

UNIVERSITY OF CALIFORNIA AT BERKELEY  
DEGREE REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE  
DEPARTMENT OF INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH  
December 2007

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

Students are required to complete 24 semester units of coursework, 12 units of which must be graduate courses in the major taken for a letter grade. IEOR298 units do not count towards this requirement.

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

1. Optimization: 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

**Master of Science Tracks:**

A Master of Science 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, but may instead, customize their selections. All Master of Science students, whether they choose a track or a customized program, must complete the requirements of the Master of Science degree listed above. Current tracks are listed below. They are revised periodically as course offerings change.

**Logistics Track**

See requirements for Certificate Program in Logistics.

**Management of Technology Track**

See requirements for Management of Technology Certificate Program.

**Operations Research Track**

IEOR 262A

IEOR 263A

2 of: IEOR 221, 261, 262B, 263B, 264, 266, 267, 268, 269

**Production and Service Operations Track**

Two of the following: IEOR 250, IEOR 251, IEOR 254

One of the following: IEOR 150, 151, 153 \*

One of IEOR 130, 131 or 165, or another course from the preceding category. \*

\*Students may substitute another related course if they have prior equivalent coursework.

### **Simulation and Decision Technology Track**

IEOR115 or IEOR215

IEOR261 or IEOR131

2 of: IEOR166, 262A, BA147, 148

### **The Comprehensive Exam or Project:**

In addition to course and waiver exam requirements, students are required to complete one of two options: a comprehensive exam or a Master's project and oral presentation of this project. The structure of the comprehensive exam may vary from year to year, but is designed so that students whose curriculum includes 12 units of graduate courses in the major and satisfies the group distribution listed above should be prepared to take the exam. At the current time, the comprehensive exam 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:**

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.

### **Master of Science Plan I (Thesis):**

Students may complete the requirements by writing a thesis, rather than taking a Comprehensive Examination. The course requirements under the thesis option are the same as under the Comprehensive option. Under the thesis option, the minimum unit requirement of regular course work is 20 units, not including the thesis. A committee of three professors, including one from outside the IEOR Department, will be formed to guide and approve the thesis.

### **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 Ph.D. should apply to enter the MS/PhD 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 Ph.D.