

B8107: Service Operations Spring 2014

Instructor

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Course Description

The service sector accounts for approximately 80% of GDP and employment in the US. As such, it is imperative to develop efficient and effective operations of services. The management of service operations can require quite different constraints and objectives than manufacturing operations. This course examines both traditional and new approaches for achieving operational competitiveness in service businesses. Major service sectors such as health care, repair / technical support services, banking and financial services, restaurants, and hotels are examined. The course addresses strategic analysis and operational decision making, with emphasis on the latter. Topics include the service concept and operations strategy, the design of effective service delivery systems, capacity management, and evaluation of service productivity. This course is intended for students interested in consulting, entrepreneurship, venture capital or general management.

Course Materials

There is a required casebook for this class. Lecture notes and supplemental material will be distributed in class.

The web page for the course can be found on CourseWorks at <https://courseworks.columbia.edu/>. We will use CourseWorks extensively, and the page will be updated frequently as the course progresses, so please check it often. Lecture notes, Excel files, announcements and supplementary materials will be posted online.

Computer Software

We will use spreadsheets at a number of points during the course to solve the models that we develop. In particular, we will use Microsoft Excel. We will also use the Excel *Solver* to run models. If you do not have solver installed or are unsure, please see Computer Services.

Course Work

The components of the course grade are as follows:

Component	Due	Weight
Class Participation	Ongoing	20%
Homework and Case write ups	Ongoing	15%
Midterm (in Class)	February 25	20%
Group Project	April 22	20%
Final Exam	May 2 (tentative)	25%

Class Participation

20% of the final grade will be assigned on the basis of class participation and individual professional conduct. I expect all class participants to arrive to class on-time. Every conceivable effort should be made to avoid absences, late arrivals or early departures. In cases when these are unavoidable, they need to be communicated to me in advance. You are expected to do the pre-assigned readings and to be prepared to discuss the readings in class. While you are welcome, and encouraged, to prepare for class with a study group, each and every person should be prepared to make individual contributions to the class discussion. Part of the class participation grade reflects my qualitative judgment concerning your effective contribution to class discussions and dynamics. You should be attentive to the class discussion. Your comments should respond to and “push forward” the discussion in class.

Homework and Case write ups

There will be 13 case readings/assignments to prepare for class. You are expected to read and be prepared to discuss all cases in class. Questions associated with each case will be posted on CourseWorks and you are expected to be prepared to discuss answers to these questions. Your preparation and discussion of these cases will be a major factor in determining your class participation grade. Additionally, you will need to prepare 8 case write ups. These should be done individually, though you can discuss your write up with your classmates. You can select from any of the 13 required cases. Four of these write ups must be for cases before the midterm and the remaining four must be for cases following the midterm. These write ups should be no more than 2 pages long and include a 1 paragraph summary of the case in addition to responses to the preparation questions posted on CourseWorks. You are expected to be prepared to discuss the cases and questions for *all cases*; you only have to formally write up 8. If you choose to submit more than 8 write ups, only to the top 8 scores will be counted. Note that these write ups will be graded on a 1-3 scale.

Midterm

There will be an in class midterm on Tuesday, February 25th. This will cover the material from the first 10 sessions.

Final Exam

The final is tentatively scheduled for May 2nd. More details will be provided as the class progresses.

Project

The purpose of the Group Project is to explore a Service Operations problem to greater depth. Think of it as a self-directed assignment where you choose a topic that interests you and your group members. You don't necessarily need to use the tools learned in this course. You are also not constrained by the topics covered in the class. A good project adds to our understanding of managing services—a novel concept, an insightful solution, a tool developed and successfully used by others, a survey of industry trends. Groups are to consist of 2-3 students. Here are types of projects you can consider:

- **Service Diagnosis/Problem-Solving** - This type of project involves a specific application of methodology from class to solve (or at least gain significant insight into) a service operations problem. Examples include a DEA analysis of public schools in Philadelphia, an analysis of queues and capacity management at a major international art exposition, and analysis of service repair time and staff scheduling at Olympus's North American camera repair facility.
- **New Service Business Operations Plan** - For the entrepreneurs in the class, this is your opportunity to lay out an operations strategy and operating plan with supporting analysis for a new service business. Examples include a plan for "on-demand" emergency day-care, commercial security services, paging service, mail order florist and express gourmet dinner delivery in downtown Manhattan.
- **Methodology Study** - This is a good choice for groups that want to delve deeper into some particular methodological area covered in class. Examples include a study of forecasting methods used by selected hotels in the metro region, a critical review of yield management approaches to radio and television sales management, and a review of techniques for productivity measurement in services.
- **Industry/Company Profile** - A report which describes an industry, the key operational problems in that industry, how various firms have managed these operating problems, etc. Alternatively, the report may focus on a single firm, describing its service concept, competitive position, the main characteristics of its operations, key operational choices it has made, operational policies, etc. Past projects have included: innovations in rail transport, Boston Market's operating concept and strategy, and a profile of operations in professional minor league baseball.

A one-page status report is due in Class 14 (March 6th). Each group will make a 10-15 minute presentation in Class 23 or Class 24 (April 22nd or 24th). **All projects are due on April 22nd.** You will turn in your presentation slides and any appendices needed to explain your project. The appendix is to be used for any necessary explanations/information that you did not put into the presentation but you want me to know.

Course Schedule

Class #	Date	Topic	Cases & Assignments
1	1/21 T	Introduction to Service Operations	
2	1/23 Th	Influencing Customer Behavior *Meeting in Warren 209*	Zip Car
3	1/28 T	Concept of service factory.	Benihana of Tokyo
4	1/30 Th	Process Management : Statistical Process Control	
5	2/4 T	Lean Operations	InterMountain Health
6	2/6 Th	Quality in services	Ritz Carlton
7	2/11 T	Linear Programming	
8	2/13 Th	Data Envelopment Analysis (DEA)	
9	2/18 T	Measuring service productivity. Benchmarking productivity.	Branch Performance at Nashville National Bank
10	2/20 Th	Translating benchmarks into action	MidAtlantic exercise
11	2/25 T	Midterm	
12	2/27 Th	Regressions	
13	3/4 T	Factors influencing profit	Store 24 A
14	3/6 Th	Impact of service quality on profit	Store 24 B
15	3/25 T	Queueing Models	
16	3/27 Th	Managing waiting time in hospital operations	Emergency Department Congestion at Saintmarie University Hospital
17	4/1 T	Regression Modeling of Queueing systems	ED Delay assignment
18	4/3 Th	More Advanced Queueing Models	
19	4/8 T	Call center capacity planning	Megacard Corporation
20	4/10 Th	Newsvendor Models	
21	4/15 T	Speculative vs. Reactive Capacity	Sport Obermeyer
22	4/17 Th	Revenue management: overbooking & airline seat inventory control	American Airlines, Inc.: Revenue Management
23	4/22 T	Project Presentations	
24	4/24 Th	Project Presentations	
	5/2 F	Final	