Information about the subject

Degree: Bachelor of Degree in Marine Sciences

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 270218 **Name:** Computer programming

Credits: 6,00 **ECTS Year:** The course is not offered this academic year **Semester:** 1

Module: Computer Programming

Subject Matter: Computer Programming **Type:** Elective

Department: Oceanography and Environment

Type of learning: Classroom-based learning

Languages in which it is taught:

Lecturer/-s:

Module organization

Computer Programming

Subject Matter	ECTS	Subject	ECTS	Year/semester
Computer Programming	6,00	Computer programming	6,00	This elective is not offered in the academic year 25/26

Recommended knowledge

It has not established

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 knows different types of programming languages.

R2   The student recognizes simple data types. Variables, constants, numeric data, strings, operations with data.

R3   The student is capable of designing and executing programs applied to practical cases in the marine environment.

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	
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	
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	

SPECIFIC		Weighting			
		1	2	3	4
CE8	Identifying and analyzing new problems and proposing solution strategies			x	

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3	50,00%	Delivery of guided assignments, whose objectives and contents will be proposed by the teacher
R1, R2, R3	50,00%	Problem-solving and issues related to the use of specific software

Observations

This course is not eligible for single evaluation. According to the general evaluation and qualification regulations, the preferred evaluation system will be continuous evaluation.
Attendance at practical sessions is mandatory.
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.

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	40,00	1,60
PRACTICAL CLASSES M2	R1, R2, R3	15,00	0,60
TUTORIAL M6	R1, R2, R3	3,00	0,12
ASSESSMENT M8	R1, R2, R3	2,00	0,08
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK M9	R1, R2, R3	20,00	0,80
INDEPENDENT WORK M10	R1, R2, R3	70,00	2,80
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
CONTENTS	Types of programming languages. Simple data types. Variables, constants, numerical data, strings, operations with data. Control structures. Functions and procedures. Practical cases oriented to Marine Sciences.

Temporary organization of learning:

Block of content	Number of sessions	Hours
CONTENTS	30,00	60,00

References

·Higham, D. J., Higham, N.J. 2002. Mathlab guide. Ed. Siam

·Malek-Madani, R. 2012. Physical Oceanography: A Mathematical Introduction with MATLAB, Ed Chapman and Hall 456 pp

·McDougall, T.J. and P.M. Barker, 2011: Getting started with TEOS-10 and the Gibbs Seawater (GSW) Oceanographic Toolbox, 28pp., SCOR/IAPSO WG127, ISBN 978-0-646-55621-5.

·Pérez, C. 2002.Matlab y sus aplicaciones en las Ciencias y la Ingeniería. Prentice Hall, Madrid.

·Pratap, R. 2002. Getting Started with Matlab. Oxford University Press

·Signell, R. SEA-MAT: Matlab Tools for Oceanographic Analysis, https://sea-mat.github.io/sea-mat/

·WAFO-group (2000). "WAFO - A Matlab Toolbox for Analysis of Random Waves and Loads - A Tutorial" Math. Stat., Center for Math. Sci., Lund Univ., Lund, Sweden. ISBN XXXX, URL http://www.maths.lth.se/matstat/wafo.