# 240041 - Economics and Business

| Coordinating unit: | 240 - ETSEIB - Barcelona School of Industrial Engineering |
| Coordinating unit: | 240 - ETSEIB - Barcelona School of Industrial Engineering |
| Teaching unit: | 732 - OE - Department of Management |
| Academic year: | 2017 |
| Degree: | BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Teaching unit Compulsory) |
| Degree: | BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Compulsory) |
| Degree: | BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2010). (Teaching unit Compulsory) |
| ECTS credits: | 6 |
| Teaching languages: | Catalan, Spanish |

## Teaching staff

**Coordinator:** LUCAS PHILIPPE VAN WUNNIK

**Others:**
- Primer quadrimestre:
  - EDUARDO CHARLES ORMO - 40
  - RAQUEL PERALES MUÑOZ - 10
  - RAMON SALVADOR VALLES - 40
  - YOLANDA SUESCUN PEREZ - 30
  - LUCAS PHILIPPE VAN WUNNIK - 20

## Degree competences to which the subject contributes

### Specific:

### Transversal:
2. ENTREPRENEURSHIP AND INNOVATION: Knowing about and understanding how businesses are run and the sciences that govern their activity. Having the ability to understand labor laws and how planning, industrial and marketing strategies, quality and profits relate to each other.

3. SUSTAINABILITY AND SOCIAL COMMITMENT. Being aware of and understanding the complexity of social and economic phenomena that characterize the welfare society. Having the ability to relate welfare to globalization and sustainability. Being able to make a balanced use of techniques, technology, the economy and sustainability.
Teaching methodology

1. CLASSROOM TEACHING (60h)

- In each topic an economic tool is presented (concept, model) and analysed with present day facts or statistic data (applications). This way, it is intended that the student is able to perceive this tool's utility, understand it better and interpret reality and economic present day with the aid of this tool.

- Each one of these lessons has different parts:
  (i) A theoretical exposition done by the professor (expositive lecture).
  (ii) Exercises and problems (problems session).
  (iii) Applying theory: comment/analyse of present day economics or economic data (expositive lecture with students' participation).

2. STUDENT'S NON-PRESENTIAL ACTIVITY (90h)

- Take part on a discussion about an economic topic.
- Creating a common project (deliverable).
- Study on contents related with what has been seen in lectures (studying exams, solving problems and exercises, reading complementary literature).

Learning objectives of the subject

The objective of this course is to provide the student with the basic analysing tools to understand possible influences of the economic environment on the company. This knowledge is important for the future engineer as an employee, employer and also as a citizen.

It is intended that by the end of the course, the student is able to:

Objective 1: To be able to describe different types of existing firms companies and their financing methods.
Objective 2: To possess a basic vocabulary of accounting (balance sheet, profit and loss account, assets, liabilities, net worth, profits, depreciation, etc.).
Objective 3: To identify environment variables which can influence the firm.
Objective 3: To possess a basic vocabulary of economy (opportunity cost, supply and demand, price-elasticity of demand, public deficit, public debt, GDP, economic growth, potential GDP, output gap, inflation, CPI, unemployment, NAIRU, productivity, etc.).
Objective 5: To solve problems and exercises of economic models (supply and demand, aggregate supply and aggregate demand, etc.).
Objective 6: To be able to analyse and interpret economic events and economic-policy proposals with the economic tools presented.
Objective 7: To know where to find and how to use economic information (non-specialised press, INE, Human Development Report, OCDE, EUROSTAT, World Bank, etc.).
Objective 8: To have the capacity to write and to argue with more criteria about economic topics.
# Study load

<table>
<thead>
<tr>
<th></th>
<th>Total learning time: 150h</th>
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<tbody>
<tr>
<td>Hours large group:</td>
<td>60h</td>
</tr>
<tr>
<td>Hours medium group:</td>
<td>0h</td>
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<tr>
<td>Hours small group:</td>
<td>0h</td>
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<tr>
<td>Guided activities:</td>
<td>0h</td>
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<tr>
<td>Self study:</td>
<td>90h</td>
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</tbody>
</table>
# 240041 - Economics and Business

## Content

<table>
<thead>
<tr>
<th>1. First economic models: the production possibilities frontier and comparative advantage</th>
<th>Learning time: 15h</th>
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</thead>
</table>
| **Description:**  
- The concept of scarcity and its implications (need to choose and opportunity cost)  
- A tool to illustrate scarcity and efficiency: the production possibilities frontier  
- To illustrate with the production possibility frontier a very simple case in which the advantages of specialisation and trade are demonstrated (principle of the comparative advantage) | Theory classes: 6h  
Self study : 9h |
| **Specific objectives:** | 3, 4, 5 |

<table>
<thead>
<tr>
<th>2. Supply and demand</th>
<th>Learning time: 20h</th>
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</table>
| **Description:**  
- Concept of market mechanism  
- Concept of perfect competition  
- Tool to illustrate the concept of market mechanism: the demand and supply curves  
- Illustration with the supply and demand graph of the introduction of a maximum or minimum price in a competitive market  
- Definition of price elasticity of demand  
- Other elasticities of demand and price elasticity of supply  
- The relationship between the price elasticity of demand and total revenue of producers  
- Relationship between price elasticities of respectively the demand and supply curves and tax incidence | Theory classes: 8h  
Self study : 12h |
| **Specific objectives:** | 3, 4, 5 |

<table>
<thead>
<tr>
<th>3. Virtues and limitations of the market</th>
<th>Learning time: 15h</th>
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</table>
| **Description:**  
- The 3 functions of the price in a market economy  
- The concept of the Invisible Hand  
- Microeconomic market failures (imperfect competition, externalities, public goods, common resources)  
- The 4 market structures: perfect competition, monopoly, oligopoly, monopolistic competition | Theory classes: 6h  
Self study : 9h |
| **Related activities:**  
Practical project |  
**Specific objectives:** | 3, 4, 5, 6 |
# 4. The firm: concept and types of firms

<table>
<thead>
<tr>
<th>Learning time: 20h</th>
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<tr>
<td>Theory classes: 8h</td>
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<tr>
<td>Self study: 12h</td>
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</table>

**Description:**
- The nature of the firm
- Types and legal forms of the firm
- Forms of business financing
- Annual accounts (principles)

**Specific objectives:**
1, 2, 4

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# 5. The government budget

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<th>Learning time: 10h</th>
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<tr>
<td>Theory classes: 4h</td>
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<tr>
<td>Self study: 6h</td>
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**Description:**
- Acquire knowledge of vocabulary relating to tax matters (what it is and how it is calculated).
- Classification of taxes (direct taxes vs. indirect taxes, progressive taxes, proportional and regressive)
- Government budget balance (budget deficit, budget surplus)
- Public Debt

**Specific objectives:**
3, 4, 5, 6, 7, 8

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# 6. Macroeconomic indicators I: GDP

<table>
<thead>
<tr>
<th>Learning time: 15h</th>
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<tr>
<td>Theory classes: 6h</td>
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<tr>
<td>Self study: 9h</td>
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</table>

**Description:**
- Gain understanding of the vocabulary related to macroeconomic aggregates I: GDP and its uses (what it is and how it is calculated)
- Two ways to calculate GDP
- GDP and its components
- Circular flow of income
- Disposable income
- Real GDP vs. nominal GDP
- Economic Growth
- GDP Deflator
- Is GDP per capita is a good indicator of well-being?

**Specific objectives:**
3, 4, 5, 6, 7, 8
### 7. Macroeconomic indicators II: unemployment rate and inflation rate (with CPI)

<table>
<thead>
<tr>
<th>Learning time: 5h</th>
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<tbody>
<tr>
<td>Theory classes: 2h</td>
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<tr>
<td>Self study: 3h</td>
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</table>

**Description:**
- Gain understanding of the vocabulary concerning the macroeconomic aggregates II: the unemployment rate and the inflation rate (the CPI) (what it is and how it is calculated)
- Unemployment rate
- Labour force participation rate
- CPI
- Inflation rate (with the CPI)
- Core Inflation

**Specific objectives:**
3, 4, 6, 7, 8

### 8. Aggregate supply and aggregate demand

<table>
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<tr>
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<td>Theory classes: 8h</td>
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<tr>
<td>Self study: 12h</td>
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**Description:**
- Two sides of the economy (aggregate supply and aggregate demand) and two time horizons (short run and long run)
- Two schools: Classics Vs. Keynesians
- Concepts of potential GDP, output gap, NAIRU, cyclical unemployment and structural unemployment.
- Aggregate demand curve
- Aggregate supply curve in the short run
- Aggregate supply curve in the long run
- To study the determinants of aggregate supply in the long term (which determines the capacity of a country)
- Productivity determinants
- Role of entrepreneurship and innovation
- Fiscal policy and how government can influence aggregate demand with fiscal instruments (taxes and government spending)
- Discretionary fiscal policy and its disadvantages
- Automatic stabilizers
- Cyclical and structural budget balance

**Specific objectives:**
3, 4, 5, 6, 8
## 9. Money and Commercial Banks

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<thead>
<tr>
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<td>Theory classes: 4h</td>
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<tr>
<td>Self study: 6h</td>
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</table>

### Description:
- Definition of money and monetary aggregates (M0, M1, M2)
- Money creation by the commercial bank (money multiplier)

### Specific objectives:
3, 4, 5, 6, 8

## 10. Central Bank and Monetary Policy

<table>
<thead>
<tr>
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<tr>
<td>Theory classes: 4h</td>
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<tr>
<td>Self study: 6h</td>
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</table>

### Description:
- How the central bank can influence the quantity of money circulating in the economy and thus aggregate demand
- The instruments of monetary policy of the central bank
- The monetary transmission mechanism (how a change in the quantity of money affects aggregate demand)

### Specific objectives:
3, 4, 5, 6, 8

## 11. The Environment of the Firm: Macro-environment and Industry/Market Environment

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<tr>
<td>Self study: 6h</td>
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### Description:
- Distinguish two dimensions of the firm's environment: macro-environment (political-legal, economic, social, technological) and industry/market
- PEST analysis (principles)
- Analysis of the 5 forces Porter (principles)
- Application to business cases

### Specific objectives:
6
## Planning of activities

<table>
<thead>
<tr>
<th>CLASSROOM ACTIVITIES</th>
<th>Hours: 0h</th>
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<tbody>
<tr>
<td></td>
<td>Self study: 0h</td>
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<table>
<thead>
<tr>
<th>1. CLASS (THEORY, PROBLEMS AND APPLICATIONS)</th>
<th>Hours: 60h</th>
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<tr>
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<td>Theory classes: 60h</td>
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**Description:**
Explanation of the contents (theory and applications of economic theory to real cases) by the professor. Solving exercises and problems by the professor in collaboration with the students.

**Support materials:**
- Chapters of economics textbook used (see basic bibliography).
- Explanation of the various economic tools in the "guai de trabajo" (available at the copy shop or Atenea).
- Applications in the "guia de trabajo" (available at the copy shop or Atenea).
- Slides used by professor (available in Atenea).
- Texts (e.g. press articles) to comment in class (available at the Atenea).
- Photocopies (available in Athena).
- Short questions, problems and exercises working guide (available at the copy shop or Atenea).

**Specific objectives:**
1, 2, 3, 4, 5, 6

<table>
<thead>
<tr>
<th>2. EVALUATION ACTIVITIES</th>
<th>Hours: 4h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 4h</td>
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**Description:**
Set of written exams (partial and final exam) that the student has to perform (theory, concepts, exercises, text comments).

**Support materials:**
The student will be informed about which part of each exam can be carried out with support material for single use (calculator, book, guide work, notes, etc.) and which part without supporting material.

**Descriptions of the assignments due and their relation to the assessment:**
Solved written exam.

**Specific objectives:**
1, 2, 3, 4, 5, 6, 8

<table>
<thead>
<tr>
<th>SELF STUDY</th>
<th>Hours: 0h</th>
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<tr>
<td></td>
<td>Self study: 0h</td>
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<table>
<thead>
<tr>
<th>1. ASSIGNMENTS</th>
<th>Hours: 30h</th>
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<tr>
<td></td>
<td>Self study: 30h</td>
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</table>
3. PREPARATION OF THE WRITTEN EXAMS

**Description:**
Study related to the contents taught in the classes.

**Support materials:**
- Chapters of the economics textbook used (see basic bibliography).
- Explanation of the different economic tools in the course guide (available at the copy shop or in Atenea) chips.
- Solved problems and exercises and applications in the course guide (available at the copy shop or in Atenea).
- Solved exams of previous semesters (available in Atenea).
- Photocopies (available in Atenea).
- Slides used by the teacher (available in Atenea).
- Support reading (newspaper articles...) (available in Atenea).

**Specific objectives:**
1, 2, 3, 4, 5, 6, 8

**Hours:** 60h
Self study: 60h
The evaluation of the student will be based on its evolution during the course and will take into account the marks obtained in:

- The partial exam (40%), there will be a theory and practical part (conceptual questions, exercises, text comment, etc.).
- The final exam (45% +, if necessary, the 40% of the retaking of the partial exam). Each one of these tests will also have a theory and practical part (conceptual questions, exercises, comment of a text, etc.).
- The practices, obtained by the performance and submitted, in the schedule dates, of the tasks proposed by the professor. (Marks from previous semesters will not be saved to students who have repeated).

It is expected that with the partial exam (40%), the student can free a part of the content of the course (see the rules of the exams settings).

The final exam will consist of two parts: a "retake" part, if necessary, of the partial exam (40%), and another part of the rest of the contents of the course not yet evaluated.

The final mark will be, according to what has been described, one of the following:

\[ N_{\text{final}} = 0.4N_{\text{pp}} + 0.45N_{\text{ef}} + 0.15N_{\text{pract}} \]
\[ N_{\text{final}} = (0.4+0.45)N_{\text{ef}} + 0.15N_{\text{pract}} \]

\( N_{\text{final}} \): Final mark  
\( N_{\text{ef}} \): Mark of the final exam  
\( N_{\text{pp}} \): Mark of the partial exam  
\( N_{\text{pract}} \): Mark of assignments, etc.

The re-evaluation of the student will be held in the month of July. Only the final exam (final part) can be re-evaluated (i.e. the exam concerning the themes of the syllabus seen during the second half of the semester).

The final mark after the re-evaluation will be as follows:

\[ N_{\text{finalr}} = 0.40 N_{\text{pp}} + 0.45N_{\text{efr}} + 0.15 N_{\text{pract}} \]

\( N_{\text{finalr}} \): Final mark after the re-evaluation  
\( N_{\text{efr}} \): Mark of the re-evaluated final exam (final part)  
\( N_{\text{pp}} \): Mark of the partial exam. (If the student had to realise two partial exams during the teaching semester (the partial exam in the middle of the semester and the "retake" partial exam at the end of the semester) we will take into account the mark of the "retake" partial exam.)  
\( N_{\text{pract}} \): Mark of assignments, etc.
Regulations for carrying out activities

The partial exam (40%) will last a maximum time set by the School.

The final part will consist of two parts:

- A compulsory part (45%) for all students, which will include the rest of the content of the course not included in the partial exam.
- Another part (40%), compulsory for the students who have failed the partial exam (mark<4.00). The mark obtained in the final exam will always be taken into account, whether it is lower as if is higher than the partial exam. The students who in the partial exam obtained a mark lower than 4.00 and do not realise the recovery of this part of the exam, will get a final mark of not presented.

All the exams include a theoretical part and a practical part (problems, exercises, text analysis ...). The student will be informed in each exam which part of the exam can be carried out with support material for single use (calculator, book, guide work, notes, etc.) and which part without supporting material.

Bibliography

Basic:


Complementary:


Others resources:

- Slides, presentations, photocopies, etc. used by the professor during each session will be available for students in the ATENEA platform.
- Wordings of projects and text reviews will be available for students in the ATENEA platform.