Programming I

Academic Year: (2021 / 2022) **Review date: 21/06/2021 18:48:42**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: LOPEZ CUADRADO, JOSE LUIS

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

OBJECTIVES

Learning Outcomes

RA2: To be able, through self-developed and self-supported arguments or procedures, to apply their knowledge, understanding of knowledge and their problem-solving skills in complex or professional and specialised areas of work requiring the use of creative and innovative ideas
RA4: Be able to cope with complex situations or situations requiring the development of new solutions in the academic, work or professional situations within their field of study;

Basic and Specific Competences

CE01 - Describe, synthesise and graphically represent a set of data.
CE04 - Demonstrate basic knowledge of programming. Be able to use and develop statistical packages.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction
1.3 - General computer concepts
1.4 - Communication and Networks
1.3 - Structure of the information and its representation
1.4 - Introduction to Operating Systems
1.5 - Software tools
1.6 - Introduction to Programming

2 - Application software: Spreadsheets and Databases
2.1 - Environments
2.2 - Formulas and Functions
2.3 - Expression Builder
2.4 - Events
2.5 - Macro Designer

3 - Introduction to Programming
3.1 - Introduction. Algorithms and programs
3.2 - Compilers and interpreters
3.3 - Structure of a program
3.4 - Variables and constants
3.5 - Notation and vocabulary: characters, line formats and sentences. Comments
3.6 - Operators and Expressions
3.7 - Assignment Statements
3.8 - Input / output statements
3.9 - R Environment
3.10 - Data types in R
3.11 - Conditional statements and loops
3.12 - Functions
3.13 - External data

3.14 - Libraries and Packages

LEARNING ACTIVITIES AND METHODOLOGY

The teaching will be developed focused on the student in order to let him acquire the competences on working efficiently with the most common computing applications.
Therefore, the 6 ETCS credits are distributed in the following manner:
1. Theoretical lectures: 1.2 ETCS credits
2. Practice lectures: 1.7 ETCS credits
3. Individual work: 3.1 ETCS credits
4. Tutorials: Individualised assistance (individual tutorials) or group assistance (group tutorials) to students by the lecturer.

ASSESSMENT SYSTEM

% end-of-term-examination/test:	0
% of continuous assessment (assigments, laboratory, practicals…):	100

Continuous assessment is introduced allowing students to obtain their final grade. To do so:
The practices carried out throughout the semester will be evaluated. (60%)
At the end of each lesson a continuous assessment exam will be held (40%)

The final grade of the subject will be calculated based on the grades obtained in the practices and the continuous assessment exams. It is necessary a grade greater than or equal to 3 (out of 10) in the continuous evaluation exams of each lesson.

BASIC BIBLIOGRAPHY

- BEEKMAN, George COMPUTACION & INFORMATICA HOY, ADDISON-WESLEY/DIAZ DE SANTOS, 2015

ADDITIONAL BIBLIOGRAPHY

- GÓMEZ, A. Y OTROS REDES DE ORDENADORES E INTERNET: FUNCIONAMIENTO, SERVICIOS OFRECIDOS Y ALTERNATIVAS DE CONEXIÓN, RA-MA, 2011