Programming for business

Academic Year: (2019 / 2020) **Review date: 02-04-2019**

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

Coordinating teacher: MEDINA DOMINGUEZ, FUENSANTA

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

This course aims to teach students the skills required to program in R. The students will have ability to:

- Design a program to solve business problems.
- Implement programs based on designs and specifications of business problems.
- Develop computer programs that can be used it the field of business
- Reuse code using libraries and functions.
- Perform statistical graphs to made decisions with respect the business performance

At the end of the course, the students should be able to:

- Understand algorithm and program concepts and their use in problem solving.
- Understand basic concepts of programming.
- Understand data structures and external data structures.
- Understand programming structures.

DESCRIPTION OF CONTENTS: PROGRAMME

1.Data Structures: Vector, Factor, Matrix, Array, List, DataFrame
2. Programming Structures
  2.1 Conditional structure: if
  2.2 Loops: for, while, repeat
3. Complex Programming Structures
4. Functions
  4.1 Definitions
  4.2 Variables and parameters
  4.3 Infix
  4.4 Calls
5. Recursive function
6. Input, output and data storage (keyboard, files)
7. Graphics

LEARNING ACTIVITIES AND METHODOLOGY

This course will consist of regular lectures and lab classes. Regular lectures will provide the students with the theoretical background required to acquire the outlined competences. Lab classes will give the student the chance to develop practical skills on program design, testing and documentation.
The 6 ECTS credit assigned workload has the following distribution:

1. Regular lectures: 1.2 ECTS credits
2. Lab classes: 1.2 ECTS credits
3. Tests: 0.5 ECTS credits
4. Students individual work: 3.1 ECTS credits

ASSESSMENT SYSTEM

The assessment will consider, on one hand, a final exam that will provide 40% of the final mark and, on the other, the results of a continuous evaluation process that will include assignments (30%) and two mid-term tests (10%-20%).

% end-of-term-examination:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

BASIC BIBLIOGRAPHY

- Meys, J., Vries, A R for dummies, John Wiley & Sons, 2012

- Murdoch Braun A first course in statistical programming with R, Cambridge University Press. , 2007

- Rizzo, Maria Statistical computing with R , Chapman & Hall/CRC, 2007