

## Programming

Academic Year: ( 2019 / 2020 )

Review date: 28-03-2019

Department assigned to the subject: Department of Computer Science and Engineering

Coordinating teacher: VELASCO DE DIEGO, MANUEL

Type: Basic Core ECTS Credits : 6.0

Year : 1 Semester : 1

Branch of knowledge: Engineering and Architecture

## COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

- Basic knowledge of computer science and programming guided to industrial applications.
- Structured Programming.
- C Programming Language.

## DESCRIPTION OF CONTENTS: PROGRAMME

- 1 Basic Concepts
  - 1.1 Algorithm
  - 1.2 Program
  - 1.3 Pseudocode
  - 1.4 Structured Programming
- 2 C language programming
  - 2.1 C syntax
    - a Parts of program
    - b Include, define
    - c Constants
    - d main() function
  - 2.2 Datatypes
  - 2.3 Flow Control
  - 2.4 Libraries
  - 2.5 Functions
    - a Declaration
    - b Definition
    - c Parameters
    - d Reference and value parameters
  - 2.6 Input/Output
  - 2.7 Arrays
    - a Vectors
    - b Matrix
    - c Strings
    - d Parameters in functions
  - 2.8 Structs
    - a Definition
    - b Referenced in functions
  - 2.9 Memory management
    - a Pointers
    - b Static Memory
    - c Dynamic Memory
  - 2.10 Files management
    - a Read
    - b Write

## LEARNING ACTIVITIES AND METHODOLOGY

- Master lectures, reduced groups classes for resolution of doubts, students' presentations, individual tutorships and student's personal work; guided to the acquisition of theoretical knowledge (3 credits ECTS).
- Reduced groups for both laboratory practices and classes of problems, individual tutorships and student's personal work; guided to the acquisition of practical abilities related to the program of the subject (3 credits ECTS).

## ASSESSMENT SYSTEM

Continuous evaluation based on homework, participation during the classes and tests for the evaluation of abilities and knowledge.

Theory accounts for the 50% of the grade.

Practices account for the other 50%

It is necessary to pass both theory and practices

Students will pass the course by means of continuous evaluation as long as:

- Student attends to, at least, the 90% of the classes.
- In every partial exam student obtains, at least, 50% of each part (theory and problems)
- Student passes all the practices.

**% end-of-term-examination:** 40

**% of continuous assessment (assignments, laboratory, practicals...):** 60

## BASIC BIBLIOGRAPHY

- Luis JOYANES AGUILAR e Ignacio ZAHONERO MARTINEZ Programación en C. Metodología, algoritmos y estructura de datos, Mc Graw Hill, 2007
- Ravi Sethi. Programming Languages. Concepts and Constructs., ADDISON-WESLEY..
- T. William olle et al. Information System Methodologies., IFIP..