Universitat Autònoma de Barcelona

2019/2020

Natural Resources Economics

Code: 102449
ECTS Credits: 6

Degree	Type	Year	Semester
2501573 Economics	OT	4	0

Contact

Name: Xavier Cussó Segura
Email: Xavier.Cusso@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Roc Padro Caminal

Prerequisites

They have not been established. The contents are complementary to the subject Environmental Economics

Objectives and Contextualisation

The course has a double objective: on the one hand, to present the main issues raised by the vision of the economy of natural resources and on the other hand to see the place that occupies this vision in the current economic system.

The course will begin with the study of some current ecological problems, the concept of "sustainable development" and the changes in the National Accounting from the ecological point of view. The second part of the course will explain the Economic Theory of natural resources and environmental impacts.

Competences

- Analyse quantitative and qualitative information referring to economic phenomena and variables.
- Capacity for adapting to changing environments.
- Identify the environmental and social impacts associated with economic activity.
- Lead multidisciplinary and multicultural teams, implementing new projects and coordinating, negotiating and managing conflicts.
- 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.

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 different interpretations and solutions considered to deal with the problems associated with the sustainability of economic systems, from different theoretical perspectives.
3. Apply the main methods to assess projects.
4. Capacity to adapt to changing environments.
5. Create transverse and longitudinal tables of demographic behaviour and other social phenomena, and interpret the main synthetic indicators used.
6. Examine some of the consequences of demographic fluctuations and the changes in the age structure on the labour market and the structure of the demand of goods and services.
7. Identify the energy and food changes that have taken place during the contemporary economic growth.
8. Identify the main current environmental problems, and their relationship with population growth and the current models of economic development.
9. Know how to correctly use the analytical concepts of ecological economy, and the instruments of environmental economic policy.
10. Lead multidisciplinary and multicultural teams, implement new projects, coordinate, negotiate and manage conflicts.
11. Organise work, in terms of good time management and organisation and planning.
12. Perform an integrated analysis of the economic, demographic, social and ecological variables, on the basis of different historical experiences.
13. Recognise the effects of age, generation and momentum on demographic and social behaviour.
14. Recognised the biophysical aspects related to the economic activity.
15. Relate the international economic and ecological aspects in the different phases of contemporary economic growth.
16. Select and generate the information needed for each problem, analyse it and make decisions based on this information.
17. Understand the economic and political debates about the evolution of demographic growth and migration.
18. Use standardisation methods to isolate the effects of structure on the added indicators.

Content

1. ECONOMY, POPULATION AND NATURAL RESOURCES
1.1 Current context, from the first oil crisis until today
1.2 Thermodynamic principles and economics
1.3 The endosomatic and exosomatic use of energy by humans
1.4 Relationship between inequalities, poverty and environmental degradation

2. SUSTAINABLE DEVELOPMENT
2.1 Weak and strong sustainability
2.2 Demographics and carrying capacity
2.3 Theories of needs and satisfiers
2.4 Economic growth and sustainable development
2.5 Multicriteria analysis, potentials and limits

3. MACROECONOMIC ACCOUNTING
3.1 The role of Natural Resources in the GDP
3.2 Proposals of ecologically corrected GDP
3.3 Other indicators of human well-being and ecological status

4. ENVIRONMENTAL POLICY INSTRUMENTS
4.1 Regulation and economic incentives
4.2 Pollution taxes
4.3 Comparison between tax and quantitative limit
4.4 Commercializable pollution permits
4.5 The expanded effect of taxes
4.6 Subsidies
4.7 Recycling and reuse

5. PROBLEMS OF ENVIRONMENTAL ACCOUNTING
5.1 The concept of "discount of the future"
5.2 Arguments and criticisms of the social discount rate
5.3 Risk and uncertainty
5.4 The criterion of Krutilla
5.5 The value of environmental goods and valuation methods

6. EXPLOITATION OF NON-RENEWABLE RESOURCES
6.1 Non-renewable natural resources
6.2 Recoverable resources and estimated reserves
6.3 The Hotelling rule
6.4 The management of energy resources and the energy transition
6.5 The management of metallic mineral resources
6.6 The management of non-metallic mineral resources

7. EXPLOITATION OF RENEWABLE RESOURCES
7.1 Renewable natural resources
7.2 Growth models
7.3 The sustainable management of fisheries
7.4 Sustainable forest management and ecosystem services
7.6 Other renewable resources
7.7 Forms of ownership and environmental sustainability

8. CLIMATE CHANGE
8.1 Global environmental change
8.2 Climate change
8.3 Current trends and forecasts of climate change
8.4 Global and local climate change policies
8.5 Risks over natural resources
8.6 The role of decisions and behavior towards mitigation.

Methodology

1. Master class

The teacher will perform an analytical conceptualization and an updated synthesis of each of the study topics shown in the didactic units. The objective of this activity is to facilitate the transmission of knowledge and the motivation for the analysis of the relationship between human activity and the environment, which are focused in order to promote active and cooperative learning.

2. Practical sessions

They are structured based on the work of the groups, who will present a summary and analysis of a documentary, relate it to the theory.

3. Tutorials

The process of learning and acquisition of competences will be supervised by the teacher through individual and / or group tutorials. The teacher of the subject will be available to the students to solve the doubts and follow the evolution of the mentioned process of learning and acquisition of competences of the students.

4. Virtual campus of the subject

In face-to-face teaching, the Virtual Campus is a useful tool, so that students have a complementary space where they can access different types of materials that the teacher considers essential to advance in the learning process of the subject. To access it you just have to go to the website of the UAB and there you will find the link (http://www.uab.es/interactiva/default.htm), or be directly on the campus webpage virtual (https://cv2008.uab.cat/).

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lectures	33	1.32	12, 4, 13, 7, 10, 11, 15
Practical Sessions	11.5	0.46	8, 11, 15, 16
Type: Supervised			
Office hours	15	0.6	3, 4, 1, 5, 6, 14, 16, 9, 18
Type: Autonomous			
Information	17.5	0.7	4, 5, 11, 16, 18
Study	68	2.72	2, 5, 13, 17, 6, 14, 16, 9, 18

Assessment

Evaluation

The evaluation of the subject will be based on the continuous evaluation of the process of acquisition of knowledge and competences on the part of the student and will consist of:

- 2 exams, one partial and one final, of evaluation of the obtained knowledge, that will be able to combine the test and thematic questions, and that each will be worth 40% of the final grade.

- Presentation of the group work and of an individual dossier applied, that collects a summary of the discussions and analysis in the practical sessions that will count 20% of the final note.

"All students have the obligation to carry out the assessable tasks. If the student's grade mark is 5 or higher, the subject is considered exceeded and this will not be subject to a new evaluation. In the case of a grade of less than 3.5, the student will have to repeat the subject in the following year. For those students whose grade mark is equal to or greater than 3.5 and less than 5, they may be presented to the recovery test. The teachers of the subject will decide the modality of this test. When the mark of the proof of recovery is equal to or greater than 5, the final grade of the course will be APPROVED, with the maximum numerical note of 5. When the mark of the recovery test is less than 5, the final grade of the subject will be SUSPENS, with the numerical note the course mark (and not the note of the recovery test).

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

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 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 thecalendar 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 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).***

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final Exam	40	2	0.08	2, 3, 1, 8, 14, 16, 9
First Exam	40	1.5	0.06	12, 4, 7, 10, 11, 15
Presentation of the team work and the individual dossier	20	1.5	0.06	12, 2, 3, 4, 1, 5, 13, 17, 6, 7, 8, 10, 11, 14, 15, 16, 9, 18

Bibliography

Joan Martinez Alier, Jordi Roca- Economía ecológica y política ambiental, Fondo de Cultura Económica, Mexico, 2000.

Carlos Romero - Economía de los recursos ambientales y naturales, Alianza Economía, Madrid, 1997.

Tim Jackson - Prosperidad sin crecimiento. Economía para un planeta finito, Icaria-Barcelona, 2011.