IEOR 151 – Service Operations Design and Analysis
Fall 2014

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Lectures: MW 12-1P, in 3106 Etcheverry

Labs: F 12-1P, in 3106 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 (3 unexcused absences are allowed) and participation (10%); midterm (30%); final exam (40%)

Midterm: Wednesday, October 22, 2014 12-1P

Final Exam: Friday, December 19, 2014 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; risk in hypothesis testing; multiple testing (and multiple comparisons) (about 3 weeks)
- Resource Allocation and Game Theory – Review of optimization; matching markets (e.g., 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; vehicle routing (about 3 weeks)
- Scheduling and Inventory – Service queueing models; Little's law; square-root staffing law; long-term planning; newsvendor model; pricing perishables (about 3 weeks)