GS/ECON5100 A - Microeconomics Theory

September 2023
Professor Elie Appelbaum

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Technical requirements for taking the course

- You will need a stable, higher-speed Internet connection, a computer with a webcam and microphone, or a smart device with these features.
- You will need to be able to use eClass (see the link to the guide below).
- You will need to appear on video (e.g., zoom-sessions, remote proctoring, etc.).
- You will, therefore, need to be able to use Zoom (see link to the guide below).

Useful links for student computing information, resources and help

- Student Guide to eClass
- Zoom@YorkU Best Practices
- Zoom@YorkU User Reference Guide
- “Computing for Students” Website
- Student Guide to eLearning at York University
- You can determine your internet connection speed at Speedtest or Fast.

Organization of the course

- ECON 5100 (fall semester) is an “ONCA” course.
- It will be taught online synchronously.
- Lectures will be held online, and there will be no in-person interactions or activities on campus, **except for the final exam, which will be held on campus**.
- Detailed lecture notes will be posted (on eClass) for each topic. They will include general discussions of the issues, mathematical derivations/presentations, diagrammatic examples and intuitive explanations.
- Everything about the topics to be discussed is covered in the lecture notes.
- The lecture notes will be discussed/presented in scheduled Zoom sessions, which will take place during the scheduled meeting times of this course – Wednesdays, 8:30-11:30.
- They will consist of 30–60-minute segments, as needed.
- During these Zoom sessions, I will also answer any questions about the lectures/lecture notes or the topics in general.
- It is highly recommended that you attend these Zoom sessions.
- The link to these Zoom sessions is provided below.
- Your full name must be visible to be admitted into the Zoom sessions.
- I will not record/post these Zoom sessions. Neither should you record them.
- The first Zoom session will be held on September 6 at 8:30 AM. A general outline/summary/mathematical review/introduction will be provided.
- Students should carefully go through the lecture notes **before** the Zoom sessions.
- Exam questions will be based on these lecture notes.

- **Virtual Office Hours**
- **Wednesdays 12:30-1:30 via Zoom. Appointments need to be booked on eClass Scheduler.**
- If you have questions about the lecture notes or the sample questions, you can raise them during the Zoom sessions. Alternatively, you can book an appointment on the eClass Scheduler.
- For administrative questions, you can reach me by e-mail. I will answer such e-mails on Tuesdays and Wednesdays.

Zoom links

Please copy all Zoom links from this eClass page. If there are eClass access problems (a likely scenario), use the copied links to join the Zoom sessions.

Text

There is no single required text for the course. Some useful books are listed below.

Lecture Notes

All lecture notes (as well as other course information) will be posted on the course eClass page.

Useful reference books:

1. Microeconomics Theory, Mas-Collel, Whinston and Green (MWG)
2. Essential Microeconomics, J.R., Riley (R).
3. Advanced Microeconomic Theory, 2nd edition, Geoffrey A. Jehle and Philip J. Reny (JR)
4. Microeconomics Analysis Hal R. Varian (third edition)
5. Games and Information, E. Rasmusen
6. The Theory of Industrial Organization, J. Tirole
7. Duality Approaches to Microeconomics, W.E. Diewert, in Handbook of Mathematical Economics, Arrow and Intriligator
8. Bargaining Theory with Applications, A. Muthoo.
9. The Theory of Corporate Finance, Jean Tirole, Financial Theory and Corporate Policy, Copeland and Weston.

Topic to be covered (depending on time constraints):

1. Quick REVIEW of (i) Methodology, (ii) The Theory of the Firm (MWG: 5, Varian: 1-6, 12, JR 2, Diewert) and The Theory of Consumer Behaviour (MWG: 1-4, Varian: 7-10, JR Chapter 2, Diewert).

2. Dynamic Problems: Review of Optimal Control, Firm Investment Problem and Consumer Life Cycle Model.

3. Uncertainty: Expected Utility, Non-Expected Utility, Risk Sharing, Risk Aversion, Stochastic Dominance, Applications, Value of Information (MWG: 6, Varian: 11, Kreps: 3).

4. Finance Applications: Portfolio Choice, CAPM, Modigliani-Miller Theorem.

5. Bargaining: Nash and Rubinstein Models (Muthoo), Bargaining with Imperfect Information.

6. Imperfect Competition: Static and Dynamic Imperfect Competition Models (Tirole: 1-3, 5-8, Kreps: 9-10, MWG: 12, JR 4, Varian 16).

7. Imperfect Information: Principal-Agent Problems - Moral Hazard and Adverse Selection, Signalling, Market for "lemons," Quality/Warranties, Contracts with Asymmetric Information, Price Competition with Imperfect Information (MWG: 13-14, Rasmusen: 6-9, Kreps: 16-17, Tirole, pp 35-55, chapters 2.3, 3,9).

8. Incomplete Contracts: Delegation of Authority and Hold-Up Problems (Tirole, pp15-34).

9. Entry Deterrence with Imperfect Information: Entry Deterrence (Tirole).

10. General Equilibrium: Definition, Existence, Properties, First and Second Fundamental Theorems of Welfare Economics (JR 5, MWG, Riley).

11. Social Choice and Welfare: Compensation Principle, Social Welfare Functions, Arrow's Impossibility Theorem (MWG 21, JR 6).

GRADING:

There will be ONE midterm exam worth 25% (to be held on October 25) and a final exam worth 75% (to be held during the exam period).

Note: There will not be a deferred midterm exam. Students who miss the midterm will have the weight of the midterm shifted to the final, but only if they (i) regularly attended classes, (ii) have a valid reason (e.g., medical) and contact me within 24 hours.

IMPORTANT INFORMATION FOR STUDENTS

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (see Reports, Initiatives, Documents) – https://secretariat-policies.info.yorku.ca

•York's Academic Honesty Policy and Procedures/Academic Integrity Website
•Ethics Review Process for research involving human participants
•Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities.
•Student Conduct Standards
•Religious Observance Accommodation.

References (mainly on uncertainty and imperfect information): These are some interesting & useful articles (or books). Not all are easy to read, but you may want to look at (at least) some of them. Most of the issues in these references will be addressed (in some fashion) in class. (more references will be provided as the course progresses):

Allais, M., and O. Hagen, eds. (1979), Expected Utility Hypotheses and the Allais Paradox, Reidel, Dordrecht.

Akerlof, G., (1970) The Market for Lemons: Qualitative Uncertainty and the Market Mechanism, Quarterly Journal of Economics, 84.

Alchian and Demsetz (1972), "Production Information Costs and Economic Organization," American Economic Review 1962, 777-795.

Appelbaum, E. and A. Ullah, (1997), "Estimation of Moments and Production Decisions under Uncertainty," Review of Economics and Statistics.

Appelbaum, E. and E. Katz, (1986), "Measures of Risk Aversion and the Comparative Statics of Industry Equilibrium" American Economic Review, 1986.

Appelbaum, E. and P. Basu, (2004), "A New Methodology for the Derivation of the Equity Premium Function," Annals of Operations Research, 2010.

Blackorby, Primont and Russell, Duality Separability and Functional Structure; Theory and Economic Applications, Amsterdam North Holland.

Brander, J.A. and B. Spencer, "Moral Hazard and Limited Liability: Implications for the Theory of the Firm," International Economic Review, 30, 4, (1989).

Che, Y-K and D.B. Hausch, (1999), "Cooperative Investment and the Value of Contracting," American Economic Review 89, (1), 125-147.

Chiu, Y.S., (1998), "Noncooperative Bargaining, Hostages, and Optimal Asset Ownership," American Economic Review, Vol. 88 (4), 882-901.

Coase, R., (1937), The Nature of the Firm, Economica, 4, 386-405.

Cyert, R. and J. March, (1963), Behavioural Theory of the Firm.

Darrough, M. and N. Stoughton, (1986), "Moral Hazard and Adverse Selection: The Question of Financial Structure," Journal of Finance, 41.

Epstein L.G., (1992), "Behavior under Risk: Recent Developments in Theory and Applications," in Advances in Economic Theory, sixth world congress, Vol, 2, J-J Laffont, ed.

Fama, E., (1980) Agency Problems and the Theory of the Firm, JPE 88, 288-307.

Gorman T, (1953), Community Preferences Fields Econometrica, 21.

Grossman, S. and O. Hart, (1986), "The Costs and benefits of Ownership: A Theory of Vertical and Lateral Integration," Journal of Political Economy, 94, 691-719.

Grossman, S., and O. Hart, (1983), An Analysis of the Principal-Agent Problem, Econometrica, 51.

Guesnerie and Laffont, (1984), A Complete Solution to a Class of Principal-Agent Problems with …, J. Public Economics, 25.

Hart, O. and B. Holmstrom, (1987), The Theory of Contracts, in Advances in Economic Theory, ed. T Bewley.

Hart, O., (1995), Firms, contracts, and financial structure, Clarendon Lectures in Economics. Oxford and New York: Oxford University Press,

Hart, O., The Market Mechanism as an Incentive Scheme, Bell Journal of Economics, 74.

Holmstrom and Tirole, (1987), The Theory of the Firm. In Handbook of Industrial Organization, ed. Schmalensee and Willig.
Holmstrom, B. (1979), Moral Hazard and Observability, Bell Journal of Economics, 10.
Holmstrom, B. (1982), Moral Hazard in Teams, Bell Journal of Economics, 19.
Jensen and Meckling, (1976), Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure, Journal of Financial Economics, 3.
Jorgenson, D.W., Econometrics Methods for Modelling Producer Behaviour, in Z. Griliches and M.D. Intriligator (eds.), Handbook of Econometrics, Vol. 3, Amsterdam, North-Holland, 1841-1915.
Kahneman, D. and A. Tversky, (1979), Prospect Theory: An Analysis of Decision under Risk", Econometrica 47, 263-91.
Machina, M., (1982), Expected Utility without the Independence Axioms, Econometrica, 50.
Machina, M., (1987), "Choice under Uncertainty: Problems Solved and Unsolved", Journal of Economic Perspectives 1.
Maskin and Riley, (1984), Monopoly with Incomplete Information, Rand Journal of Economics, 15.
Milgrom and Roberts, (1986), Prices and Advertising Signals of Product Quality, Journal of Political Economy, 94.
Mookherjee, D., (1984), Optimal Incentive Schemes with Many Agents, Review of Economic Studies, 51.
Myerson and Satterwaite, (1983), Efficient Mechanisms for Bilateral Trading, JET 28.
Pratt, J., (1964), Risk Aversion in the Small and in the Large, Econometrica, 32.
Rogerson W., (1985) The First-Order Approach to Principal-Agent Problems, Econometrica 53.
Ross, S., (1977), The Capital Asset Pricing Model, Journal of Finance, 32.
Rothschild and Stiglitz, (1976), Equilibrium in Competitive Insurance Markets: An Essay in the Economics of Imperfect Information, Quarterly Journal of Economics, 90.
Salop, S., (1977), The Noisy Monopolist, Review of Economic Studies, 44.
Sandmo, A., (1971), "On the Theory of the Competitive Firm Under Price Uncertainty," AER, 61.
Spence M. (1973), Job Market Signaling, Quarterly Journal of Economics, 87.
Spence M. (1974), Market Signaling, Harvard University Press.

Stiglitz, J., (1977), Monopoly, Nonlinear Pricing, and Imperfect Information: The Insurance Market. Review of Economic Studies, 44.
Varian, H., (1987), Price Discrimination, in Handbook of Industrial Organization, ed. Schmalensee and Willig.
Williamson, O., (1985), The Economic Institutions of Capitalism.
Willig R. (1976), Consumer's Surplus Without Apology, AER, 66.
Wilson, C., (1977), A Model of Insurance Markets with Imperfect Information, Journal of Economic Theory 16.