

# The Hong Kong University of Science and Technology

## UG Course Syllabus

Online Markets

IEDA4000C

3 Credit(s)

Prerequisite: any one of:

ECON2103/2113 Microeconomics

IEDA2520 Probability for Engineers

IEDA 3230 Engineering Economics and Accounting

COMP 2711: Discrete Mathematical Tools for Computer Science

MATH 2001: Foundation of Mathematics

**Name:** Yiding Feng

**Email:** ydfeng@ust.hk

### Course Description

Online platforms and digital marketplaces, such as eBay, Airbnb, Uber, and Amazon, are reshaping industries and transforming how businesses operate and interact with consumers. This course introduces the science behind these online markets, combining key concepts from game theory, economics, machine learning, and algorithms. Students will explore how participants in these marketplaces optimize their strategies and how market designers create rules to ensure desirable outcomes. Students will engage in a mix of problem sets and short projects.

### Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Homework	20%
Project	30%
Quiz 1	15%
Quiz 2	15%
Quiz 3	20%

Grading: Homework: 20%, Project: 30%, Quiz 1: 15%, Quiz 2: 15%, Quiz 3: 20%

Homework: There are three homework assignments.

- Late homework is subject to 30% deduction as penalty, if submitted before the solution is released. No late homework is accepted after the solution is released.
- Homework can be done after discussing with your friends, but you have to write it in your own words, and should be able to explain your answers when requested. Simply copied homework is not graded.

Projects: Details will be announced later.

Exams: There are three quizzes. Each quiz has a focused coverage, format to be announced.

Quiz schedule: TBD.

### **Required Texts and Materials**

Lecture Notes, uploaded to canvas