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.
- Capaticty 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 gropus
- e-Learning activities

For the practical componet 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

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

Global classroom activities:10%.
Practical work:30%.
Exam: 60%.