***Course Syllabus***
Programa de Pós Graduação em Economia Aplicada (PPEA)
Universidade Federal de Ouro Preto (UFOP)

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| **Department/Area of Study:** | Economics |
| **Discipline:** | Microeconomics II (EA011) |
| **Number of credits:** | 4 |
| **Academic hours:** | 60 h/a |
| **Prerequisites:** | Microeconomics I. |

# 1   Overview

This course provides a rigorous treatment of the concepts of non-cooperative solutions in the theory of games is expected a high degree of dedication to gain a solid knowledge in the topics discussed during the discipline.

# 2   Objectives

By the end of the course students will be able to:

1. Understand and formulate games in the extensive and normal form under complete and incomplete information.

2. Use the principal concept solutions : Nash Equilibrium; Sub-game perfect Equilibrium; Bayesian equilibrium; Perfect Bayesian Equilibrium.

3. Use Games to model different economic scenarios.

# 3   Contents

1. Static games of Complete Information (**SG 1**): Strategic Form; Nash Equilibrium; Dominance; Rationalizability; Correlated Equilibrium.

2. Extensive Games of Complete Information (**EG 1**): Extensive-Form Games;Strategies; Backward Induction and Subgame perfection; Bargaining; Repeated Games.

3. Static Games of Incomplete Information (**SG 2**): Bayesian Games; Bayesian Equilibrium; Bayesian Games and Mechanism design.

4. Extensive Games of Incomplete Information (**EG 2**): Perfect Bayesian Equilibrium; Signaling Games; Reputation Games; Sequential Bargaining under Incomplete Information.

5. Advanced Topics (**AT**): Supermodular Games; Markov Equilibrium; Differential Games.

# 4   Texts

The couse follows [2] as textbook. However some topics could be clearly extended by reading the complementary material (see below).

| Chap. | Principal | Complementary |
|-------|-----------|---------------|
| SG 1 | [2, chap. 1-2] | [5, chap. 2-5], [3, chap. 1] |
| EG 1 | [2, chap. 3-5] | [5, chap. 6-10], [3, chap. 2] |
| SG 2 | [2, chap. 8] | [4, chap. 10],[3, chap. 3] |
| EG 2 | [2, chap. 9] | [5, chap. 11-12],[3, chap. 4] |
| AT | [2, chap. 12-13] | [1], [6, chap. 2] |

Table 1: List of readings

# 5 Contact Information

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| Instructor: | Prof. Dr. Martin H. Barrenechea |
| Room: | 426 Block 2 Campus ICSA |
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# References

[1] Engelbert Dockner, Ngo Van Long, and Ngo Van Long. *Differential Games in Economics and Management Science*. CAMBRIDGE UNIV PR, 2006.

[2] Drew Fudenberg and Jean Tirole. *Game Theory*. The MIT Press, 1991.

[3] Robert Gibbons. *Game Theory for Applied Economists*. PRINCETON UNIV PR, 1992.

[4] Michael Maschler. *Game Theory*. CAMBRIDGE UNIVERSITY PRESS, 2013.

[5] Martin J. Osborne and Ariel Rubinstein. *A Course in Game Theory*. MIT Press Ltd, 1994.

[6] Xavier Vives. *Oligopoly Pricing*. MIT Press Ltd, 2001.