

## Information Economics

Code: 102339  
ECTS Credits: 6

| Degree                                         | Type | Year | Semester |
|------------------------------------------------|------|------|----------|
| 2501572 Business Administration and Management | OT   | 4    | 0        |
| 2501573 Economics                              | OT   | 3    | 2        |
| 2501573 Economics                              | OT   | 4    | 0        |

## Contact

Name: Inés Macho Stadler  
Email: Ines.Macho@uab.cat

## Use of languages

Principal working language: spanish (spa)  
Some groups entirely in English: Yes  
Some groups entirely in Catalan: No  
Some groups entirely in Spanish: Yes

## Prerequisites

Although not mandatory, it is advisable to have a good level of mathematics and microeconomics, as we will use tools of these disciplines.

## Objectives and Contextualisation

To acquire the basic tools of the Economics of Information, a discipline that allows studying the effects that the existence of asymmetric information has on the terms of contracts.

To present the models of moral hazard, adverse selection and signaling, to explain the terms of the contracts in different situations, in particular depending on who has more information and how this agent may try to capitalize on it.

To develop tools of economic analysis as well as economic intuitions to understand the design of contracts and regulatory mechanisms.

## Skills

### Business Administration and Management

- Capacity for adapting to changing environments.
- Capacity for independent learning in the future, gaining more profound knowledge of previous areas or learning new topics.
- Capacity for oral and written communication in Catalan, Spanish and English, which enables synthesis and oral and written presentation of the work carried out.
- Demonstrate initiative and work individually when the situation requires it.
- Organise the work in terms of good time management, organisation and planning.
- Select and generate the information necessary for each problem, analyse it and take decisions based on that information.
- Show motivation for carrying out quality work and sensitivity to the consequences for the environment and society.

- Work well in a team, being able to argue proposals and validate or reject the arguments of others in a reasoned manner.

### **Economics**

- Analyse situation in which there is unequal information between the two sides involved.
- Capacity for adapting to changing environments.
- Demonstrate initiative and work individually when the situation requires it.
- Formulate recommendations of economic policy that improve efficiency and equity in market operations.
- Identify the processes that govern the operation of markets in different competition systems, different scenarios of interrelationship and different timescales.
- Organise the work in terms of good time management, organisation and planning.
- Select and generate the information necessary for each problem, analyse it and take decisions based on that information.
- Take decisions in situations of uncertainty, demonstrating an entrepreneurial and innovative attitude.

## **Learning outcomes**

1. A capacity of oral and written communication in Catalan, Spanish and English, which allows them to summarise and present the work conducted both orally and in writing.
2. Analyse the operating conditions of markets and other forms of social interaction.
3. Capacity to adapt to changing environments.
4. Capacity to continue future learning independently, acquiring further knowledge and exploring new areas of knowledge.
5. Consider formal models which can be used to study situations with information asymmetry between the parts.
6. Demonstrate initiative and work independently when required.
7. Demonstrate motivation regarding the quality of the work performed and sensitivity regarding the consequences on the environment and society.
8. Identify the basic elements that characterise the organisation of a market.
9. Identify the conditions and processes that generate externalities as well as the problems posed by public goods.
10. Identify the consequences of the existence of information asymmetry among different economic agents on the way in which these organise themselves and on the efficiency of the relationship they establish.
11. Make decisions in situations of uncertainty and show an enterprising and innovative spirit.
12. Organise work, in terms of good time management and organisation and planning.
13. Propose the optimum design of the institutions regulating the markets and of its equipment.
14. Select and generate the information needed for each problem, analyse it and make decisions based on this information.
15. Solve the models formulated to obtain empirically stable predictions.
16. Use basic optimisation tools and the game theory, and include these elements in a theoretical model.
17. Work as part of a team and be able to argue own proposals and validate or refuse the arguments of others in a reasonable manner.

## **Content**

### **1. INTRODUCTION**

- 1.a. Introduction
- 1.b. Elements of the problem
- 1.c. Timing of the relationship
- 1.d. Typology of asymmetric information problems

\* Moral Hazard

\* Adverse Selection

\* Signaling

## **2. CONCEPTS THAT WILL USE**

(REVIEW AND/OR EXPOSITION FOR OUR COURSE PURPOSES)

2.a. Expected utility and expected value

2.b. Sequential Equilibrium (sub-game perfection)

2.c. Maximization methods

## **3. THE BASIC MODEL**

3.a. introduction

3.b. Model description

3.c. The symmetric information contracts

\* The optimal payment mechanism

\* The level of effort training

## **4. THE MORAL HAZARD PROBLEM**

4.a. Introduction

4.b. The two efforts case

4.c. Consequences for the contract of the presence of moral hazard

4.d. Extensions

Exercises, applications and examples

## **5. ADVERSE SELECTION PROBLEM**

5.a. Introduction

5.b. Case of two types

5.c. Consequences for the contract of the existence of adverse selection

Exercises, applications and examples

## **6. SIGNALLING**

6.a. Introduction

6.b. The value of private information and signaling

6.c. The informative power of contracts

Exercises, applications and examples

## **Methodology**

The course combines theoretical and applied classes. The first will be devoted to the presentation of models of contracts under asymmetric information and the resolution of these models to obtain general conclusions

applicable to the study of specific problems. The second type of sessions will be devoted to analyze examples and discuss the application to different real problems of the theoretical conclusions and their implications. In these sessions, students must participate in solving exercises and discussing the proposed topics.

## Activities

| Title                                                                                                | Hours | ECTS | Learning outcomes                                         |
|------------------------------------------------------------------------------------------------------|-------|------|-----------------------------------------------------------|
| <b>Type: Directed</b>                                                                                |       |      |                                                           |
| Lectures with ICT support. Discussion and exercises. Presentation of applications to specific cases. | 45    | 1.8  | 2, 3, 4, 8, 9, 10, 12, 5, 13, 15, 14, 16                  |
| <b>Type: Supervised</b>                                                                              |       |      |                                                           |
| Mentoring and monitoring the work done.                                                              | 12.5  | 0.5  | 3, 1, 4, 6, 10, 7, 12, 5, 11, 15, 14, 17, 16              |
| <b>Type: Autonomous</b>                                                                              |       |      |                                                           |
| Studying. Further reading. Search documentation. Preparation of exercises and applications..         | 85    | 3.4  | 2, 3, 1, 4, 6, 8, 9, 10, 7, 12, 5, 11, 13, 15, 14, 17, 16 |

## Evaluation

The evaluation will consist of class participation, a midterm exam and a final exam. Class participation includes answering the lists of exercises and participating in the discussion topics. The weight of each of the above items in the calculation of the final grade is as follows: Final exam 50%, 35% the midterm exam, 15% for participation, exercises and other work.

### Calendar of evaluation activities

The dates of the evaluation activities (midterm exams, exercises in the classroom, assignments, ...) will be announced well in advance during the semester.

The date of the final exam is scheduled in the assessment calendar of the Faculty.

"The dates of evaluation activities cannot be modified, unless there is an exceptional and duly justified reason why an evaluation activity cannot be carried out. In this case, the degree coordinator will contact both the teaching staff and the affected student, and a new date will be scheduled within the same academic period to make up for the missed evaluation activity." **Section 1 of Article 115. Calendar of evaluation activities (Academic Regulations UAB).** Students of the Faculty of Economics and Business, who in accordance with the previous paragraph need to change an evaluation activity date must process the request by filling out an **Application for exams' reschedule**

[https://eformularis.uab.cat/group/deganat\\_feie/application-for-exams-reschedule](https://eformularis.uab.cat/group/deganat_feie/application-for-exams-reschedule)

### Grade revision process

After all grading activities have ended, students will be informed of the date and way in which the course grades will be published. Students will be also be informed of the procedure, place, date and time of grade revision following University regulations.

### Retake Process

In order to have access to the retake axam, the average grade obtain with the three activities has to be bigger or equal than 4 (and smaller than 5).

"To be eligible to participate in the retake process, it is required for students to have been previously been evaluated for at least two thirds of the total evaluation activities of the subject." **Section 3 of Article 112 ter. The recovery (UAB Academic Regulations)**. Additionally, it is required that the student to have achieved **an average grade of the subject between 3.5 and 4.9**.

The date of the retake exam will be posted in the calendar of evaluation activities of the Faculty. Students who take this exam and pass, will get a grade of 5 for the subject. If the student does not pass the retake, the grade will remain unchanged, and hence, student will fail the course.

A student is considered "not evaluable" in the subject as long as there is no participated in none of the evaluation activities. Therefore, it is considered that a student who participates in any of the components of continuous evaluation can no longer opt for a "non-evaluable".

### Irregularities in evaluation activities

In spite of other disciplinary measures deemed appropriate, and in accordance with current academic regulations, *"in the case that the student makes any irregularity that could lead to a significant variation in the grade of an evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of various irregularities occur in the evaluation of the same subject, the final grade of this subject will be 0"*. **Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations)**.

### Evaluation activities

| Title                                                       | Weighting | Hours | ECTS | Learning outcomes                                         |
|-------------------------------------------------------------|-----------|-------|------|-----------------------------------------------------------|
| Exercises, participation in class and discussion of topics. | 15%       | 1.5   | 0.06 | 2, 3, 1, 4, 6, 8, 9, 10, 7, 12, 5, 11, 13, 15, 14, 17, 16 |
| Final exam.                                                 | 50%       | 3     | 0.12 | 2, 3, 1, 4, 6, 8, 9, 10, 7, 12, 5, 11, 13, 15, 14, 17, 16 |
| Midterm exams.                                              | 35%       | 3     | 0.12 | 2, 3, 1, 4, 6, 8, 9, 10, 7, 12, 5, 11, 13, 15, 14, 17, 16 |

### Bibliography

#### Basic References:

MACHO STADLER, Ines and David PEREZ CASTRILLO: Introduction to Economics of Information, Oxford University Press.

In addition be recommended readings in class to complete the basic bibliography. This material and other material such as lists of exercises will be incorporated into the "Campus Virtual".