IE516 **Pricing and Revenue Management**

**Instructor:** Dr. Xin Chen

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**Course Website: Illini Compass2g**

**Zoom Access:** [**https://illinois.zoom.us/j/86209347491?pwd=V2ZnZVRObytoWXVsRDY3V1dIa0NxZz09**](https://illinois.zoom.us/j/86209347491?pwd=V2ZnZVRObytoWXVsRDY3V1dIa0NxZz09)

**Location: 206 TB**

**Time: 5pm-7:50pm Wednesday**

**Description:** The course focuses on the state-of-the-art in pricing optimization and revenue management research. Topics that will be covered include

* Quantity-based revenue management
* Assortment optimization
* Dynamic pricing
* Demand estimation, forecasting, and learning

The course is a mixture of lectures by the lecturer (and a guest lecturer) and paper presentations by course participants, which will be assigned later.

**Objectives:** the objectives of this course are

* to develop a familiarity with the models and techniques that have been used in revenue management research
* to develop an understanding of the most important current research topics in revenue management
* by the end of the course, you should be prepared to embark on your own research in revenue management

**Teaching Materials:** We will use the books below as textbooks (the e-books can be downloaded through the university library for free). Additional materials and papers will be supplied by the instructor.

1. Revenue Management and Pricing Analytics (2019), by Gallego and Topaloglu, Springer.
2. The Logic of Logistics: Third Edition (2014), by Simchi-Levi, Chen and Bramel, Springer.
3. Revenue management (2004), by Talluri and Van Ryzin, Kluwer Academic Publishers.

**Assignments and grading policies:** There will be approximately bi-weekly written assignments. No late homework is allowed without prior permission from the instructor. Homework write-ups must be completed alone; however, you can discuss with others on problems. If you do so, you must acknowledge the names of these colleagues as part of your write-up. Failure to do so will be considered cheating.

There will be no final exam. You will form a group with another student to finish a course project in which you analyze a revenue management problem and make a project presentation.

Your final grade will be based on:

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| Homework | 35% |
| Project | 35% |
| Participation | 30% |

**Course Outline:**

I’m not sure how quickly we will move through the material. This is a very tentative syllabus, which I will update as we progress.

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| **Week** | **Topic** |
| 1. January 19 | Introduction and Quantity-based static RM model |
| 1. January 26 | Quantity-based dynamic models I |
| 1. February 2 | Quantity-based dynamic models II |
| 1. February 9 | Quantity-based dynamic models III |
| 1. February 16 | Choice Modeling |
| 1. February 23 | Assortment optimization I |
| 1. March 2 | Assortment optimization II |
| 1. March 9 | Assortment optimization III |
| 1. March 16 | No Class: Spring break |
| 1. March 23 | Assortment optimization IV |
| 1. March 30 | Dynamic pricing models I |
| 1. April 6 | Dynamic pricing models II |
| 1. April 13 | Joint pricing and inventory control models I |
| 1. April 20 | Joint pricing and inventory control models I |
| 1. April 27 | Learning, Forecasting, Estimation and Optimization |
| 1. May 4 | Course project presentations |

\*\* subject to change