Course guide
2500241 - GEA0241 - Sustainability and Environmental Ethics

Last modified: 01/10/2023

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.

Degree: BACHELOR'S DEGREE IN ENVIRONMENTAL ENGINEERING (Syllabus 2020). (Optional subject).

Academic year: 2023 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: ELISABETH ROCA BOSCH

Others: ELISABETH ROCA BOSCH, MERCÈ TABERNA TORRES, MIRIAM VILLARES JUNYENT

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
14458. Apply the methodologies of studies and evaluations of environmental impact and, in general, of environmental technologies, sustainability and waste treatment and of the management of international standards of environmental quality. Life cycle analysis, carbon footprint and water footprint and assess natural hazards (river, coastal floods, droughts, fires, soil erosion and landslides).
14465. Identify renewable energy generation techniques and energy transition concept.

Generical:
14440. Identify, formulate and solve problems related to environmental engineering.
14441. Apply the functions of consulting, analysis, design, calculation, project, construction, maintenance, conservation and exploitation of any action in the territory in the field of environmental engineering.
14442. To use in any action in the territory proven methods and accredited technologies, in order to achieve the greatest efficiency respect for the environment and the protection of the safety and health of workers and users.
14443. Apply the necessary legislation during the professional practice of environmental engineering.
14444. Apply business management techniques and labor legislation.

TEACHING METHODOLOGY

The course consists of 2.3 hours per week of classroom activity (large size group) and 1.2 hours weekly with half the students (medium size group).

The 2.3 hours in the large size groups are devoted to theoretical lectures, in which the teacher presents the basic concepts and topics of the subject, shows examples and solves exercises.

The 1.2 hours in the medium size groups is devoted to solving practical problems with greater interaction with the students. The objective of these practical exercises is to consolidate the general and specific learning objectives.

The rest of weekly hours devoted to laboratory practice.

Support material in the form of a detailed teaching plan is provided using the virtual campus ATENEA: content, program of learning and assessment activities conducted and literature.

Although most of the sessions will be given in the language indicated, sessions supported by other occasional guest experts may be held in other languages.

LEARNING OBJECTIVES OF THE SUBJECT

The historical context of the appearance of the environmental concern and the sustainable development discourse, its institutionalization until the 2030 Agenda and the 17 SDGs are presented.
It is exposed how the environmental policies for the protection of the territory have been deployed, from the protection of natural spaces and biodiversity to the organization of the landscape and its integration in urban planning.
At the urban level, the Urban Agenda is presented and the principles that from urban ecology and sustainable urban planning inspire internationally referenced actions are presented.
Issues of environmental ethics and the social dimension of sustainability are addressed through the approach to environmental conflicts of the prevailing economic model. Concepts such as social equity, environmental justice, local identity, appropriation and belonging to the place and participatory processes are discussed through current cases.

1. Know ethical practices to promote the sustainable development of the territory, both natural (PN, PEIM, etc.) and built (urban ecology, city sustainable, etc.).
2. Know the concepts of global transformation of social equity and participatory process.

Sustainability and Environmental Ethics. This course focuses on those aspects associated with the protection of the environment, ethical practices and sustainable development, taking into account international and local trends and policies. Questions will be raised about the organization and management of the natural territory (PN, PEIM, etc.) and the built territory (urban ecology, sustainable city, etc.). The concepts of social equity and processes will also be addressed.
participatory.

STUDY LOAD

Type	Hours	Percentage
Hours medium group	15,0	10.00
Self study	90,0	60.00
Hours large group	30,0	20.00
Hours small group	15,0	10.00

Total learning time: 150 h

CONTENTS

1. BACKGROUND AND HISTORICAL PERSPECTIVE OF SUSTAINABILITY

Description:
1. BACKGROUND AND HISTORICAL PERSPECTIVE OF SUSTAINABILITY
The concept of sustainable development, interpretations. Ecological phases humanity. Growth limits. Sustainable paradigms, mechanistic vs systemic paradigm.
The state of the world. Indicator systems.

Full-or-part-time: 24h
Theory classes: 8h
Practical classes: 2h
Self study : 14h

2. THE INSTITUTIONALIZATION OF SUSTAINABILITY - REGULATORY FRAMEWORK, PLANS AND POLICIES.

Description:
- Environmental assessment policies. Environmental impact studies. Strategic environmental assessment.
- Policies for the protection of the territory: from the protection of natural spaces and biodiversity to the arrangement of the landscape and its integration in urban planning.
- Urban and urban policies. From agenda 21 to the urban agenda. The principles of urban ecology and sustainable urbanism. Performances of international reference.

Full-or-part-time: 24h
Theory classes: 10h
Self study : 14h

3. THE SOCIAL DIMENSION OF SUSTAINABILITY - CONFLICTS, PERCEPTIONS, ACTORS

Description:
a. Socio-environmental conflicts. definition Characterization examples
b. The actors involved. Perceptions, attitudes and behaviors.
c. Environmental justice, equity, unequal distribution of risks.
d. Environmental ethics, gender issues, Identity and local knowledge, belonging to place, ways of life.
Polluter pays principle, prevention principle.

Full-or-part-time: 28h 47m
Theory classes: 8h
Practical classes: 4h
Self study : 16h 47m

4. METHODOLOGIES FOR ASSESSING THE SUSTAINABILITY OF PROJECTS

Description:
4. METHODOLOGIES FOR ASSESSING THE SUSTAINABILITY OF PROJECTS
b. Carbon footprint and water footprint, acv, multi-criteria indicators, assessment of ecosystem services.
c. The role of citizen participation and collaborative approaches.

Full-or-part-time: 33h 36m
Theory classes: 8h
Practical classes: 6h
Self study : 19h 36m

5. THE SOLUTIONS AND TECHNOLOGY UNDER DEBATE

Description:
new approaches/technologies/solutions to address sustainability challenges: Renewable energies, climate change; fossil fuels. Sustainable urban planning, eco-districts, mobility management, nature-based solutions for the adaptation of the water cycle and coastal risks.

Full-or-part-time: 33h 36m
Theory classes: 8h
Laboratory classes: 6h
Self study : 19h 36m

GRADING SYSTEM

The subject's grade is obtained from the continuous assessment grades.

The continuous assessment consists of doing different activities, both individual and group, of an additive and formative nature, carried out during the course (inside and outside the classroom).

The NF final grade will be the average = 0.4* (average grade of deliverable activities carried out in class) + 0.5* Work in progress + 0.10 (participation and attendance).
To pass the course, the final grade must be equal to or higher than 5.

Criteria for qualification and admission to reevaluation (Re):
Students who have failed the ordinary assessment and who have regularly taken the assessment tests for the suspended subject will have the option to take a re-evaluation test in the period set in the academic calendar. Students who have already passed or students classified as not presented or who have not submitted all of the exercises/problems (Pr) and the assignments and reports (Tr) may not take the reevaluation test of a subject.
The reevaluation (RE) will consist of a single exam covering all the content of the course. The maximum mark for the re-evaluation will be five (5.0) and the final mark for the course will be the maximum mark between the continuous evaluation and the re-evaluation exam, i.e. MAX (Ordinary Evaluation/RE).
The non-attendance of a student called to the revaluation test, held in the fixed period, will not be able to give rise to the completion of another test with a later date. Extraordinary evaluations will be carried out for those students who, due to accredited force majeure, have not been able to do any of the continuous evaluation tests. These tests must be authorized by the corresponding head of studies, at the request of the teacher responsible for the subject, and will take place within the corresponding academic period.

EXAMINATION RULES.

If one of the continuous assessment activities is not carried out in the scheduled period, it will be considered as a zero score.

BIBLIOGRAPHY

Basic:
- Garcia, E. Medio ambiente y sociedad : la civilización industrial y los límites del planeta. Madrid: Alianza, 2004. ISBN 9788420641850.
- Nel·lo, O. Aquí, no!: els conflictes territorials a Catalunya. Barcelona: Empúries, 2003. ISBN 8475963803.
- Sachs W; Santarius T. Un futuro justo. Recursos limitados y justicia global. Barcelona: Icària, 2007. ISBN 9788474269512.
- Sachs, J. La Era del desarrollo sostenible : nuestro futuro esta en juego : incorporemos el desarrollo sostenible a la agenda política internacional. Barcelona: Deusto, 2015. ISBN 9788423421800.