IEDA 4420: Dynamic Pricing and Revenue Optimization

Fall 2024

Instructor: Prof. Qian Liu

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Class Hours: 13: 30 -- 14:50 Wednesday, Friday

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Course Description and Objectives:

Revenue management focuses on how a firm should make price and product availability decisions across its various selling channels over time in order to maximize its revenue. Originated from the airline industry, revenue management has been shown to be successful in various industries including hospitality, manufacturing, retail, media and finance etc. This course focuses on tactical optimization of pricing and capacity allocation decisions for firms that sell perishable and/or products in limited supply under changing and uncertain market conditions. The course will review the main methodologies used in different areas and survey the pricing strategies and practices in different industries. The course will introduce quantitative models of consumer behavior and market share, and different forms of dynamic pricing and constrained capacity allocation tools. After completing the course, students should be able to identify and exploit opportunities for revenue optimization in different business contexts, and use quantitative analysis to deal with pricing and capacity allocation problems arising in revenue management systems.

Learning Outcomes:

1. Understand the basic concepts and principles in dynamic pricing and revenue management.
2. Understand different pricing strategies in revenue management practices.
3. Identity opportunities for revenue optimization of firms from various industries.

4. Apply qualitative frameworks and quantitative models to a firm's revenue optimization problem.

5. Improve the ability to use knowledge to solve practical problem skills.

Recommended Reference Book:

Robert L. Phillips, *Pricing and Revenue Optimization*, Stanford Business Books, 2015.

Assessment and Grades:

Homework	15%
Case Study and Discussion Participation	15%
Term Exam	40%
Project	30%