Consumer and Producer Theory

Fall 2025, ITAM

Instructor: Xinyang Wang

- Class Hours: Wednesdays, 4 pm – 7 pm
- Class Location: PF 101
- Office Hour: by appointment
- Email Address: xinyang.wang@itam.mx
- Course website: https://www.xinyang-wang.com/cpt_f25

Course Description

This is a graduate-level course in economic theory. The principle purpose of this course is to introduce the formal language for analyzing individual behavior of economic agents. You will encounter some, if not many, models and statements you have learned before. In this course, we will focus on the *reasoning* of these classical materials. Given the time constraint, we may introduce some topics according to the interests of students and instructor.

Topics

Broadly, we will cover: 1) Review of the relevant mathematics, 2) Consumer Theory, 3) Producer Theory, 4) Decisions and Uncertainties.

Prerequisites

The formal prerequisite is intermediate microeconomics. Technically speaking, knowledge of multivariate calculus, probability, and some basic knowledge of matrix operations will be helpful. This course will be more abstract than other economic classes you have taken; you should feel comfortable with standard mathematical notation and abstract reasoning. But the main challenges of the course are grasping the economics concepts and following and creating logical arguments. These, rather than mathematics, are the areas that students find the most challenging. Students' interests will be crucial.

Grading

Presentation: 20%

Assignments: 40%

Final Exam: 40%

<u>Participation</u>: Participation and consistent attention in the course are expected. By participation, you are expected to assign attention to the course discussions, rather than working on your own stuff such as computers.

If you need to miss a meeting for any reason, please let the instructor know. Unless permitted by the instructor, more than three unexcused absences or unsatisfactory participations would result in an incomplete grade.

<u>Assignments:</u> There will be biweekly assignments by default. Each assignment will be posted by the end of Thursdays in the corresponding weeks, and are due before lectures on Wednesdays in two weeks. You are expected to assign time smoothly within the periods to complete each assignment. Some exercises may be challenging.

Rather than for evaluating purpose, the assignments should be treated as a tool to stay on track on the course materials, and should be viewed as an opportunity for students to communicate with the instructor. Thus, **collaborative work on assignments is very encouraged**, but each student should compose and submit his/her own solution independently.

<u>AI usage:</u> As marked above, you are welcomed to work with anyone, humans or machines, on the assignments and course material. But the same rule applies: you must compose your own work. Direct copying of AI output, once being detected, will be treated as plagiarism and treated seriously.

<u>Presentation</u>: each student is expected to give a 30-minute presentation on a theoretical topic that is relevant to the interests of the student. The presentation should be taken as an examination on the ability of clearly presenting/understanding economic models. The topic choice must be permitted by the instructor before October 17 in written email.

Any delay will lead to a mandatory in-person meeting discussing the progress of this course.

<u>Exercises</u>

In addition to the assignments, there will be some exercises in the lecture notes for you to complete. Exercises will not be collected, but may be discussed during the lectures. If you need more exercises, you could either work on exercises in any reference book (see below) or consult with the instructor.

Readings

I will use my own notes throughout this course. For references, see below:

<u>For consumer and producer theory:</u>
- David M. Kreps, *Microeconomic Foundations I: Choice and Competitive Markets* (Princeton University Press, 2013),
- Osborne, M. and Rubinstein, A., *Models in Microeconomic Theory* (Open Book Publishers, 2020)
- Geoffrey A. Jehle and Philip J. Reny, *Advanced Microeconomic Theory* (3rd edition, Prentice Hall, 2011)
- Mas-Colell, Andreu, Michael Dennis Whinston, and Jerry R. Green. Microeconomic theory. Vol. 1. New York: Oxford university press, 1995.

<u>For mathematics:</u>
- Efe OK, *Real Analysis with Economic Applications* (Princeton University Press, 2007)
- Carl Simon and Lawrence Blume, *Mathematics for Economists* (Norton, 1994)

In some sense, this course will be a course on communications (about economics). Therefore, any interaction (including questions, comments, and criticisms) in or after class is a critical part of this course of the study, and will be greatly appreciated. I will be available through email as much as I can.

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