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 a company balance the risk of holding too much inventory on hand and the risk of turning away customers? Does it ever make sense for retailers to lie to suppliers about how much they will need to order? Should retailers with multiple locations hold most of their inventory in a central warehouse or at the individual locations?

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 and supply 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:

- Pricing and revenue management,
- Market segmentation,
- Customized pricing,
- Non-linear pricing,
- Markdown pricing,
- Auctions,
- Overbooking strategies,
- Consumer Choice Modeling,
- Inventory-service tradeoffs,
- Safety stock allocation,
- Information sharing and contract design,
• Supply chain coordination,
• Behavioral issues, fairness, trust and altruism.

Prerequisites
A basic understanding of both probabilistic and deterministic modeling.

Class Times
Tues & Thurs 2:00-3:30 PM
Grace Dodge Hall room 363

Schedule
The first class is Tuesday, January 23, 2017, consistent with the Columbia Business School calendar.

Course Texts

The following books may also be useful for reference purposes

Teacher
Professor Daniel Guetta
guetta@cantab.net

Teacher Office
TBA

Teaching Assistant
TBA
T.A. Office Hours  
TBA

Homework  
There will be three homework assignments. You may work with other members 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. **Homework is due at the beginning of class. There is no credit for late homework.**

Case Assignments  
For classes with case assignments, each student group will turn in a **maximum** 5 page write-up describing their solutions. Students must be prepared to summarize the case and suggest a solution in class.

Exams  
There will be one midterm exam and a final exam.

Modelling project  
Every group will work on a modelling project as part of the class. The purpose of the modelling project is either to apply the modelling concepts and methods learned in the class to an real-world decision making problem based on your own work or personal experience or to carry out a more in-depth study of one of the subjects studied in the course.
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: 75%
  - Project: 15%
  - Participation: 10%

- **Method 2**
  - Final exam: 40%
  - Mid-term exam: 20%
  - Homeworks and cases: 15%
  - Project: 15%
  - Participation: 10%

Each assignment will be individually standardized and curved before weighting.