

## Programming II

Academic Year: ( 2023 / 2024 )

Review date: 27-04-2023

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: MEDINA DOMINGUEZ, FUENSANTA

Type: Compulsory ECTS Credits : 6.0

Year : 2 Semester : 1

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Programming I

## DESCRIPTION OF CONTENTS: PROGRAMME

- 1 Data Structures
- 2 Programming Structures
  - 2.1 Conditional structure: if
  - 2.2 Structures of loops: for, while, repeat
3. Programming Structures
4. Functions
  - 4.1 Definition of functions
  - 4.2 Variables and parameters in functions
  - 4.3 Infix notation
  - 4.4 Function calls
5. Recursive functions
6. Input, output and data storage (keyboard, files)
7. Graphics

## LEARNING ACTIVITIES AND METHODOLOGY

The subject will be taught in theory classes through master classes and practical exercises, and the practical classes through tutored classes. The master classes will be focused so that the student acquires the knowledge about programming necessary for his professional development. The practical classes will be developed so that, in a tutored way, the student acquires skills in the analysis, design, development, testing and documentation of programs.

## 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

- Andrie de Vries and Jorries Meys R for dummies, John Willey & Sons, 2015
- Crawley, Michael J Statistics : An Introduction Using R, John Wiley & Sons, 2005
- Dalgaard, Peter Introductory statistics with R, Springer , 2002
- Everitt, Brian A handbook of statistical analyses using R, Chapman & Hall/CRC, 2006
- Grolemund, 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 and Analytics, 2017
- Maindonald, John Hilary Data analysis and graphics using R : an example-based approach, Cambridge University Press, 2003
- Norman Matloff The Art of R Programming: A Tour of Statistical Software Design, William Pollock, 2011
- Rizzo, Maria L Statistical computing with R, Chapman & Hall/CRC, 2007
- Vries, A., Meys, J. R for dummies, A Wiley Brand , 2017

#### 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://spoc.uc3m.es>