

COURSE OUTLINE

Course Code / Title	:	HE3001 Microeconomics III
Pre-requisites	:	HE2001 Microeconomics II
No. of AUs.	:	3
Contact Hours	:	39 hours (3 hours per week; 2 hours lecture and 1 hour tutorial)

Course Aims

In Microeconomics 1 and 2, we have covered the core tenets of decision making by firms and individuals, and how perfect competition translates this into efficient outcomes under specific conditions.

The main aim of this course is to extend our framework to contexts with less than “perfect” settings. We will first study the basics of game theory, analysing strategic interactions between small numbers of agents and discuss its applications. Subsequently, we will study various kinds of market frictions and how they can lead to sub-optimal outcomes in the market, covering possible solutions. This will include classical ones like asymmetric information, classical externalities and common access and also newer ones like information technology. Lastly, we will also introduce behavioural economics and how social and psychological elements can be applied to traditional topics in Economics.

Intended Learning Outcomes (ILO)

Upon the successful completion of the course, you should be able to:

- (1) Use microeconomics concepts and theories to describe individual and social choice under strategic interactions and imperfect market settings.
- (2) Apply fundamental microeconomic models to analyse decision-making by agents in these contexts and the impacts on efficiency and social welfare.
- (3) Identify and understand the possible solutions to problems created by the strategic/imperfect nature of the decision context.
- (4) Communicate economic reasoning, in speech and writing to explain and evaluate the different processes behind agents' decisions, how they affect efficiency and policy solutions.

Course Content

Lecture 1: Game Theory 1: Static Games of Complete Information. Normal form, Dominance solvability, Nash Equilibria.

Lecture 2: Game Theory 2: Mixed Strategy Nash Equilibria, Applications of Static Games of Complete Information, Sequential Games of Complete Information, Extensive form

Lecture 3: Game Theory 3: Subgame Perfect Nash Equilibria., Repeated games.
Simple Static Games of Incomplete Information, Bayesian Nash Equilibria.

Lecture 4: Asymmetric information, Adverse Selection: Hidden Information and Adverse Selection. The Market for Lemons. Signalling.

Lecture 5: Asymmetric Information, Moral Hazard: Hidden actions and Moral Hazard. Moral Hazard and Insurance. Moral Hazard and Employment. Incentives and Second-best solutions.

Lecture 6: Auctions: Auction Rules, Auction Outcomes, Auction Equilibria. Revenue Equivalence.

Lecture 7: Externalities: Positive and negative externalities. Externalities and Efficiency. Property Rights, Incomplete Markets and the Coase Theorem.

Lecture 8: Common property and Public goods: Rivalry and Excludability in Goods. Tragedy of the Commons. Public Goods and Free Riding. Implementing Public Goods.

Lecture 9: Information Technology 1: Systems Competition, Complementarities. Competition with complementaries, Lock in. Competition with Network Externalities.

Lecture 10: Information Technology 2: Market Dynamics with Network Externalities, Two sided Markets, Rights Management, Intellectual Property.

Lecture 11: Behavioural Economics: Deviations from the “Rational” Model. Social preferences. Psychological “biases”. Nudging and Libertarian Paternalism.

Course Assessment

Bi-semester Tests	: 70%
Class Participation	: 10%
Continuous Assessment	: 20%

Total	100%

Bisemester Tests:

There will be two BEs, one in week 7 and another in week 13, each given 35% weight. BEs involve composite questions testing the applicative and rigorous understanding of key concepts and theories. For example, students will be asked to apply key concepts or analyze a problem using a suitable theory.

Continuous Assessments (CA):

For each main topic, there will be a short online quiz. Quizzes involve multiple choice questions testing the basic understanding of key concepts and theories. For example, students will be asked about a key concept or solve a problem using a suitable method. Quizzes are optional, but students are encouraged to complete them to test their understanding of the course material. Marks for the CA will be calculated based on the 2 highest scores in each half of the course. (4 × 5% each).

Classroom Participation:

For each tutorial session, there will be sets of questions to complete. Students will be asked to present their answers to these questions. Assessment is based on whether students can i) use the correct methods to solve the question, ii) demonstrate their understanding of the knowledge of the topic, and iii) explain their answers in a clear manner.

Formative Feedback

You will receive formative feedback on your progress through in-class review and discussion of solutions. You will also receive summative group feedback on the bi-semester tests upon the conclusion of the module.

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lectures	Students will be introduced to a variety of economic decision problems involving choices by agents via the lectures. They will be taught the respective fundamental microeconomic approaches and ways of thinking about these problems. The lecture slides provide an outline of the core material — understandable enough on their own — but with more detailed exposition on them during the lectures. This intermediate course will allow students to continue the learning process through revision of notes, readings of recommended or self-sourced material, and attempting seminar assignments.
Tutorials	Tutorials will provide opportunities for detailed discussion of assignments on current topics, concepts and frameworks from the previous lecture. Students are required to contribute their answers and to engage in solving problems. The tutorials are purposed to check and reinforce a high level of understanding and reinforce it. Students will be evaluated on their ability to identify and justify relevance of economic concepts central to the chosen context, and to orally communicate this rigorously with the aid of written communication (e.g. working a problem on the board) if required. Tutorials will also serve as a platform for participants to nurture academic community engagement via co-learning.
Assessments	Assessments will test the attainment of learning objectives in multiple ways that together ensure a comprehensive and balanced education in the fundamentals of economic decision making. Classroom participation in terms of offering and discussing solutions tests the ability to orally communicate analytical insight. Bi-semester tests check conceptual understanding and technical skills of key concepts, the ability to connect theory and practice, as well as competence in rigorously deriving and communicating relevant economic insight. Continuous assessments test analytical knowledge and skills. Formative feedback will be given for CAs.

Reading and References

Textbook:

Intermediate Microeconomics: A Modern Approach, 9th Edition by H.R. Varian.
W.W.Norton & Company.

Course Policies and Student Responsibilities

(1) General

You are expected to complete all assigned pre-class readings and activities, attend all seminar classes punctually and take all scheduled assignments and tests by due dates. You are expected to take responsibility to follow up with course notes, assignments and course related announcements for seminar sessions they have missed. You are expected to participate in all seminar discussions and activities. There will be only at most 1 make-up for the bisemesters. If you fail to attend both a test and the make-up, you are liable for a zero grade in the test.

(2) Absenteeism

Absence from class without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. Absence due to medical reasons must be certified.

(3) Contact

The seminars are designed for student-teacher interaction and queries are best shared during those times, as tutors will personally be leading all the seminars to give you the most consistent and closest attention. If for any special reason or requirement, I am happy to meet you for further discussions after the lecture or seminar, or in appointments arranged in-person or by email (jonathanyeo@ntu.edu.sg).

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity](#) website for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Course Instructors

Instructor	Office Location	Phone	Email
Asst Prof Jonathan Yeo	SHHK-04-63	67904496	jonathanyeo@ntu.edu.sg
TBC			

Planned Weekly Schedule

Week	Topic	Course ILO	Readings/ Activities
1	Game Theory 1	1,2,3	Varian Ch29, Ch30, Slides
2	Game Theory 2	1,2,3	Varian Ch29, Ch30, Slides
3	Game Theory 3	1,2,3	Varian Ch29, Ch30, Slides
4	Asymmetric information, Adverse Selection	1,2,3	Varian Ch 38
5	Asymmetric information, Moral Hazard	1,2,3	Varian Ch 38
6	Auctions	1,2,3	Varian Ch 18, Slides
7		1,2,3	Bi-semester 1
	Recess Week		
8	Externalities	1,2,3	Varian Ch35
9	Common Property and Public Goods	1,2,3	Varian Ch37
10	Information Technology 1	1,2,3	Varian Ch36,
11	Information Technology 2	1,2,3	Varian Ch36
12	Behavioural Economics	1,2,3	Varian Ch31, Slides
13	Revision	1,2,3	
14		1,2,3	Bi-semester 2

Appendix 1: Assessment Criteria/Rubrics for Bi-Semester Test

	Developing	Functional-Proficient	Advanced
Identify and justify relevance of economic concepts central to the context	Ambiguous identification and weak understanding of the economic concepts relevant to the context	Compatible identification and good understanding of the economic concepts relevant to the context.	Distinct identification and In-depth understanding of the economic concepts relevant to the context
Analyse decision making and/or outcomes	Superficial and narrow analysis of problems, weak understanding of mechanisms through which decisions operate and/or outcomes arise.	Good and varied analysis of problems, good understanding of mechanisms through which decisions operate and/or outcomes arise.	Insightful and comprehensive analysis of problems, strong understanding of mechanisms through which decisions operate and/or outcomes arise.
Propose suitable solutions	Weak, superficial justification for proposed solutions.	Good and varied justification for proposed solutions.	Strong and comprehensive justification for proposed solutions.
Academic rigor and scholastic excellence	Draws weakly on course content.	Draws on relevant course content.	Excellent use of relevant course content.
Written communication	Weak communication that is unclear or ambiguous, with poor use of graphical and mathematical tools, organized in an unsystematic fashion	Good understandable communication aided by graphical and mathematical tools, organized in a logical flow.	Clear, concise, and precise communication aided by effective graphical and mathematical tools, organized systematically in a logical flow.

Appendix 2: Assessment Criteria/Rubrics for Classroom Participation

	Developing	Functional-Proficient	Advanced
Identify and justify relevance of economic concepts central to the context	Ambiguous identification and weak understanding of the economic concepts relevant to the context	Compatible identification and good understanding of the economic concepts relevant to the context.	Distinct identification and in-depth understanding of the economic concepts relevant to the context
Academic rigor and scholastic excellence	Draws weakly on course content.	Draws on relevant course content.	Draws on relevant course content, with additional insights from external sources and examples.
Oral communication	Weak oral communication that is unclear or ambiguous.	Good understandable oral communication.	Clear, confident, concise, and precise oral communication, organized systematically in a logical flow.