Information about the subject

Degree: Bachelor of Degree in Marine Sciences

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 270204 **Name:** Environmental Education

Credits: 6,00 **ECTS Year:** 2, 3, 4 **Semester:** 1

Module: Optional Itinerary: Marine Environment Management

Subject Matter: Environmental Education **Type:** Elective

Department: Oceanography and Environment

Type of learning: Classroom-based learning

Languages in which it is taught: English

Lecturer/-s:

OPM2	Jorge Juan Vicedo **(English Responsible Lecturer)**		jorge.juan@ucv.es

Module organization

Optional Itinerary: Marine Environment Management

Subject Matter	ECTS	Subject	ECTS	Year/semester
Marine Environment Geography	6,00	Geography of the marine environment	6,00	3/1
Marine Engineering	6,00	Maritime Engineering	6,00	0/1
Evaluation of Environmental Impact	6,00	Assessment of Environmental Impact	6,00	0, 2, 3, 4/1
Natural and Anthropic Risks in the Marine Environment	6,00	Natural and Anthropic Risks in the marine environment	6,00	2/1
Environmental Education	6,00	Environmental Education	6,00	2, 3, 4/1
Renewable Energies and Marine Mineral Resources	6,00	Renewable energies and marine mineral resources	6,00	This elective is not offered in the academic year 25/26

Recommended knowledge

No prerequisites

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1 The student understands the meaning and relevance of Environmental Education. He/she becomes aware of the current environmental problems.

R2 The student acquires guidelines and skills for the design of environmental education activities.

R3 The student acquires guidelines and skills for the design of environmental education activities.

R4 The student acquires guidelines and skills for the design of environmental education activities.

R5 The student projects and programs practical assumptions of environmental education.

R6 The student acquires ability in search of information from diverse sources and capacity of analysis and synthesis of this information.

R7 The student cooperates in group work with responsibility and tolerance.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB2	Students are able to apply knowledge to their work in a professional way and have the competences enabling them to state and defend views and opinions as well as perform problem-solving tasks in their field of study.				x
CB3	Students are able to collect and interpret relevant data (generally in their field of study) and give opinions that involve reflection on relevant social, scientific or ethical issues.				x
CB5	Students develop the necessary learning skills to undertake further studies with a high level of autonomy.			x	

GENERAL		Weighting			
		1	2	3	4
CG1	Capacity to analyze and synthesize			x	
CG2	Capacity to organize and plan			x	
CG3	Mastering Spanish oral and written communication		x		
CG5	Knowing and applying Basic ITC skills related to marine science		x		
CG6	Capacity to manage information (capacity to look for and analyze information coming from different types of sources)			x	
CG7	Decision making			x	
CG8	Capacity to work in interdisciplinary and multidisciplinary team			x	
CG10	Critical and self-critical capacity			x	

CG11	Capacity to learn		x		
CG12	Capacity to adapt to new situations			x	
CG16	Capacity to apply theoretical knowledge			x	
CG17	Research skills				x
CG18	Sensibility to environmental issues.			x	

SPECIFIC		Weighting			
		1	2	3	4
CE1	Knowing and understanding contents, principles and theories related to Oceanography			x	
CE2	Knowing basic sampling techniques of water column, organisms, sediment and sea-bottoms as well as basic techniques of dynamic and structural variable measurement	x			
CE4	Understanding laws regulating use of marine resources and environment			x	
CE5	Applying marine environment use planning techniques as well as resource sustainable management		x		
CE6	Applying marine instrument techniques		x		
CE7	Collecting, assessing, processing and interpreting oceanographic data, following the most recent theories			x	
CE8	Identifying and analyzing new problems and proposing solution strategies			x	
CE9	Knowing how to carry out experiments and measurements both in the laboratory and during sample collection			x	
CE10	Knowing how to use planning, designing and implementing research tools while surveying and assessing results		x		
CE11	Knowing how to do fieldwork and laboratory experiments in a safe and responsible way, promoting teamwork		x		
CE12	Describing, classifying and mapping sea bottoms and coastal areas		x		

CE13	Looking for and assessing different kinds of marine resources		x	
CE14	Designing patterns of marine protected areas management		x	
CE15	Identifying and proposing monitoring means for problems of marine pollution		x	
CE16	Proposing management models for endangered species recovery centers		x	
CE17	Developing training programs for marine and coastal areas			x
CE18	Practical experience of researching into marine climate	x		
CE19	Deeply understanding operating systems of maritime orientated companies, identifying their problems and proposing solutions		x	
CE22	Practical experience of methods of marine environmental impact assessment	x		

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6, R8	50,00%	Written test with theoretical and practical questions
R1, R3, R4, R5, R6, R7	40,00%	Delivery of guided assignments, whose objectives and contents will be proposed by the teacher
R2, R6, R7	10,00%	Oral presentation

Observations

This course is not eligible for single evaluation. According to the general evaluation and qualification regulations, the preferred evaluation system will be by means of continuous evaluation. Specifically: Questionnaires will be carried out at the end of each block of content, so that the student will be accompanied during the semester to prepare for the final exam.
- **The exam** consists in a multiple choice and written questions about the theoretical and practical contents covered during the course. The exam will take place on the date estabished in the official call.
- **The supervised works** consist in a set of tasks (questionnaires of annalysis, short-research projects on Environmental Education, simulations, etc.) developed during the practical lessons. These tasks will be submiteded through UCVnet platform in the stablished form and terms.
Attendance to practical sessions is mandatory and absence without proper justification will be counted as -0.5 points each from the final mark (out of 10 points).
- **The exposition of works** includes the development, presentation and debate of a review work of Environmental Education topics with remarkable social and economical relevance, at students' choice.
A minimum of 4.5 points (out of 10) is needed in each evaluation item, but **the course will only be passed if the average mark is equal or higher than 5 points** out of 10.
The use of artificial intelligence (AI)-based tools is subject to the discretion of the teacher, who may establish specific limits or conditions depending on the training or assessment activity.

MENTION OF DISTINCTION:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with 9 Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M1	Teacher presentation of contents, analysis of competences, explanation and in-class display of skills, abilities and knowledge.
M2	Group work sessions supervised by the professor. Case studies, diagnostic tests, problems, field work, computer room, visits, data search, libraries, on-line, Internet, etc. Meaningful construction of knowledge through interaction and student activity.
M4	Supervised monographic sessions with shared participation.
M5	Application of multidisciplinary knowledge.
M6	Personalized and small group attention. Period of instruction and/or guidance carried out by a tutor to review and discuss materials and topics presented in classes, seminars, readings, papers, etc.
M8	Set of oral and/or written tests used in initial, formative or additive assessment of the student.
M9	Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical , practical and/or small-group tutoring sessions. Work done on the university e-learning platform (www.plataforma.ucv.es)

M10 Student's study: Individual preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical, practical and/or small-group tutoring sessions. Work done on the university e-learning platform (www.plataforma.ucv.es).

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
ON-CAMPUS CLASS M1	R1, R2, R3, R4, R5, R6, R7, R8, R9	30,00	1,20
PRACTICAL CLASSES M2	R1, R2, R3, R4, R5, R6, R7, R8, R9	17,00	0,68
SEMINAR M4	R1, R2, R3, R4, R5, R6, R7, R8, R9	2,00	0,08
GROUP PRESENTATION OF ASSIGNMENTS M5	R1, R2, R3, R4, R5, R6, R7, R8, R9	6,00	0,24
TUTORIAL M6	R1, R2, R3, R4, R5, R6, R7, R8, R9	3,00	0,12
ASSESSMENT M8	R1, R2, R3, R4, R5, R6, R7, R8, R9	2,00	0,08
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK M9	R1, R2, R3, R4, R5, R6, R7, R8, R9	30,00	1,20
INDEPENDENT WORK M10	R1, R2, R3, R4, R5, R6, R7, R8, R9	60,00	2,40
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
BLOCK 1. Introduction to Environmental Education	**Unit 1.-** Concept, definition and objectives of Environmental Education (EE). Types of EE. EE in the marine and maritime-terrestrial environments. Relationship and integration of the subject with other disciplines of the Degree in Marine Sciences. **Unit 2.-** Justification and need for EE. Socioeconomic development and impact on the environment: historical perspective of the awakening of environmental awareness. Sustainable development and integration of EE as an instrument of Environmental Management. **Unit 3.-** Regulatory framework of EE in Europe and Spain.
BLOCK 2. Environmental Education from a social and economic perspective	**Unit 4.-** EE in the educational system. Treatment of EE from Primary Education to University levels. EE for seniors. EE for groups and people with disabilities. **Unit 5.-** EE in the productive system: EE transversality in private companies and companies dedicated to EE. Environmental education and consumption. **Unit 6.-** EE in the framework of Christianity: Catholic Church and the Environment. **Unit 7.-** Current and future perspective of EE. EE in a changing world. The role of Environmental Education in the economic crisis of 2020 and in the new socioeconomic scenario derived from covid-19.

BLOCK 3. Approaches, methodologies and resources in Environmental Education	**Unit 8.-** The "White Book of Environmental Education" in Spain: content, objectives, structure and practical considerations of interest in Marine Sciences. **Unit 9.-** Autonomous strategies in EE. EE institutions, programs and projects within the framework of public administration. EE in the Valencian Region. **Unit 10.-** Research methods, social intervention and development of actions in EE. Planning and experimental design, social research techniques and data analysis. **Unit 11.-** Scientific and informative resources in EE. Journals and forums for the divulgation of information in EE. The role of the mass media (cinema, radio and press) and social networks (Facebook, Twitter and Instagram) in EE. **Unit 12.-** Didactics of EE. Participation, communication and pedagogical tools in EE strategies
BLOCK 4. Projects of Environmental Education for the professional profile of Marine Sciences graduates	**Unit 13.-** The EE Project as a technical document: structure, contents and scope. Calls and institutions for the development of EE strategies. **Unit 14.-** EE projects in the marine domain. **Unit 15.-** EE projects in the maritime-terrestrial domain.

Organization of the practical activities:

	Content	Place	Hours
PR1.	Formal and Informal Environmental Education: Previous Case Studies and Critical Analysis	Lecture room	1,00
PR2.	Environmental education in the press and social networks	Lecture room	2,00
PR3.	Planning an environmental education strategy	Lecture room	2,00
PR4.	Design of an interpretive itinerary	Technical visit	2,00
PR5.	Planning a social research in Environmental Education	Lecture room	2,00
PR6.	Analysis and discussion of data from a social research in Environmental Education	Lecture room	2,00
PR7.	Execution of an environmental education campaign	Lecture room	2,00
PR8.	Execution of an environmental education campaign	Lecture room	2,00
PR9.	Fieldwork visit	Field visit	2,00

Temporary organization of learning:

Block of content	Number of sessions	Hours
BLOCK 1. Introduction to Environmental Education	3,50	7,00
BLOCK 2. Environmental Education from a social and economic perspective	8,00	16,00
BLOCK 3. Approaches, methodologies and resources in Environmental Education	10,00	20,00
BLOCK 4. Projects of Environmental Education for the professional profile of Marine Sciences graduates	8,50	17,00

References

Aramburu, F. (2000) Medio Ambiente y Educación. Madrid: Síntesis.
Barrón-Ruiz, A.y Muñoz-Rodríguez, J.M. (2019) XIII Seminario de investigaciones en educación ambiental: crear y hacer educación ambiental. Organismo Autónomo Parques Nacionales. Ministerio para la Transición Ecológica.
Benayas, J. y Marcén, C. (2019) Hacia una educación para la sostenibilidad: 20 años después del Libro Blanco para La educación ambiental en España 2ª Edición. Edita Centro Nacional de Educación Ambiental (CENEAM) y Organismo Autónomo de Parques Nacionales, Ministerio para la Transición Ecológica, Madrid.
Blair, D. (2009) The Child in the Garden: An Evaluative Review of the Benefits of School Gardening, The Journal of Environmental Education, 40:2, 15-38.
Cárdenas, F. (2008) Crisis ambiental y cristianismo. Teología y Vida, Vol. XLIX: 771 - 797.
Castellanos-González, M.E., Miranda-Vera, C.E., Morales-Calatayud, M., García-Dueñas, R., Moreira-González, A.R., León-Pérez, A.R., Alomá-Oramas, R.M. (2020) Social knowledge networks for promoting environmental education in coastal communities from central-southern region of Cuba. Regional Studies in Marine Science 35: 101-115.
D'Amato, L.G. y Krasny, M.E. (2011) Outdoor Adventure Education: Applying Transformative Learning Theory to Understanding Instrumental Learning and Personal Growth in Environmental Education. The Journal of Environmental Education, 42:4, 237-254.
España, A.G. (2015) Talleres Educativos Para Construir Ecodestrezas. Organismo Autónomo Parques Nacionales. Ministerio de Agricultura, Alimentación y Medio Ambiente.
Evans, N. (2020) Is this what good pedagogy looks like? Review essay of Diverse pedagogies of place: Educating students in and for local and global environments, edited by Peter Renshaw and Ron Tooth. The Journal of Environmental Education, 51:3, 256-262.
Franquesa, T. y Sureda, J. (2003) Conocimientos básicos en Educación ambiental. Barcelona: Grao.
García Gómez, J. (2000) Estrategias didácticas en educación ambiental, Málaga Aljibe cop.
Hagevi, M. (2014) Religion and the environmental opinion in 22 countries: a comparative study. International Review of Sociology, 24:1, 91-109.
Kiptoo, B.G. (2015) The role of the Catholic Church in Environmental Conservation in Kericho (Kenya). Doctoral Thesis. School of Humanities and Social Sciences of Kenyatta University.
Llorca-Navasquillo, F., Gómez-García, J.A., Mansergas-López, F.J. (2015) Técnicas de educación e interpretación ambiental. Editorial Síntesis S.A., Madrid.
Murphy, M.C. (2020) Bronfenbrenner's bio-ecological model: a theoretical framework to explore the forest school approach?. Journal of Outdoor and Environmental Education. https://doi.org/10.1007/s42322-020-00056-5.
Novo, M. (2006) El desarrollo sostenible su dimensión ambiental y educativa ", Madrid [etc.] Pearson Education cop.
Novo, M. (1998) La Educación ambiental bases éticas, conceptuales y metodológicas, Madrid Universitas; París Unesco cop.

Quay, J., Gray, T., Thomas, G., Allen-Craig,S., Asfeldt, M., Andkjaer, S., Beames, S., Cosgriff, M., Dyment, J., Higgins, P., Ho, S., Leather,M., Mitten, D., Morse, M., Neill, J., North, C., Passy, R., Pedersen-Gurholt, K., Polley, S., Stewart, A., Takano,T., Waite, S., Foley, D. (2020) What future/s for outdoor and environmental education in a world that has contended with COVID-19?. Journal of Outdoor and Environmental Education.https://doi.org/10.1007/s42322-020-00059-2.

Robelia, B.A., Greenhow, C., Burton, L. (2011) Environmental learning in online social networks: adopting environmentally responsible behaviors. Environmental Education Research, 17:4, 553-575.

Rodrigo-Cano, D., Bastida, J.M., Tomé, J. (2019) 35 años de éxitos en la Educación Ambiental en España. RES, Revista de Educación Social, 28: 32-43.

Russell, J. (2020) Telling better stories: Toward critical, place-based, and multispecies narrative pedagogies in hunting and fishing cultures. The Journal of Environmental Education 51(3): 232-245

Severo, E.A., Guimarães, J.C.F., Dellarmelin, M.L., Ribeiro, R.P. (2019) The Influence of Social Networks on Environmental Awareness and the Social Responsibility of Generations. Brazilian Business Review 16(5): 500-518. https://doi.org/10.15728/bbr.2019.16.5.5

Thomas, G.J. (2018) Pedagogical frameworks in outdoor and environmental education. Journal of Outdoor and Environmental Education 21, 173–180. https://doi.org/10.1007/s42322-018-0014-9

Thomas, G., Grenon, H., Morse, M., Allen-Craig, S., Mangelsdorf, A., Polley, S. (2019) Threshold concepts for Australian university outdoor education programs: findings from a Delphi research study. Journal of Outdoor and Environmental Education 22: 169–186. https://doi.org/10.1007/s42322-019-00039-1.

Tlebere T., Scholtz B., Calitz A.P. (2016) Using Social Media to Improve Environmental Awareness in Higher Education Institutions. In: Marx Gómez J., Scholtz B. (eds) Information Technology in Environmental Engineering. Springer Proceedings in Business and Economics. Springer, Cham.

Vera, E. (2020) A Prevention Agenda for 2020 and Beyond: Why Environmental Interventions Matter Now More Than Ever. Journal of Prevention and Health Promotion 10: 1-29.

V.V.A.A. (1999) Libro Blanco de la Educación Ambiental en España. Comisión Temática de Educación Ambiental. Ministerio de Medio Ambiente, Madrid.

V.V.A.A. (2018) Guía metodológica de educación ambiental dirigida a la inclusión de personas con discapacidad. Sistema Nacional de Áreas de Conservación, SINAC. Costa Rica.

Zink, R. (2010) The constitution of outdoor education groups: An analysis of the literature. Journal of Outdoor and Environmental Education 14: 21–32. https://doi.org/10.1007/BF03400902.