

ECG-701: Microeconomics I

Fall 2020: Tuesday & Thursday, 10:15-11:30 AM

Hybrid Online and In-Person (102 David Clark Labs)

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Course Description:

ECG 701 is the first of two semesters of Ph.D. microeconomics. The syllabus below lays out the sequence of topics and associated readings. The general structure of the micro sequence is that 701 covers theories of the consumer and the firm, welfare measurements, partial equilibrium in the perfectly competitive markets, imperfect competition and market power. ECG 702 covers general equilibrium, social choice and welfare, game theory, uncertainty and information, and mechanisms design. Minor departures from the above structure are possible depending on the instructors' preferences. The purposes of the core sequences are to teach the theoretical tools required to read economics literature, to prepare you for the field courses and written preliminary exams, and to lay the groundwork for your dissertation research.

Course Expectations Related to COVID-19:

- **Course Meeting Schedule**

Your course does not have a traditional meeting schedule. I will lecture on Zoom twice a week in real time but my lectures will also be recorded and available on Moodle, so you can view them on your own whenever your schedule permits. My teaching assistant will conduct problem solving sessions once a week in-person.

Starting in the second week of classes, the problem solving sessions will be held on Tuesdays during the designated time slot (10:15 – 11:30 AM) and classroom (102 David Clark Labs). That means that I will always lecture on Thursdays (10:15-11:30AM) and one other time to be determined (possibly Tuesday afternoon or any time Wednesday).

Be sure to pay attention to any updates to the course schedule as the information in this syllabus may change. The best way to keep informed about everything that is going on in class is to check your course page on Moodle regularly.

- **Technology Requirements**

This course requires having a computer (desktop or laptop) with camera, microphone, stable access to internet and installed Zoom software.

Prerequisites:

The prerequisites for 701 include a master's-level microeconomic theory course such as ECG 700, a year of calculus (MA 131/231 or MA 141/241/242), and familiarity with constrained optimization and linear algebra such as one would obtain from ECG 765.

Readings:

- **Required Textbooks:**

Jehle, G.A. and P.J. Reny (JR): Advanced Microeconomic Theory, Third Edition, Pearson Education Limited (2011).

Mas-Colell, A., M.D. Whinston and J.R. Green (MWG): Microeconomic Theory, Oxford University Press (1995).

Silberberg, E. and W. Suen (SS): The Structure of Economics: A Mathematical Analysis, Third Edition, McGraw-Hill (2001).

- **Additional readings:**

See course outline and reading assignments.

- **Course Requirements and Grading**

Your grade for the course will be determined based on your performance in two midterm exams (25% each), a comprehensive final exam (40%) and homework assignments (10%).

One should expect the following percentage performance/grade schedule:

- 90 - 100% = A range;
- 75 - 89% = B range;
- 61 - 74% = C range.

TENTATIVE COURSE OUTLINE AND READING ASSIGNMENTS

1. Mathematical Background (on your own, no lectures)
JR: A1, A2; MWG: M.A-M.N; SS: 1-7.

2. Consumer Theory

2.1. Preferences and Utility
JR: 1.1, 1.2; MWG: 1A-B, 3A-C

2.2. Consumer Problem
JR 1.3; SS: 10.1, 10.2

- 2.3. Indirect Utility and Expenditure
SS:10.3 - 10.6; JR:1.4 - 1.5; MWG: 3D,E,G
- 2.4. Duality Results
Cornes, R. Duality and Modern Economics, Cambridge University Press
(1992): 2.1 -2.6.
JR: 2.1; MWG: 3F,G

3. Topics in Consumer Theory

- 3.1. Welfare Evaluation
SS:11.5; MWG: 3.I; JR: 4.3
- 3.2. Aggregation
SS: 11.3; MWG: Ch4; Cornes: 8.1, 8.2
Varian, H. Microeconomic Analysis, 3rd edition, Norton & Co. (1992): 9.3-9.4.
- 3.3. Revealed Preferences and Exchange
SS: 11.1, 11.2; JR: 2.3; MWG: 2F, 3J
- 3.4. Integrability
SS: 11.2; MWG: 3H; JR: 2.2; Varian: 8.5
- 3.5. Labor-Leisure Choice
SS: 10.7
Gravelle, H. and R. Rees. Microeconomics, 3rd edition, FT/Prentice Hall,
2004, Chapter 4B
- 3.6. Introduction to Choice under Uncertainty (Comprehensive treatment in EC-702)
MWG, Ch.6

4. Theory of the Firm

- 4.1. Production
JR: 3.1, 3.2; Gravelle & Rees, Ch.5
- 4.2. Cost Functions
JR: 3.3, 3.4; SS: 8.1 – 8.10; MWG: 5C, 5D
- 4.3. Profit Maximization
SS, Ch. 4; JR: 3.5

5. Market Equilibrium

- 5.1. Perfect Competition - Short Run

JR: 4.1; MWG: 10A-C

- 5.2. Entry and Exit – Long Run Equilibrium
MWG: 10F,G
- 5.3. Monopoly and Price Discrimination
JR: 4.2; Varian, Ch.14; Gravelle & Rees, Ch.9
- 5.4. Introduction to Contract Theory
Macho-Stadler, I. and J.D. Perez-Castillo. An Introduction to the Economics of Information. 2nd Edition, Oxford University Press (2001):
Ch.1
- 5.5. Principal-Agent Problem: Base Model (Symmetric Information)
Macho-Stadler & Perez-Castillo, Ch.2, JR 8.2.1
- 5.6. Hidden Action Moral Hazard
Macho-Stadler & Perez-Castillo, Ch.3, JR 8.2.2, MWG 14.B

Health and Well-Being Resources

These are difficult times, and academic and personal stress is a natural result. Everyone is encouraged to take care of themselves and their peers. If you need additional support, there are many resources on campus to help you:

- Counseling Center (<https://counseling.dasa.ncsu.edu/>)
- Health Center (<https://healthypack.dasa.ncsu.edu/>)
- If the personal behavior of a classmate concerns or worries you, either for the classmate's well-being or yours, we encourage you to report this behavior to the NC State CARES team: (go.ncsu.edu/NCSUcares).
- If you or someone you know are experiencing food, housing or financial insecurity, please see the Pack Essentials Program (<https://dasa.ncsu.edu/pack-essentials/>).

Community Standards Related to COVID-19

- We are all responsible for protecting ourselves and our community. Please see the community expectations: https://www.ncsu.edu/coronavirus/reactivating-campus/community-standards/?utm_source=ALL+STAFF%2FFACULTY%2FSTUDENTS+-+UCOMM&utm_campaign=0d221175c9-EMAIL_CAMPAIGN_72820_Community_Standards&utm_medium=email&utm_term=0_e7a0fd0c9f-0d221175c9-92488814

Other Important Resources

- **Keep Learning:** <https://dasa.ncsu.edu/students/keep-learning/>
- **Protect the Pack FAQs:** <https://www.ncsu.edu/coronavirus/frequently-asked-questions/>