



## PRESENTATION

**Brief description of the course:** This course expands the knowledge acquired in the past (through Principles of Macroeconomics and Macroeconomics: Theory and Policy), presenting several analytical models. There are both models of economic growth, such as the extended Solow and endogenous growth models, and models about the behavior of consumers and firms that allow us to understand the business cycles and the policy responses to them. As it is based on models, the course is technical.

- **2026-27**
- **Type of degree:** Economics
- **Module/Subject matter:** Economic theory/1.2 (Macroeconomics)
- **ECTS:** 6
- **Year, semester:** 2nd year, 2nd semester
- **Type:** Compulsory
- **Professor in charge:** Tommaso Trani
- **Language:** English
- **Time:** Monday, 17:30-19:30 (Ed. Amigos Room 10); Thursday, 8:00-10:00 (Ed. Amigos Room 12)
- **Venue:** See the [official timetable](#) of the School.

\*Students with special education needs: please contact the professor of the course.

## LEARNING OUTCOMES (Competencies)

- CG1: To be familiar with different areas of the theory and/or application of economic analysis.
- CG7: To reach conclusions of a regulatory nature that are relevant to economic policy based on positive knowledge.
- SC1: To be familiar with the fundamental concepts and methods of economic theory.
- SC3: To use the concepts, theories and models of economic theory to assess the reality of the economic context.
- SC10: To apply the tools of economic theory to the analysis and discussion of real situations.

## PROGRAM

Economic growth

A. Solow-Swan model extensions

- Technological progress
- Growth policies: Saving, institutions, human capital
- Solow model with human capital: Mankiw, Romer, Weil
- Other extensions (environment, inequality...)

B. Endogenous growth

- The AK model



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- Two sector model: Steady state and transitional dynamics
- Knowledge and R&D

## Business cycles

### A. Introductory part

- Cycles and growth
- Expectations: Financial markets
- Expectations: Consumption and investment
- Shocks and transmission channels

### B. Supply-side business cycles

- Technology shocks measurement: Solow residual
- Real Business Cycles

### C. Demand-side business cycles

- Consumption, investment and public spending
- Stabilization
- Neokeynesian model

## EDUCATIONAL ACTIVITIES

As for any course attributing 6 ECTS credits, students' workload is expected to be of about 150 hours. A tentative distribution of this preparation time is as follows:

- Lectures, including practical classes = 58 hours
- Personal and team work = 86 hours
- Assessment = 6 hours.

The ADI's website of the course contains class materials for both the theoretical and practical content of the course. All the material will be posted in advance for consultation even ahead of the lectures, but further questions/applications may be considered directly during the lectures.

Students will receive further indications (relationship program-bibliography, tentative class schedule, etc.) through the intranet. Possible adjustments to the program will be announced during the lectures.

The use of laptops, mobile phones, smartwatches and similar devices is not allowed during the lectures or the exams.

Final exam: time and venue in accordance with the School's timetable of exams.

## ASSESSMENT

### GRADING IN MAY

Problem sets: 20%



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Midterm exam: 30%

Final exam: 50%

## GRADING IN JUNE

Problem sets: 20%

Midterm exam: 30%

Final exam: 50%

The final exam in June makes up for the final exam taken in May. If a student wants to additionally try to improve the grade on the midterm, he/she has to take a correspondingly longer exam and inform of his/her will to do so no later than the end of May. Consequently, the student renounces to his/her achievement during the semester and accepts whatever new grade for both midterm and final.

## DETAILS

Types of questions: multiple-choice questions, or the like, and problems. The exact structure of the exams will be announced during the course.

Final exam: *a minimum of 4/10 is required.*

Students with special education needs: please contact the professor of the course.

## HONESTY IS THE BEST POLICY

*(Ethics Committee Provisions Against Plagiarism and Copying)*

We value honesty. Without it, there can be no trust or any meaningful social relations. Therefore, the School expects honesty and fairness from all of its members: professors, non-academic staff, and students.

Dishonest behaviors will be sanctioned in accordance with the [University Norms on Student Academic Discipline of August 2015](#), and include lying, cheating in exams, and plagiarism in written work. We take such violations seriously. Depending on their gravity, these offences will be dealt with by the Professor in charge of the subject, by the Dean of Students, and in very severe cases, by the Vice President for Student Affairs.

Sanctions include:

- formal warnings
- prohibition from entering University premises for a given period
- loss of admission rights to exams
- loss of scholarships
- a failing grade for the piece of work or the whole course.

## OFFICE HOURS



Universidad  
de Navarra

Tommaso Trani ([ttrani@unav.es](mailto:ttrani@unav.es))

- Office 2240, Edificio Amigos. Floor: 2, "hilera".
- Hours: TBA.

## **BIBLIOGRAPHY AND RESOURCES**

### **Part I: Economic Growth**

Jones, Charles I. Introduction to Economic Growth. [Find it in the library](#)

Aghion, Phillipe and Howitt, Peter. The Economics of Growth. [Find it in the library](#)

### **Part II: Business Cycles**

Williamson, Stephen. Macroeconomics. [Find it in the library](#).