

Academic Year: (2023 / 2024)

Review date: 05-09-2023

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: IGLESIAS MARTINEZ, JOSE ANTONIO

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Programación de Altas prestaciones.
Sistemas de Información.

OBJECTIVES

- Application of theoretical knowledge to practical and new problems in a broader context related with the corresponding study area.
- The students need the ability to learn how to continue learning in an autonomous manner.
- Ability to apply the different methods and techniques of the Computer Science área in the financial markets.
- Capacity of design, develop and implement a process to develop software for financial markets.
- Ability to solve new problems in a broader and multidisciplinary context applying the theoretical concepts.
- Multidisciplinary Team work.
- Development of financial software, from the analysis phase to its implementation and integration with other systems.
- Implementation of algorithms and techniques of the financial markets following the corresponding standards and procedures.

Results of the learning process:

- Knowledge of the main programming languages used in the development of financial software.
- Ability to develop software in the financial software.
- Knowledge about the different algorithms used in the financial market: front-office and back-office.
- Capacity to develop financial algorithms in all their layers.
- Knowledge about the validation and verification of the financial software.
- Knowledge about the main management tools.
- To understand the Project Management in financial markets.

DESCRIPTION OF CONTENTS: PROGRAMME

Back-Office Algorithms:

1. Introduction of the financial market.
2. Algorithms to calculate profitability.
3. Calculate of supplies and stores
4. Development of practices and projects.

LEARNING ACTIVITIES AND METHODOLOGY

Theory classes:

Basic theoretical knowledge and skills will be presented in large groups. Total amount of hours: 30. Attendance: 100%

Theory - practice classes:

Theory lessons and resolution of practical exercises. Total amount of hours: 24. Attendance: 100%

Laboratory sessions:

Small groups classes, in which problems proposed to the students are discussed and developed using the computer.

Total amount of hours: 18. Attendance: 100%

Tutorials: Tutorials in person (one-by-one) or videoconference. Total amount of hours: 12,5 .Attendance: 100%

e-Learning activities: forum about subjects, recorded-contents and other educational activities. Total amount of hours:

72. Attendance: 100%

Teaching methodologies:

- Theoretical lectures to develop the main concepts of the subject
- Practical cases and problems that students must solve individually or in small groups
- Oral presentations and discussions in class under teacher moderation
- Practical work individually or in small groups
- e-Learning activities

For the practical component of the subject, students have to develop works on: (1) parallel programming on clusters and distributed storage, using typical tools in this area; (2) algorithms for front-office and back-office, such as price monitoring, order histories, etc. and (3) management and software engineering, using some of the common tools in this sector.

ASSESSMENT SYSTEM

Classroom activities: 10%.

Practical work: 30%.

Exam: 60%.

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