# Economics for Business and Management II

## Prof. Guido Merzoni; Prof. Federico Trombetta

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course intends to provide students with basic theoretical and applicative knowledge of techniques used within decisional and management processes in public organizations and private companies. Students will acquire the ability to use such techniques for decisions in different and complex contexts.

*Knowledge and understanding*

At the end of the lectures of the first module, students will know the basic notions and tools of game theory with perfect information and how to apply them to the analysis of strategic interaction contexts. At the end of the lectures of the second module, students will know the basic applications of those tools to the analysis of the strategic interactions between firms in imperfectly competitive markets.

*Ability to apply knowledge and understanding*

At the end of the course, students will be able to:

- represent situations of strategic interaction in different contexts in the form of games, in normal and extended form;

- solve simple games in normal form, applying the criteria of simple and iterated dominance, Nash equilibrium and selection among multiple equilibria;

- solve simple games in extended form using the backward induction criterion and employ this technique to discuss the value of being bound to predefined behaviours and the contexts of repeated play;

- use game theoretical tools to analyse interactions among firms in imperfectly competitive markets;

- analyse the fundamental elements that determine market equilibria and their configuration.

***COURSE CONTENT***

Module One: *Elements of strategic thinking* (Prof. Guido Merzoni)

The module focuses on the application of the basic tools of games theory with complete information to the analysis of strategic interaction. Particular emphasis will be placed on the following topics:

* the representation of strategic interaction in games in normal and extended form;
* the potential contrast between individual incentives and collective well-being: the prisoner’s dilemma;
* collective action and co-ordination problems;
* time inconsistency and the value of commitment;
* stable relations and co-operation.

Module Two: *Strategic interactions and imperfect competition* (Dr. Federico Trombetta)

This module applies game theoretical tools learned in the first part to the analysis of strategic interactions in imperfectly competitive markets. In particular, it will cover:

* Models of static and dynamic imperfect competition;
* Product differentiation;
* Deterrence and credibility;
* Collusion;

***READING LIST***

For both modules:

A. Dixit-S. Skeath-D. McAdams, *Games of Strategy,* 5th Edition,W.W.Norton & Co., New York, 2020.

For the second module:

Luis M. B. Cabral, *Introduction to Industrial Organization,* 2nd Edition, MIT Press, Cambridge, MA, 2017.

Further reading suggestions may be provided at the beginning of the module and in this case they will also be published on the *Blackboard* platform*.*

***TEACHING METHOD***

The two modules are taught lectures and exercises as well as discussions.

The Blackboard platform will be used to make study material available and support the course.

***ASSESSMENT METHOD AND CRITERIA***

The written test of the module ‘Elements of strategic thinking’ aims at assessing students’ practical abilities in the use of the tools of game theory, in the normal and extended representation of the strategic interaction and in solving the corresponding games; calculation errors with the correct procedure are penalized with half point attributed to exercise or part of the exercise.

The written test of the module ‘Strategic interactions and imperfect competition’ aims at assessing students’ practical abilities in the use of the tools of game theory in modelling and solving games related to the topics covered; calculation errors with the correct procedure are penalized with half point attributed to exercise or part of the exercise.

Students can take the written exams for both modules during the official exam sessions on the same date or on two different dates. Students pass the exam when they have passed both exams for both modules with a minimum grade of 18/30. The final mark is determined by calculating the average mark of the two modules. The mark obtained from a single module will be combined with that of the other one by the scheduled examination session within the same academic year. After this deadline, students will have to retake the tests for both modules, according to the instructions indicated.

Mid-term exams may be offered, in particular at the end of the first module.

Exams and the assessment process may be subject to changes, with the assessment criteria being substantially the same, based on the rules that might be established by the Competent Authorities as a consequence of the Covid-19 pandemic. Any necessary changes will be communicated at the beginning of or during the course.

***NOTES AND PREREQUISITES***

During the course *Blackboard* platform will be used, so students are advised to have their own access password and to monitor the dedicated page, as well as to verify that their registered email is correct so as not to miss communications from lecturers.

The course is composed of lectures and teaching material in English.

A prerequisite for successfully completing this course is knowledge of the basic elements of micro-economic analysis, particularly the theory of markets (monopoly, perfect competition, oligopoly).

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching and assessment will be carried out following procedures that will be promptly notified to students.

Further information can be found on the lecturer's webpage at <http://docenti.unicatt.it/web/searchByName.do?language=ENG> or on the Faculty notice board.

***OFFICE HOURS***

Prof. Guido Merzoni’s office hours are held at the Department of International Economics, Institutions and Development, Via Necchi, 5, IV floor, following the timing communicated in that building and on the lecturer’s personal webpage, or online if in-person office hours are not allowed.

Dr. Federico Trombetta’s office hours are held at the Department of International Economics, Institutions and Development, Via Necchi, 5, V floor, following the timing communicated in that building and on the lecturer’s personal webpage, or online if in-person office hours are not allowed.

Office hour timings may change during the year, hence it is recommended to always verify the announcements area of the lecturers’ personal webpage.