How do airlines decide when to increase ticket prices? Should a hotel charge less per night for a long stay than a short one? Why do some software companies bundle very different products together? How should a fashion retailer decide when to start discounting clothes? Why do so many discounted rates end in “.99”? How should companies estimate future demand for their products?

These are only a small sample of the operational and pricing challenges all businesses regularly face. These challenges are often addressed individually and in isolation but, in reality, all of these decisions interact with each other. This class looks at the demand management challenges faced by companies in various industries and provides an introduction to the tools that can be used to address these challenges. Specific topics covered include (subject to change)

- Basics of price optimization,
- Static and dynamic price optimization,
- Market segmentation,
- Customized pricing,
- Non-linear pricing,
- Markdown pricing,
- Overbooking strategies,
- Consumer Choice Modeling
Prerequisites
An understanding of both probabilistic and deterministic modeling.

Class Times
Tuesdays, 1:10pm – 3:55pm
A-Term (Sep 3rd, 10th, 17th, 24th, Oct 1st, 8th): Warren 311
B-Term (Oct 29th, Nov 12th, 19th, 26th, Dec 3rd, 10th): Warren 416

Schedule
The first class is Tuesday, September 3rd, consistent with the Business School schedule

There will be no class on October 15th, October 22nd, and November 5th

Course Texts
There are no required books for the class. All material will be provided in class slides. Some of the material in the class is based on the following texts:


The following book may also be useful for reference purposes

Teacher
Professor Daniel Guetta
guetta@gsb.columbia.edu

Teacher Office Hours
See canvas.

Teaching Assistant
TBD

T.A. Office Hours
TBD

Homework
There will be two homework assignments. You may work with other classmates on these assignments, but each student has to turn in an individual solution. Keep in mind that you will not be allowed to
collaborate on the exam questions.

**Paper presentation** You will be required to study an academic paper related to the topics of this class and to present this paper in our penultimate lecture. More details will be given in our first class.

**Exams** There will be a take home midterm exam on Canvas, and a final in-class exam during our last class.

**Grading** I will calculate a grade for each student using two methods – the method that results in the *higher* percentage will be used to calculate your grade for the course:

- **Method 1**
  - Final exam 45%
  - Paper presentation 40%
  - Participation 15%

- **Method 2**
  - Final exam 30%
  - Mid-term exam 15%
  - Homeworks and cases 10%
  - Paper presentation 30%
  - Participation 15%

Each assignment will be individually curved, so that the lowest assignment in the class gets a 0, and the highest gets a 100.
## MANAGEMENT SCIENCE AND ENGINEERING  
### DEMAND AND SUPPLY ANALYTICS  

**Class Schedule (Subject to Change)**

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