy, the student is expected to spend full time doing research on his or her dissertation, and on related teaching tasks.

### **7.6 Dissertation Workshops and Dissertation Defense Workshop**

At least once a year after passing the Qualifying Examination, the student is required to hold a Dissertation Workshop. Each Dissertation Workshop has two primary objectives: (1) to provide the Department an opportunity to review the progress of students toward completing their Doctoral Dissertation and (2) to facilitate interaction between the student and the Dissertation Committee in order to provide the basis for useful and consistent guidance. While the Dissertation Committee is primarily responsible for providing guidance, feedback from other faculty and from students is sought as well.

During the Workshop, the candidate is expected to present a prospective of, and results from, the dissertation research. Dissertation Advisers should advise students about the appropriate time for the Workshops. However, initiation of the Workshops is the student's responsibility. The student needs to notify the Department at least one month in advance of the desired

Workshop date, and coordinate this date with the Dissertation Committee. At least two weeks prior to each Workshop, the student shall distribute to the Dissertation Committee a report called the Dissertation Prospectus. Announcement of the Workshop will be made through all the channels used to announce Departmental Seminars.

Each Workshop is divided into two parts. The first part is devoted to a public presentation by the student and subsequent discussion. This part is conducted as a seminar and is open to all faculty and students. Graduate students and faculty who have research interests that relate to the Workshop are encouraged to attend; this may be their best opportunity to provide constructive feedback to the candidate. In addition, graduate students who have not yet reached this stage often find it valuable to participate in others' workshop. The Dissertation Committee moderates the presentation and discussion, controls the asking of questions by the audience, and calls an end to the first part of the Workshop.

In the second part of the Workshop, which immediately follows the public presentation, the Dissertation Committee and other interested faculty members will reconvene in private with the candidate for the purpose of giving more feedback and specific guidelines for continuing research. At this time, the Committee may decide that the candidate's progress is unsatisfactory. Should the Committee reach this conclusion, it will be reported in writing, with proper justification, to the candidate and the Department Chairman. The committee may require an additional workshop sooner than one year after the unsatisfactory one. Recurrent failure to present a satisfactory Workshop may result in disqualification of the student and termination of Doctoral Candidacy.

Once the candidate has completed his or her research and completely written the thesis, a Dissertation Defense Workshop must be scheduled and held. A completed copy of the thesis must be distributed to the committee at least two weeks before this final workshop. This workshop will follow the same format as other workshops. The committee will inform the

candidate about any remaining problems or issues with the thesis. If the committee has serious issues with the thesis, they may require an additional defense workshop.



## CHAPTER 8: FILING FEE

### 8.1 General Information

The Filing Fee is a reduced fee (one-half of the University Registration fee) for doctoral students who have completed all requirements for the degree except for filing the dissertation (Plan A and B) and presenting the Final Defense (Plan A). It is also available to master's students with no requirements remaining except for filing the thesis (Plan I) or completing the final report and presentation (Plan II). The Filing Fee is not a form of registration nor is it equivalent to registration. If students wish to use university services that are supported by registration fees, they must pay those fees. Filing Fee is available for the Fall and Spring semesters only.

**Duration of the Filing Fee:** The Filing Fee applies for the length of the semester for which Filing Fee status has been approved, up to the last working day of the term, which is the deadline for filing a thesis or dissertation.

**Eligibility requirements for the Filing Fee:** To use the Filing Fee in a Fall semester, the student must have been registered in the previous Spring or Summer. Summer Sessions' enrollment must be for a minimum of three units. To use the Filing Fee in Spring, the student must have been registered in the previous Fall. Filing Fee status is not available for Summer Sessions. However, students are permitted to file a thesis or dissertation while registered for Summer Sessions. Please note that a letter of support from the Head Graduate Adviser must accompany all Filing Fee applications.

**How to apply for the Filing Fee:** Students must apply for the Filing Fee by the end of the first week of classes of the semester in which they intend to file. Students complete the Filing Fee Application available in [CalCentral](#). *Please note that approval from the IEOR Head Graduate Advisor is required.* Students are billed the Filing Fee on their [CalCentral](#). A degree cannot be awarded until the Filing Fee is paid.

**Limitations on Filing Fee status:** The Filing Fee may be used only once during a student's career. However, students who used the Filing Fee to file for a master's degree will be permitted to apply for the Filing Fee for the doctoral degree.

If a student does not complete the final degree requirements (filing the dissertation or thesis, or passing the final comprehensive exam) during the semester for which the Filing Fee is approved, the student must be readmitted and pay regular registration fees during the semester in which the requirements are completed. Readmission procedures can be found at <http://grad.berkeley.edu/policy/registration-and-exchange-programs-policy/#d19-readmission-and-re-enrollment>.

**Filing Fee status and academic student appointments:** Students with academic appointments for which registration is required are not eligible for Filing Fee status. To hold an appointment, students must be appropriately registered and enrolled in at least 12 units unless advanced to doctoral candidacy.

**Filing Fee status and international students:** To avoid visa problems with the U.S. Immigration and Customs Enforcement, international students must contact the [Berkeley International Office](#) (BIO) before the beginning of the semester during which they plan to apply for Filing Fee. Filing fee status can satisfy the SEVIS requirement for international students only if the student has obtained the signature of the BIO student adviser located at 2299 Piedmont Avenue.

**Health insurance for students on Filing Fee:** Domestic students may purchase Student Health Insurance Plan (SHIP) coverage for the semester they are on approved filing fee status if they have not already purchased SHIP during a period of withdrawal beyond one semester. University Health Services allows the purchase of SHIP if a student is in a non-registered status for two semesters only, which pertains to both Filing Fee and withdrawal. For eligibility information and enrollment details, please refer <https://uhs.berkeley.edu/insurance/voluntary-students/ship-non-registered-students>.

### **Summarization of Key Issues:**

- Filing Fee may be used once for MS and once for PhD
- Students must be Advanced to Candidacy for either the MS or PhD degree to be eligible
- Students may not take classes
- Students lose all UC Berkeley Building Access
- Students must pay for SHIP, RSF, and library card if they want to use these resources
- Students may not hold GSR or GSI appointment, but can hold a Reader appointment
- While on Filing Fee, students may not take the Entrance Exam or Qualifying Exam
- Students may graduate while on Filing Fee
- Costs one-half of the University Registration Fee

*This information was taken from The Graduate Guide to Policy:*

<http://grad.berkeley.edu/policy/registration-and-exchange-programs-policy/#d2-filing-fee>.

### **8.2 Application**

1. Apply for Filing Fee by the departmental deadline in [CalCentral](#).
2. Approval from the IEOR Head Faculty Graduate Adviser is required.

If Filing Fee is approved

- You will be charged one-half of the University Registration Fee through CalCentral.
- Degree cannot be awarded until the Filing Fee is paid.

### **8.3 Readmission Procedure**

To apply for readmission after being on Filing Fee status, a student should submit the [Application for Readmission](#) and the [Statement of Legal Residence](#) for the Head Graduate Advisor's approval and pay the application fee. Current fees are listed on the application form. The readmission deadline is April 15<sup>th</sup> for the following Fall semester and November 1<sup>st</sup> for the following Spring semester.

It is important for students to note that our Department is not obliged to readmit a student who has withdrawn for any reason. Readmission is recommended at the judgment of the Department, which assesses the strength of the student's academic record in weighing its approval.

## CHAPTER 9: CALIFORNIA RESIDENCY

For tuition purposes, U.S. citizens or permanent residents who are not residents of California may be able to establish California residency to be effective in one year. Please note that international students cannot become residents unless they become U.S. citizens or [permanent residents](#).

To become a California resident for tuition purposes, you must show that you have lived in California and established the intent to make California your permanent home for more than one year before the first day of classes in the semester for which you seek California resident status. You must begin to document your presence in the state as soon as you arrive. Be sure to:

1. Obtain a driver's license or a California Identification Card (if you have never had an out-of-state driver's license) within ten days of settling in California. You must have a valid California driver's license to drive a car, motorcycle, or moped in the state. You can obtain a license at any of the local Department of Motor Vehicles (DMV) offices in nearby.

If you have a driver's license from another state, you will be required to pass a written test of California vehicle laws, pass an eye exam and provide a certified copy of your birth certificate. A driving test is required if you do not have a valid license from another state or if you plan to operate a motorcycle. The DMV handbook is located at <http://www.dmv.ca.gov/portal/dmv/detail/pubs/pubs>.

2. Register your vehicle in the state of California within 20 days of settling in California. Vehicles are registered at the local DMV office.
3. Open a local bank account as soon as possible and close all non-California bank accounts. Retain official documents showing the opening and closing of your accounts.

4. Register to vote in California elections. You can register to vote either online or by filling up the Voter Registration form (postage-paid). You should receive verification from the County Registrar within four weeks of submitting your application. If you do not receive confirmation of your voter's registration, you should immediately contact your County's Registrar of Voters.
5. Use your California address as your permanent address. Do not list your parents or any other out-of-state address as a permanent address on any University form or other legal documents.
6. Remain in California when school is not in session. Some travel allotted for purposes of research, fieldwork, or a fellowship may not necessarily jeopardize your resident classification if the absence is part of a regular requirement for your degree program or fellowship. Contact the Residence Affairs Unit at <http://registrar.berkeley.edu/about> for more information regarding any absences outside California.
7. Financial independence is another factor considered when determining your eligibility for classification as a California resident for tuition purposes. For Fall classification, you are presumed by law to be financial independent if you are at least 24 years of age by December 31. If you will not be 24 years of age by this date, then you must show that you are not claimed as an income tax deduction by your parents or any other individual for the next tax year.

Financial independence is not a factor in determining residence for graduate students who are employed as GSI or GSR for a minimum of 49% time or awarded the equivalent in University-administered funds for the term in which resident classification is sought.

8. Your physical presence in California must be demonstrated during nonacademic periods. You should keep all dated material that proves your presence in the state, such as airline

tickets, paycheck stubs from work, credit card receipts, and bank and credit card statements showing ATM, credit card, and debit card transactions. Students with joint accounts should consult with the Residence Affairs Unit. The credit card receipts need not be signature copies. The foregoing items are primary indicators of physical presence and will be weighted heavily in determining your status. Items such as copies of lease agreements, rent or utility checks, etc. are much lesser indicators of physical presence and are not acceptable alone.

9. Your intent will be questioned if you are absent from California for more than 21 total days during the period in which you are establishing resident status for tuition purposes. Graduate students who are planning to travel outside California for more than 21 total days during non-academic periods should visit the Residency Affairs Unit at 120 Sproul Hall to seek advising prior to filing for classification and leaving the state.

**Note:** This summary is not a complete explanation of the law regarding California residence. Changes may be made in the residence requirements between this publication date and the relevant residence determination date.

For more details regarding Residency, please visit  
<http://registrar.berkeley.edu/tuition-fees-residency>.

## CHAPTER 10: FINANCIAL SUPPORT

### 10.1 Overview

Numerous programs provide ways you can cut the cost of graduate school. These programs include fellowships, loans, Graduate Student Instructor appointments, Graduate Student Researcher appointments, reader appointments, and even subsidized housing and childcare. Some programs are merit-based and administered through the Graduate Division Fellowship Office. Others are need-based and administered through the Financial Aid Office. The Department also administers additional funding sources. By tapping these and other resources you can plan a program of financial support.

If you are not a resident of California, you will need to know the current requirements on establishing [California residency](#). While all out-of-state students are required to have three years of financial independence in California before being eligible to reclassify for lower registration fees, in most cases, graduate students can qualify for California residency by their second year of graduate school, thereby significantly reducing their fees.

Students who are not U.S. citizens or permanent residents cannot establish California residency and should expect to pay nonresident tuition each semester. Doctoral candidates will be eligible for a Nonresident Tuition waiver for up to three (3) years after Advancement to Candidacy.

### 10.2 GSI Appointments

GSIs are appointed to various courses based upon class enrollment. Appointments which are made at the 25% – 50% time (10 – 20 hours per week) will pay your University Registration Fee, Educational Fee and Health Insurance Fee as well as provide a monthly stipend.

GSIs are responsible for various aspects of course instruction. GSIs hold regular office hours and may also be asked to proctor exams, make solution sets, and grade homework problems. Larger classes have Readers who help the GSI with grading homework.



GSI's are paid automatically each month after their appointment has been submitted to the hiring unit. The current GSI Salary Scale can be found at <http://hr.berkeley.edu/labor/contracts/BX/current-rates>.

To apply for a GSI or Reader position, please visit <https://willow.coe.berkeley.edu/PHP/gsiapp/menu.php?dept=ieor>.

### **10.3 Reader Appointments**

Appointees to the Reader title are employed to render diverse services as course assistants, which will normally include the grading of student papers and examinations. Subject to assignment by the department, duties might also include attendance at lectures, office hours, consultation with the instructor, and other course-related duties. Readers may not perform teaching duties.

To apply for a GSI or Reader position, please visit <https://willow.coe.berkeley.edu/PHP/gsiapp/menu.php?dept=ieor>.

### **10.4 GSR Appointments**

GSRs are supported to do research work that fulfills part of their degree requirements for the MS and PhD degrees.

The duties of a GSR vary according to who your research advisor is and the chosen field of study. Some research advisors will give complete instructions with lots of detail about what they want; others may only give a general direction. In some cases, students may spend their first year developing presentations from coursework or from research literature and will only begin hands-on work after they have gained considerable background. In experimental work, GSRs may become more involved in the research projects sooner.

Most GSRs are paid from faculty grants. GSRs who work at least 45% for the entire semester are entitled to have their Student Health Insurance Plan, Fees, and if applicable, the Nonresident Tuition paid in full.

Effective Fall 2014, the normal salary steps for students in our department are the following:

- All students prior to passing IEOR PhD Entrance Exam and all MS students: Step IV
- After passing IEOR PhD Entrance Exam: Step V
- After passing IEOR PhD Qualifying Exam: Step VI

The current GSR salary scale can be found at

<https://apo.berkeley.edu/compensation/2017-18-academic-salary-scales>.

If you are a GSR in the IEOR Department, most employment forms are processed through the Human Resources Team in ERSO. Your hiring faculty will direct you to the hiring unit where you will complete the process.

For more information about GSI, Reader, and GSR appointments, please see

<http://grad.berkeley.edu/financial/graduate-student-employment/guide/>.

## **CHAPTER 11: GRADUATE APPEALS PROCEDURE**

### **11.1 Purpose and Scope**

The purpose of this procedure is to afford graduate students in the Department of IEOR an opportunity to resolve conflicts or issues regarding dismissal from graduate standing, placement on probationary status, denial of re-admission, and other administrative or academic decisions that terminate or otherwise impede progress toward academic or professional degree goals.

The scope of this procedure is limited to the matters listed above and excludes complaints regarding denial of admission, student records, course grades, student employment, student discipline, and auxiliary student services such as housing, child care, etc. This procedure may not be used for complaints regarding actions based solely on faculty evaluation of the academic qualification of a student's performance or evaluation of a student's appropriate academic progress unless the complaint alleges that the actions may have been influenced by non-academic criteria.

### **11.2 Informal Resolution Procedures**

A student may pursue informal resolution of a complaint by scheduling a meeting with the Head Graduate Advisor to discuss the issue and explore possible avenues of resolution. If informal resolution is pursued, it must be initiated and should be completed within 30 days. At any point in this process, if a satisfactory solution cannot be reached, the student may initiate formal resolution by putting the complaint in writing.

### **11.3 Formal Resolution Procedures**

A formal appeal must be a written statement including information regarding the action being complained, the date it occurred, the grounds upon which the appeal is based, and the relief requested. The appeal must be based on one or more of the following grounds:

1. Procedural error or violation of official policy by the academic or administrative personnel.
2. Judgments improperly based upon non-academic criteria, including but not limited to: discrimination or harassment on the basis of gender, race, nationality, age, religion, sexual orientation, or disability.
3. Specific mitigating circumstances beyond the student's control not properly taken into account in a decision affecting the student's academic program.

A formal appeal must be received by the Head Graduate Advisor within 30 days from the time the student knew or could reasonably be expected to have known of the action that is the subject of the appeal. The Department should complete its investigation and notify the student of the outcome of the appeal within 60 days of the date received.

The time frame for filing an appeal may be extended by the Department if the student has been involved in continuing efforts toward informal resolution, and the informal resolution process was initiated within 30 days of the time the student know or could reasonably be expected to have known of the action that is the subject of the appeal. All time frames referred to in the procedure refer to calendar days. Summer and inter-semester recesses are not included within these time frames.

Upon the receipt of a formal appeal, the Head Graduate Advisor will assign an individual to investigate the issue and make a recommendation to the Head Graduate Advisor. Generally, the investigation will include an interview with the complainant, review of any relevant written materials, and an effort to obtain information from available witnesses (e.g., interviews or written statements or documents). The Head Graduate Advisor will notify the student in writing of the outcome of the appeal. An appeal under the procedure satisfies the requirement of a unit level resolution process pursuant to the Graduate Appeals Procedure.

#### **11.4 Appeal to the Graduate Division**

If the student is not satisfied with the outcome of the appeal under the Department's procedure, he or she may bring the case to the Graduate Division. The formal appeal must be received by the Office of the Dean of the Graduate Division (424 Sproul Hall) within 15 days of the date of the written notification of the result of the unit level procedure. The form can be found at <http://grad.berkeley.edu/wp-content/uploads/gradappeal.pdf>.

If the appeal is about an action taken by the Head Graduate Advisor, the complainant may elect to take the case directly to the Department Chair. If the student is still not satisfied with the outcome, the student may take the case to the Graduate Division. Such appeal must be received by the Office of the Dean of the Graduate Division.

### **11.5 Complaints Involving Discrimination**

If the appeal involves allegations of discrimination or harassment on the basis of gender, race, nationality, age, religion, sexual orientation, or disability, the Department should consult the appropriate campus compliance officers prior to commencing informal or formal resolution procedures. The name, telephone number, and address of these individuals are listed in various campus publications and may be obtained from the Office of the Dean of the Graduate Division at (510) 642-5472 or the Academic Compliance Office at (510) 642-2795.

## **CHAPTER 12: DEADLINES**

### **Graduate Division Deadlines**

Graduate Division Deadlines can be found at

<http://grad.berkeley.edu/academic-progress/deadlines/>. Please note that most forms associated with these deadlines must be provided to the IEOR Student Services Office in advance for processing and submitting to the Graduate Division.

### **Graduate Fellowship Deadlines**

Graduate Division Fellowship Deadlines can be found at

<http://grad.berkeley.edu/financial/fellowships/>.

## **CHAPTER 13: DEPARTMENT AND CAMPUS SERVICES**

### **13.1 Department Services**

#### ***13.1.1 Copy Services***

Students may use the copy machine at 4106 Etcheverry only for course support or research purposes. Please request your account number from the Main Office at 4141 Etcheverry.

### **13.2 Campus Services**

#### ***13.2.1 Disabled Students' Program***

The campus offers many different resources for graduate students with disabilities. The purpose of an academic accommodation is to offer the graduate student an equal opportunity to meet the Department's academic standards and requirements.

The Disabled Students' Program at <http://dsp.berkeley.edu> serves graduate students with disabilities (who complete the process for establishing eligibility) by authorizing academic accommodations.

#### ***13.2.2 Cal 1 Card***

All students must have their photo taken for your Cal 1 Card (student ID card). The Cal 1 Card is the official student identification. It is important that you obtain your card as soon as possible. Your Cal 1 Card will be created on the spot using a computerized photo identification system. To obtain your card you need to bring your Letter of Acceptance, Student Identification Number, and a valid photo ID (driver's license, state ID card or passport).

Lost or damaged cards may be replaced at the Cal 1 Card Office. Please note that there may be a charge for replacement.

The Cal 1 Card Office is located at 180 Cesar Chavez Center in Lower Sproul Plaza. The Office is open Monday through Friday 9 am to 4:30 pm. For additional information please check the website at <https://cal1card.berkeley.edu>.

### **13.2.3 Library**

Your Cal 1 Card serves as your library card at all UC Berkeley libraries. It also allows you to use the library of any other campus in the UC system, as well as interlibrary borrowing (<http://www.lib.berkeley.edu/using-the-libraries/interlibrary-loan-borrowing>). You are eligible for free borrowing privileges from the Stanford University Libraries and the University of Texas, Austin through the Research Library Cooperative Program (<http://www.lib.berkeley.edu/using-the-libraries/interlibrary-loan-rlcp>).

### **Kresge Library (The Engineering Library)**

The services and collection of the Kresge Engineering Library support the research and teaching programs of the College of Engineering. The library is located in 110 Bechtel Engineering Center.

- The library's collection includes more than 250,000 volumes in all areas of engineering, except for chemical engineering.
- The library also subscribes to more than 1,200 print and 2,400 electronic journals.
- The library provides access to all the major engineering article databases, as well as a substantial number of online reference materials and monographs.
- The library also houses a large collection of technical reports of federally sponsored research, particularly reports from NASA, DOE, and the EPA.

For more information, services and to learn how to use to library, please visit <http://www.lib.berkeley.edu/libraries/engineering-library>.

### **13.2.4 Sports and Exercise**

The campus Recreational Sports Facility (RSF) includes swimming pool, racquetball/handball courts, weight room, cardiovascular machines, basketball/volleyball/badminton courts, fitness



classes and more. Once you obtain your Cal 1 Card, you can use the RSF free of charge. CalAerobics, CalFIT classes and one-on-one personal training are available at special student rates. Spouses of UC Berkeley graduate students can buy a pass to the RSF at a special rate. For more information, visit <https://recsports.berkeley.edu/rsf>.

### ***13.2.5 Campus Safety Services***

The campus provides a number of safety services for both students and staff on campus such as BearWALK, Owl Service and WarnME. For details and guidelines, please see <http://ucpd.berkeley.edu>.

### ***13.2.6 Student Housing***

For information about student housing options, please see <http://housing2.berkeley.edu>.

### ***13.2.7 Parking and Transportation Office***

Off-street parking near campus for students is severely limited and on-street parking in the surrounding area is restricted to two hours for nonresidents of the area. The best plan is to walk, bike, or use public transportations.

Bike racks outside most buildings make biking to campus a convenient and inexpensive transportation solution. Be sure to always lock your bike securely and register it with the UC Berkeley Police Department. For more information, please see <http://pt.berkeley.edu>.

### ***13.2.8 AC Transit EasyPass***

Your AC Transit Student EasyPass is electronically loaded onto the Clipper card. Registered Students pick up your first Student EasyPass from the Cal 1 Office and take advantage of unlimited rides on AC Transit buses and Bear Transit Shuttle throughout the semester (except Bear Transit RFS line requires an additional fee). The card also allows students to load cash value to pay for BART rides and other transit passes in the Bay Area (e.g. Muni, etc.).

<https://pt.berkeley.edu/transportation-options/public-transportation-passes-and-info/ac-transit-student-classpass>.

## CHAPTER 14: RESOURCES

- **Center for Student Conduct**

The Center for Student Conduct has an educational purpose in helping our community discuss and holding each other responsible for living up to the standards outlined in the Code of Student Conduct. We address behavior through a resolution process that reflects the rights and responsibilities of all parties involved. The Student Code of Conduct can be found at <http://sa.berkeley.edu/conduct>.

- **Disabled Students' Program**

The Disabled Students' Program (DSP) is committed to ensuring that all students with disabilities have equal access to educational opportunities at UC Berkeley. DSP offers a wide range of services for students with disabilities. For more information, please see <http://dsp.berkeley.edu>.

- **Division of Student Affairs**

The mission of the Division of Student Affairs includes three priorities:

- Maintain: maintain access and affordability; provide opportunities for equity and excellence.
- Service: improve and sustain cutting edge student services, making them more applicable to this generation of students.
- Engagement: foster learning and leadership development, transforming students into engaged local, national, global citizens.

Together these create the student experience and foster student success. For more information, please see <http://sa.berkeley.edu>.

- **Engineering Research Support Organization (ERSO)**

ERSO functions as a central hub, providing administration support to all research centers and departments in the College of Engineering. ERSO focuses on providing effective and efficient research administration, which allows faculty to focus on developing and growing the research enterprise rather than managing business services. ERSO will maintain a customer-oriented operation, with appropriate levels of faculty and staff oversight to support a culture of continuous improvement. For more information, please see <http://www.erso.berkeley.edu/erso>.

- **Graduate Division Resources**

For more information, please visit <http://grad.berkeley.edu/students>.

- **Graduate Professional Development**

For more information, please visit

<http://grad.berkeley.edu/professional-development/about-gpd>.

- **Graduate Student Instructor (GSI) and Reader Information**

For more information, please visit <http://gsi.berkeley.edu> and

<http://grad.berkeley.edu/financial/graduate-student-employment/guide>.

- **Berkeley International Office**

BIO's mission is to enhance the academic experience of international students and scholars by providing the highest levels of knowledge and expertise in advising, immigration services, advocacy, and programming to the UC Berkeley campus community. For more information, please see <http://internationaloffice.berkeley.edu>.

- **Legal Services**

The Attorney for Students advises currently registered students regarding their legal questions, rights, and obligations. A student legal consultation might include, but is not limited to, one of the followings: a landlord-tenant dispute, a citation for a criminal

infraction or misdemeanor, filing an action in California Small Claims Court, questions related to credit card debt, issues arising from a car accident or auto insurance, or questions about family law. Please note that Student Legal Services provides counsel and guidance only, and does not represent or advocate for individual students with regard to their potential legal claims or disputes. If your situation requires legal representation, the Attorney for Students will help refer you to appropriate resources. Student Legal Services counsel and guidance is limited to California law only. For more information, please see <http://sa.berkeley.edu/legal>.

- **Office of the Registrar**

Services from the Office of the Registrar support every currently registered student at UC Berkeley as well as all faculty and staff members who interact with those students. Specifically, they are responsible for class enrollment and registration, fee assessment, verifying graduation, diplomas and transcripts, preservation of student academic records and protection of their privacy, maintenance of the schedule of classes, reservations of classrooms, residency determinations, and assistance for special populations such as veterans. For more information, please see <http://registrar.berkeley.edu>.

- **Ombuds Office for Students and Postdoctoral Appointees**

The Ombuds Office can assist students in sorting through campus-related conflicts or concerns. The Ombudsperson will listen to your concerns, serve as a sounding board, discuss your options, and help you get a new perspective and determine the next steps to take. The Office is strictly confidential. The only exception to this confidentiality is where there appears to be imminent risk of serious harm or danger. For more information, please see <http://sa.berkeley.edu/ombuds>.

- **Parents Network**

Berkeley Parents Network is a parent-to-parent network for the community of parents in the San Francisco Bay Area. It contains recommendations and advice contributed by the members. For more information, please see <https://www.berkeleyparentsnetwork.org>.

- **Schedule of Classes**

The Schedule of Classes can be found at <http://schedule.berkeley.edu>.

- **Tuition and Fees**

For a list of current fees, please visit <http://grad.berkeley.edu/admissions/costs-fees>.

- **University Health Services (UHS)**

UHS provides comprehensive medical, mental health, and health promotion services to students. Visiting scholars and spouses/domestic partners of Berkeley students may also use UHS on a fee-for-service basis. For more information, please see <https://uhs.berkeley.edu>.

## CHAPTER 15: STUDENT LIFE

### 15.1 Student Groups

UC Berkeley hosts hundreds of student organizations which connect students with a stronger sense of community while providing opportunities for students to engage in organizational and leadership development. Many student organizations serve as outlets for self-expression and sharing of talents.

The mission of the Graduate Assembly is to improve the lives of graduate students and to foster a vibrant, inclusive graduate student community. For more information, please visit

<https://ga.berkeley.edu>.

For a complete list of student groups within the College of Engineering, please see

<http://engineering.berkeley.edu/student-life/teams-and-organizations>.

For a complete list of campus-wide student groups, please see

<http://www.berkeley.edu/campus-life/student-organizations>.

### 15.2 Resources of Interest

- **UC Berkeley Campus Life**

For more information, please see <http://www.berkeley.edu/campus-life>.

- **Berkeley Recreational Sports**

Berkeley Recreational Sports is dedicated to enhancing the knowledge, wellness, fitness, personal skills, and quality of life for students, faculty, staff, and the community. By providing facilities, programs, and activities, Berkeley Recreational Sports teaches life-long fitness skills, leadership, management, and interpersonal skills. It also helps to balance the stress of studying and working in a rigorous academic environment.

For more information, please see <https://recsports.berkeley.edu>.

- **Campus Safety**

The UC Police Department website contains information about campus safety, please visit

<http://ucpd.berkeley.edu>.

- **Parking and Transportation**

The Berkeley Parking and Transportation Department provides a full range of parking and

transportation services, please visit <http://pt.berkeley.edu>.

- **Publications**

For Graduate Division's publications, please visit

<http://grad.berkeley.edu/about-us/publications>.



## CHAPTER 16: STUDENT PARENTS

- **Berkeley Parents Network**

Berkeley Parents Network is a parent-to-parent network for the community of parents in the San Francisco Bay Area. It contains recommendations and advice contributed by the members. For more information, please see

<https://www.berkeleyparentsnetwork.org>.

- **Childcare Reimbursement Program**

For more information, please visit

<http://hr.berkeley.edu/labor/contracts/BX/childcare-reimbursement-program>.

- **Early Childhood Education Program**

For more information, please visit <http://ece.berkeley.edu>.

- **Family Student Housing**

For more information, please visit <http://housing2.berkeley.edu/universityvillage>.

- **Financial Support**

Learn more about campus resources that aid student families in the search for affordable housing, child care, health insurance, and more.

For more information, please visit <http://grad.berkeley.edu/financial/families>.

- **Health Insurance for Dependents of Students**

For more information, please visit

<https://uhs.berkeley.edu/insurance/insurance-dependents>.

- **Petition for Childbirth Accommodation Funding for Women Doctoral Students**

Please download the form at

[http://grad.berkeley.edu/wp-content/uploads/childbirth\\_accommodation\\_form.pdf](http://grad.berkeley.edu/wp-content/uploads/childbirth_accommodation_form.pdf).

- **Pregnancy Disability Leave**

For more information, please visit <http://hr.berkeley.edu/policies/leaves/pregnancy>.

- **Student Parent Center**

For more information, please visit <http://studentparents.berkeley.edu>.



