Functional programming

Academic Year: (2023 / 2024)　　　　　　　　　　　　　　　　**Review date: 21-04-2023**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: FERNANDEZ ARREGUI, SUSANA

Type: Electives　ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Programming (Course: 1/ Semester: 1)
Algorithms and data structures (Course: 1/ Semester: 2)

SKILLS AND LEARNING OUTCOMES

Complement the basic, transversal and compulsory knowledge of the Degree according to the student's preferences.

OBJECTIVES

To Acquire the learning outcomes and competencies specified in the "Memoria Verifica" of the title

DESCRIPTION OF CONTENTS: PROGRAMME

- Functional programming.
- Functions and expressions reductions.
- Functional programming and type system.
- Type classes.
- Higher order functions.
- Monadic programming.
- Proof theory

LEARNING ACTIVITIES AND METHODOLOGY

Seminars and lectures supported by computer and audiovisual aids.
Practical learning based on cases and problems, and exercise resolution.
Individual and group or cooperative work with the option of oral or written presentation.
Individual and group tutorials to resolve doubts and queries about the subject.
Internships and directed laboratory activities.

ASSESSMENT SYSTEM

SE1.FINAL EXAM. Global assessment of knowledge, skills and capacities acquired throughout the course.The percentage of the evaluation varies for each subject between 60% and 0%.
SE2.CONTINUOUS EVALUATION. Assesses papers, projects, class presentations, debates, exercises, internships and workshops throughout the course.The percentage of the evaluation varies for each subject between 40% and 100% of the final grade.

% end-of-term-examination:　　　　　　　　　　　　　　40

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

BASIC BIBLIOGRAPHY

- Graham Hutton Programming in Haskell (2nd edition), Cambridge University Press, 2016

- Richard Bird Introduction to Functional Programming using Haskell (second edition), Prentice-Hall International, 1998
- Richard Bird and Philip Wadler Introduction to functional programming, Prentice-Hall, 1988

ADDITIONAL BIBLIOGRAPHY

- Bartosz Milewski Category Theory for Programmers, Edited by Igal Tabachnik.

- Miran Lipovaca Learn You a Haskell for Great Good!: A Beginner's Guide, No Starch Press, 2011