IEOR 151 – Service Operations Design and Analysis
Fall 2013

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Lectures: MW 12-1P, in 3108 Etcheverry

Labs: F 12-1P, in 3108 Etcheverry

Website: http://ieor.berkeley.edu/~ieor151/

Textbook: *Service Science*, by Mark Daskin
http://onlinelibrary.wiley.com/book/10.1002/9780470877876

Prerequisites: IEOR 161, IEOR 162, and a course in statistics

Grading: Homeworks (20%); computer labs attendance and participation (10%); midterm (30%); final exam (40%)

Midterm: Wednesday, October 23, 2013 12-1P

Final Exam: Friday, December 20, 2013 11:30-2:30P

Description: This course is concerned with improving processes and designing facilities for service businesses such as banks, health care organizations, telephone call centers, restaurants, and transportation providers. Major topics in the course include design of service processes, layout and location of service facilities, demand forecasting, demand management, employee scheduling, service quality management, and capacity planning.

Outline: Specific topics that will be covered include:

- Service Quality Management – Review of probability; hypothesis testing; multiple testing (and multiple comparisons); analysis of variance (about 3 weeks)
- Resource Allocation and Game Theory – Review of optimization; matching games (e.g., hospitals/residents problem, kidney exchanges); adverse selection models; moral hazard models (about 3 weeks)
- Location Planning and Routing – p-median problem; p-center problem; set covering location model; traveling salesman problem (about 3 weeks)
- Workforce Scheduling – Service queueing models; Little's law; square-root staffing law; long-term planning (about 3 weeks)