

Academic Year: ( 2022 / 2023 )

Review date: 20-05-2022

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: MEDINA DOMINGUEZ, FUENSANTA

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

**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, exercises and lab classes. Regular lectures will provide the students with the theoretical background required to acquire the outlined competences through exercises. Lab classes will give the student the chance to develop practical skills on program analysis, design, testing and documentation.

**ASSESSMENT SYSTEM**

It will be 100% continuous assessment where students will have evaluable practices.

<b>% end-of-term-examination:</b>	0
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	100

**BASIC BIBLIOGRAPHY**

- Golemund, G., Wickham, H R for Data Science: Import, Tidy, Transform, Visualize, and Model Data. , O'Reilly, 2016
- Lander, J R for Everyone: Advanced Analytics and Graphics. , Addison Wesley Data & Analytics Series, 2017
- 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
- Vries, A., Meys, J R for Dummies, 2015.

**BASIC ELECTRONIC RESOURCES**

- Fuensanta Medina Domínguez . Programación II: Lenguaje R: <http://ocw.uc3m.es/course/view.php?id=299>
- Fuensanta Medina Domínguez . R que R: <http://ocw.uc3m.es/course/view.php?id=299>

