UAB
Universitat Autònoma de Barcelona

Economic Growth

Code: 102486
ECTS Credits: 6

2024/2025

Degree	Type	Year
2501573 Economics	OT	3
2501573 Economics	OT	4

Contact

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Teachers

(External) Pau Roldan Blanco

Teaching groups languages

You can view this information at the end of this document.

Prerequisites

Have passed the subjects of Macroeconomics I, Macroeconomics II and Macroeconomics III.

Objectives and Contextualisation

This course presents the standard models for analyzing economic growth and long-term income differences between countries. We will analyze models where growth is generated through capital accumulation and models where growth arises from the technological decisions of firms.

Competences

Economics

- Capacity for adapting to changing environments.
- Demonstrate initiative and work individually when the situation requires it.
- Demonstrate thorough understanding of the concepts related to economic growth and technological innovation.
- Identify the processes that govern the operation of markets in different competition systems, different scenarios of interrelationship and different timescales.
- Introduce changes in the methods and processes in the field of knowledge to be able to offer innovative answers to the needs and demands of society.

- Lead multidisciplinary and multicultural teams, implementing new projects and coordinating, negotiating and managing conflicts.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills in order to undertake further training with a high degree of autonomy.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Take decisions in situations of uncertainty, demonstrating an entrepreneurial and innovative attitude.
- Work well in a team, being able to argue proposals and validate or reject the arguments of others in a reasoned manner.

Learning Outcomes

1. Analyse the relationship between scientific and technological breakthroughs.
2. Assess the main variables of the accumulation of factors, technology and efficiency and how these variables explain the rate of growth of the income per capita.
3. Capacity to adapt to changing environments.
4. Contrast data with models and perform a quantitative analysis.
5. Demonstrate initiative and work independently when required.
6. Interpret how the accumulation of factors, technology and efficiency determine income.
7. Lead multidisciplinary and multicultural teams, implement new projects, coordinate, negotiate and manage conflicts.
8. Make decisions in situations of uncertainty and show an enterprising and innovative spirit.
9. Propose new experience-based methods or alternative solutions.
10. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
11. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
12. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
13. Students must develop the necessary learning skills in order to undertake further training with a high degree of autonomy.
14. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
15. Use models to analyse economic growth.
16. 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

TOPIC 1: INTRODUCTION TO ECONOMIC GROWTH

a. Empirical observations on global income levels

b. Welfare indicators in the data

c. Economic convergence between countries

TOPIC 2: MODELS OF EXOGENOUS GROWTH

a. The Solow Model

i. Dynamics of capital and the golden rule.

ii. The Solow model with exogenous growth.

iii. The problem of dynamic inefficiency.

iv. Conditional convergence between countries.

b. The Ramsey-Cass-Koopmans Model

i. Intertemporal consumption-savings choice.

ii. The Euler equation and the transversality condition.

iii. The dynamical system, convergence, stability, and response to exogenous shocks.

iv. The savings rate and the process of structural transformation.

TOPIC 4: TOWARDS ENDOGENOUS GROWTH

a. The AK model.

b. Endogenous growth from knowledge externalities.

c. The semi-endogenous growth model.

TOPIC 5: MODELS OF EXPANDING VARIETIES: THE ROMER MODEL (1990)

a. Knowledge as a non-rival and partially exclusive good.

b. The optimization problem of the innovative sector.

c. Knowledge externalities and the social planner problem.

d. Implications for the design of innovation policies.

TOPIC 6: DIRECTED TECHNOLOGICAL CHANGE

a. The direction of technological change: price effects and market size effects.

b. Application: wage gaps and the skill premium.

TOPIC 7: SCHUMPETERIAN GROWTH MODELS

a. Growth through creative destruction.

b. The Aghion-Howitt (1992) quality ladder model.

c. Application: the relationship between innovation and imperfect competition in the product market.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			

Exercises and group discussion	17	0.68	9, 14, 13, 12, 10, 11, 16
Lectures	32.5	1.3	1, 2, 4, 6, 15
Type: Supervised			
Tutorials	20	0.8	9, 14, 16
Type: Autonomous			
Readings	20	0.8	1, 2, 4, 5, 6, 11, 15
Studying, preparation of homeworks and group discussion	47	1.88	2, 3, 4, 5, 6, 7, 8, 9, 13, 12, 10, 11, 16

The tipe of teaching methodology planned for the course is in-site teaching.

This subject combines lectures with ITC support and more applied sessions devoted to problem solving.

The proposed teaching methodology may undergo some modifications according to the restrictions imposed by the health authorities on on-campus courses.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class participation	5%	0	0	12, 16
Final exam	50%	2	0.08	2, 3, 4, 5, 6, 8, 14, 13, 10, 11, 15
Homework	10%	10	0.4	1, 2, 3, 4, 5, 6, 7, 8, 9, 14, 13, 12, 10, 11, 15
Midterm exam	35%	1.5	0.06	2, 3, 4, 5, 6, 8, 14, 13, 10, 11, 15

Evaluation Criteria

The evaluation of the course will be carried out continuously and will include four evaluation activities of three different typologies, one of them will be a final exam with a weight of 50% in the final grade, one midterm exam with a weight of 35% in the final grade, a series of homeworks with a total weight of 10% in the final grade and class participation with a wieght of 5%.

Calendar of evaluation activities

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 264. 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: e-Formulari per a la reprogramació de proves.

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

"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 2 of Article 261. The recovery (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject greater than or equal to 3.5 and less than 5.

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.

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 11 of Article 266. Results of the evaluation. (UAB Academic Regulations).

This subject does not offer the option for comprehensive evaluation.

Bibliography

Basic

- ACEMOGLU, D. (2009): Introduction to Modern Economic Growth. Princeton University Press.

- BARRO, R., and X. SALA-I-MARTIN (1999): Economic Growth. The MIT Press, Cambridge, Massachusetts.

- JONES, C. and D. VOLLRATH (2024): Introduction to Economic Growth. 4th Edition. W.W. Norton & Company.

Complementary

- AGHION, P., and P. HOWITT (1992): *A Model of Growth through Creative Destruction*, Econometrica, 60(2), 323-352.

- JONES, C. (2015): *The Facts of Economic Growth*, NBER Working Paper No. 21142.

- JONES, C. (2022): *The Past and Future of Economic Growth: A Semi-Endogenous Perspective*, Annual Review of Economics, Vol. 14, pp 125-152.

- ROMER, P. M. (1986): *Increasing Return and Long-run Growth*, Journal of Political Economy, 94, 1002-1036.

- ROMER, P. M. (1990): *Endogenous Technological Change*, Journal of Political Economy, 98, S71-S102.

Software

Without specific computer programs.

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	8	English	first semester	morning-mixed
(TE) Theory	8	English	first semester	morning-mixed