Computer Programming of Applications

Academic Year: **(2023 / 2024)**   **Review date: 02/06/2023 11:10:55**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: GONZALEZ CARRASCO, ISRAEL

Type: Electives ECTS Credits : 6.0

Year :   Semester :

DESCRIPTION OF CONTENTS: PROGRAMME

I Programming foundations and techniques
1. Programming fundamentals
2. Programming techniques
2.1. Program elements: data and algorithms
2.2. Basic programming tools: algorithms, flow diagrams and pseudocode.
2.3. Programming paradigms
2.4. Object-oriented programming
2.5 Programming techniques for my business
II Data type definition and operations
3. Data types
3.1. Basic data types
3.2. Arrays
3.3. Enumerated
3.4. Objects
3.5. Basic Input/Output
3.6. Comments
3.7. Operators
3.8. Conversions
III Flow control and subprograms
4. Control structures
5. Methods: functions and procedures
IV Implementation of programs
6. Business success examples
7. Debugging and tracing programs
7.1. Common programming errors
7.2. Debugging techniques
7.3 Source code Quality as a driver for successful businesses

LEARNING ACTIVITIES AND METHODOLOGY

AF1. THEORETICAL-PRACTICAL CLASSES. In these classes the knowledge to be acquired by the students will be presented. They will receive the class notes and will have basic reference texts to facilitate the follow-up of the classes and the development of the subsequent work. Exercises and practical problems will be solved by the students and workshops and evaluation tests will be carried out in order to acquire the necessary skills.
AF2. TUTORIALS. Individualized assistance (individual tutorials) or in group (collective tutorials) to the students by the professor.
AF3. INDIVIDUAL OR GROUP WORK OF THE STUDENT.
MD1. THEORY CLASS. Class lectures by the professor with the support of computer and audiovisual media, in which the main concepts of the subject are developed and materials and bibliography are provided to complement the students' learning.
MD2. PRACTICES. Resolution of practical cases, problems, etc. posed by the teacher individually or in groups.

MD3. TUTORIALS. Individualized assistance (individual tutorials) or group (group tutorials) to students by the professor. For subjects of 6 credits, 4 hours will be dedicated with 100% attendance.

ASSESSMENT SYSTEM

% end-of-term-examination/test: 40

% of continuous assessment (assigments, laboratory, practicals…): 60

SE1. FINAL EXAM. In which the knowledge, skills and abilities acquired throughout the course will be globally assessed.
SE2. CONTINUOUS EVALUATION. This will assess the work, presentations, performance in debates, presentations in class, exercises, practices and work in the workshops throughout the course.

A minimum mark of 3 (out of 10) in the final exam is required.

Extraordinary call:
Students who do not pass the subject in the ordinary call will have an extraordinary call to pass it:
1. If the student followed the continuous evaluation: the grade will be the one established in the program of the subject for the ordinary call. However, the student will have the right to be graded only with the grade obtained in the final exam if it is more favourable.
2. If the student did not follow the continuous evaluation: the grade will be the grade obtained in the final exam. However, the teacher may authorize the delivery of the exercises of the continuous evaluation in the extraordinary call, being evaluated in such a case in the same way as in the ordinary call.

BASIC BIBLIOGRAPHY

- Ceder, N. The quick Python book, Simon and Schuster, 2018

- González Duque, Raúl . Python para todos, Distribuido con licencia Creative Commons. Disponible en http://mundogeek.net/tutorial-python/.

- Peña, Rosalía Resolución de problemas para ingenieros con Python® estructurado, ibergaceta, 2016

- Severance, C. R Python for Everybody: Exploring Data in Python 3, CreateSpace Independent Publishing Platform, 2016