# Econ 7115 U01: Microeconomic Theory

Dr. Jesse Bull

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Office Hours: Tuesdays and Thursdays 1 to ~2:00pm and by appointment

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## Lecture:

DM 110, T and TH 2:00 – 3:15pm, Spring 2025.

Welcome to Econ 7115/6174. I’m looking forward to this semester and am excited for you to learn the concepts we will cover. Please read through this syllabus.

## Course Description:

(from the catalog) Game theory. Analysis of static and dynamic games of complete and incomplete information. Introduction to contracts and mechanism design.

## Course Goal:

That you develop your ability to think strategically.

## Course Objectives:

This course will focus on microeconomic theory. The first part (about 2 weeks) of the course will focus on equilibrium in perfectly competitive markets. The main part of the course will focus on game theoretic analysis of several classes of problems where perfect competition does not hold. Game theory allows us to model and predict behavior in a strategic situation. A strategic situation is one in which the actions of one person influence the payoff of another. You will encounter many such situations in most facets of life. The coverage of material will emphasize conceptual and fundamental understanding.

This course will provide some of the standard knowledge needed for some advanced courses and the profession. I believe the concepts we will cover in this course are very useful for many problems you will analyze in your career and am excited to help each of you to learn these. The ways in which we will approach problems will help develop your intuition and mathematical problem-solving skills.

## How to do Well:

An important step for learning the material is doing lots of practice problems. These problem-solving skills can be developed, regardless of your background or preparation for this course. Just like exercise, learning a musical instrument, a sport, or foreign language, learning the material, and getting better at it requires time and effort. Of course, I will provide guidance. In my experience, working consistently on learning the course material and on practice problems is very helpful.

## Grading:

Grades are based on a midterm exam (30%), problem sets (30%), and final exam (40%)

## Examinations:

There will be a midterm examination (during our class time on **February 20**) and a final examination at the University-scheduled time, which seems to be at **noon on Thursday, April 24**.

## Learning Outcomes:

By the end of this course, you will be able to represent many economic situations, in which the parties behave strategically, with basic games and solve for the parties’ equilibrium behavior in those situations. You will be able to use, where appropriate, dominance, rationalizability, Nash equilibrium, and the standard bargaining solution. You will be able to use these concepts to analyze common resource problems, team production, the provision of public goods, externalities, and application of the Coase theorem. Additionally, you will be able to analyze static and dynamic games of incomplete information using Bayes-Nash equilibrium and perfect Bayesian equilibrium. You will be able to apply the solution concepts that you have learned to several introductory contracting problems, which include signaling, adverse selection, and the principal-agent problem.

## Required Readings:

Mas-Colell, Whinston, and Green (1995), *Microeconomic Theory*. ISBN: 9780195073409.

Mas-Colell, Whinston, and Green is a very thorough text that is a very good reference. My lectures will provide more intuition. However, you may still find other texts helpful for providing more intuition. One such text is Watson (2013), *Strategy: An Introduction to Game Theory*, third edition. ISBN: 9780393918380.

**Other Information:**

1. The Disability Resource Center (DRC) collaborates with university faculty to provide inclusive learning environments. If you have a disability and plan to utilize academic accommodations, additional information may be found in the DRC’s website: drc.fiu.edu.
2. Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and to honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Student Conduct and Honor Code procedures and sanctions as outlined in the FIU Regulation 2501 and the Student Handbook.

Anyone found guilty of academic misconduct will earn a grade of an F for the course. In addition to this academic sanction that I will impose, the Academic Integrity Office will be asked to also impose a disciplinary penalty. This will follow University procedures. Please see http://integrity.fiu.edu and the Student Handbook for more information.

1. Per University policy number 300.010, Instructors retain the right to modify the course syllabus for any reason throughout the semester provided that:

• Fair and adequate notice is given to enrolled students either by e-mail, in writing, or through online publishing.

• Modifications to the syllabus are not arbitrary or capricious.

• Students are not unfairly disadvantaged by mid-semester changes to grading standards, attendance standards, or performance measures.

1. Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

## Topics and Schedule (may be adjusted):

Week 1 (week of 1/6): Introduction and simple general equilibrium

Week 2 (week of 1/12): Partial equilibrium

Week 3 (week of 1/19): Introduction to game theory

Extensive-form games

Normal-form games

Beliefs and mixed strategies

Week 4 (week of 1/26): Dominance and best response

Rationalizability

Week 5 (week of 2/2): Nash equilibrium

Common resource problems

Team Production

Week 6 (week of 2/9): Mixed-strategy Nash equilibrium

Week 7 (week of 2/16): **Midterm on 2/20**

Week 8 (week of 2/23): Spring Break

Week 9 (week of 3/2): Externalities and public goods

Week 10 (week of 3/9): Coase Theorem and Bargaining

Week 11 (week of 3/16): Subgame perfection

Week 12 (week of 3/23): Bayes-Nash equilibrium

Week 13 (week of 3/30): Perfect Bayesian equilibrium

Week 14 (week of 4/6): Contracts – signaling, screening, adverse selection.

Week 15 (week of 4/13): Mechanism design and/or evidence

Week 16 (week of 4/20): **Final exam** at university-assigned exam time, which seems to be noon on Thursday, April 24th.