

COURSE INFORMATION

Course title:	Topics in Industrial Engineering (Revenue Management and Pricing)		
Course keywords:	Pricing, revenue management, optimization		
Course number:	406.559	Credits:	3.0
Semester:	Summer 2021	Class location:	Virtual (Online)
Section(s):		Class times:	See below
Course duration:	June 22, 2020 – Aug 2, 2021		
Class homepage:	SNU eTL < https://etl.snu.ac.kr/login.php >		

INSTRUCTOR AND TA INFORMATION

Instructor:	Tim Huh (허웅희)
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TA:	Jun Lee 이 준 (Graduate student, Industrial Engineering)
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COURSE OVERVIEW AND OBJECTIVE

Revenue management is an emerging area dealing with applying analytics tools to make decisions regarding product availability and pricing. Its goal is “selling the right product to the right customer at the right time for the right price.” Many industries use revenue management tools to maximize the return on their limited supply of products. Airlines use revenue management to decide what fare classes should remain open and what fare classes should be closed. Hotels use revenue management to choose the room rates and to determine how much to overbook. Rental car agencies use revenue management to choose which cars to use for which requests. Restaurants use revenue management to decide what portion of their tables should be reserved for walk-ins. This course focuses on analytical tools related to capacity allocation and pricing.

TEXTBOOK AND READING MATERIAL

Recommended: R.L. Phillips, *Pricing and Revenue Optimization: Second Edition*, Stanford University Press, 2021, ISBN 9781503610002

CLASS SCHEDULE (SUBJECT TO CHANGE)

Each class “day” typically consists of the following components (**unless otherwise noted**):

- Asynchronous Online Content (pre-recorded): Approximately 2 hours of study
- Synchronous Online Content (live): **1PM-2PM Korea Standard Time (KST)**

1	Tue 6/22	Introduction; Booking Controls
2	Wed 6/23	Littlewood Formula
3	Thur 6/24	Multiple Classes
4	Tue 6/29	Multiple Classes (Continued)
5	Wed 6/30	Overbooking

6	Thurs 7/1	No Shows and Cancellations
7	Tue 7/6	Multi-Product Pricing
8	Wed 7/7	Review
9	Thurs 7/8 @ 1-2:30PM	Quiz #1
10	Tue 7/13	Network Revenue Management
11	Wed 7/14	Network Revenue Management (continued)
12	Thurs 7/15	Dynamic Pricing
13	Tues 7/20	Customer Choice Models and Assortment Optimization
14	Wed 7/21	No Class – Study for Quiz
15	Thurs 7/22 @ 1-3PM	Quiz #2
16	Thur 7/29	Presentations (recording only)
17	Fri 7/30	Presentations (recording only)

PRE-REQUISITES

Students are expected to have a working knowledge of probability, optimization, and stochastic processes at the level typically covered in the second-year or third-year undergraduate courses. The students should have mathematical maturity since students will need to read and understand proofs.

GRADING POLICY

Summary

<u>Component</u>	<u>Weight</u>
Homework	15%
Quizzes	35%
Presentation	35%
Class participation	15%
Total	<u>100%</u>

Assessment Schedule

Homework #1	Fri 6/25 @ 11:59PM KST
Homework #2	Fri 7/2 @ 11:59PM KST
Quiz #1	Thur 7/8 in class
Homework #3	Fri 7/16 @ 11:59PM KST
Homework #4	Tues 7/20 @ 11:59PM KST
Quiz #2	Thurs 7/22 in class
Presentation	Wed 7/28 @ 11:59PM KST

Presentation

Students may work individually or as a group of 2 or 3. The students will make a presentation through video recording and submit a PDF version of the slides.

- Option 1 (Paper presentation). Choose a published paper after consulting with the instructor, and prepare a presentation for your class. It should be accessible to the students in the class. The contribution and model should be presented, along with sufficient details regarding methodological approaches and technical analysis.

- Option 2 (Research proposal). Choose a topic of interest related to the course topic, and prepare a research proposal. It must include motivation, literature review, methodological approach, and intended contribution.

Doctoral students are strongly encouraged to choose Option 2.

ACADEMIC INTEGRITY

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply.

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