

## 27449 - Innovation, Growth and Sustainability

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 27449 - Innovation, Growth and Sustainability

**Faculty / School:** 109 - Facultad de Economía y Empresa

**Degree:** 417 - Degree in Economics

**ECTS:** 5.0

**Year:** 4

**Semester:** Second semester

**Subject Type:** Optional

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

#### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

#### 4.2.Learning tasks

#### 4.3.Syllabus

#### **LESSON 1. INTRODUCTION: INTERACTIONS BETWEEN INNOVATION, ECONOMIC GROWTH AND SUSTAINABILITY**

1. ECONOMIC GROWTH: Empirical and theoretical panoramical view. The decrease of the capital productivity. Solow residual. Exogenous and endogenous growth models. A practical case: Spain 1960-2007.
2. THE CONECTION INNOVATION-ECONOMIC GROWTH: Types of technological change.
3. THE CONECTION ECONOMIC GROWTH-SUSTAINABILITY: The límites to the sustainability of the economic growth.
4. THE INTERACCIÓN SUSTAINABILITY- ECONOMIC GROWTH- INNOVATION: The need of closing he circle.
5. OUTLINE OF THE CONTENT AND THE DEVELOPMENT OF THE COURSE.

#### **LESSON 2. MODELS OF ECONOMIC GROWTH WITH ONE SECTOR OF ACCUMULATION**

1. RAMSEY MODEL WITHOUT TECHNICAL PROGRESS.

2. RAMSEY MODEL WITH TECHNICAL PROGRESS.
3. AK MODEL.
4. AN AK MODEL AS REDUCED FORM OF GROWTH WITH KNOWLEDGE DIFFUSION.
5. AN AK MODEL AS REDUCED FORM OF GROWTH WITH PUBLIC INFRASTRUCTURES.

### **LESSON 3. MODELS WITH ECONOMIC GROWTH WITH TWO ACCUMULATION SECTORS**

1. A MODEL OF EXPANSIÓN OF THE VARIETY OF INTERMEDIATE GOODS.
2. A MODEL OF EXPANSION OF THE VARIETY OF FINAL GOODS.
3. THE IMPORTANCE OF EDUCATION AND HUMAN CAPITAL IN THE ECONOMIC GROWTH PROCESS.
4. SCHUMPETERIAN MODELS OF ECONOMIC GROWTH
5. GPT: GENERAL PURPOSE TECHNOLOGÍES

### **TEMA 4. MODELS OF ECONOMIC GROWTH WITH SUSTAINABILITY IMPLICATIONS**

1. THE CONCEPTS OF NATURAL CAPITAL AND CIRCULAR ECONOMY.
2. ECONOMIC GROWTH WITH RENEVABLE NATURAL RESOURCES.
3. ECONOMIC GROWTH WITH NON-RENEVABLE NATURAL RESOURCES.
4. ECONOMIC GROWTH AND THE ENVIRONMENT QUALITY.

### **LESSON 5. RESEARCH, DEVELOPMENT AND INNOVATION POLICIES**

1. COMPETITION AND INNOVATION. INSTRUMENTS OF PUBLIC INTERVENTION.
2. EXTERNALITIES AND INNOVATION. INSTRUMENTS OF PUBLIC INTERVENTION.
3. EDUCATION POLÍCIAS.
4. PATENT POLÍCIAS.

### **LESSON 6. SUSTAINABILITY POLICIES**

- 1.- DISCUSSION ON THE CONCEPT OF SUSTAINABILITY.
- 2.- RENEVABLE RESOURCES. INSTRUMENTS OF PUBLIC INTERVENTION.
- 3.- NON-RENEVABLE RESOURCES. INSTRUMENTS OF PUBLIC INTERVENTION.
- 4.- ENVIRONMENT QUALITY. INSTRUMENTS OF PUBLIC INTERVENTION.

#### **4.4.Course planning and calendar**

#### **4.5.Bibliography and recommended resources**