Universidad Zaragoza

Academic Year/course: 2023/24

69766 - Suplementary Course in Mathematics

Syllabus Information

Academic year: 2023/24
Subject: 69766 - Suplementary Course in Mathematics
Faculty / School: 100 - Facultad de Ciencias
Degree: 627 - Master's Degree in Circular Economy
ECTS: 3.0
Year: 01
Semester: First semester
Subject type: ENG/Complementos de Formación
Module:

1. General information

The subject *Complementary Mathematics* allows students to acquire the necessary knowledge and skills in mathematics to adequately follow the compulsory and elective subjects of the Master's degree in Circular Economy. The *Complementary Mathematics* subject is designed for graduates in law or related degrees. It is taught during the first months of the Master in Circular Economy. The subject is taught at the University of Zaragoza.

It is aligned with Sustainable Development Goal (SDG) No. 12 (Responsible Production and Consumption) of the United Nations 2030 Agenda(https://www.un.org/sustainabledevelopment/es/), so that the acquisition of its learning results provides training and competence to contribute to some extent to the achievement of the Goal.

2. Learning results

- To be able to correctly interpret and contextualize commercial arithmetic parameters to solve problems in the field of financial mathematics (capitalization and simple and compound amortization) by means of the appropriate calculation methods or technological resources.
- To be able to solve problems related to the social sciences by using equations or systems of simple equations.
- To be able to perform data analysis using software.
- To be able to interpret basic statistical measures and use graphs to display relevant information.
- To know the basic tools of statistical inference for decision making.

3. Syllabus

Topic 1. Scientific notation.

Topic 2. Logarithm.

Topic 3. Representation of functions.

Topic 4. Linear, quadratic and reducible to quadratics, exponential and logarithmic equations. Applications.

Topic 5. Equations and systems of equations. Classification. Geometric interpretation.

Topic 6. Exploratory data analysis.

Topic 7. Probability models.

Topic 8. Basic concepts of statistical inference.

Topic 9. Transactions with financial capital. Percentage increases and decreases. Appropriate calculation method or technological resources.

Topic 10. Percentage increases and decreases.

Topic 11. Bank rates and interest.

Topic 12. Capitalization and simple and compound amortization.

4. Academic activities

Master class: 8 hours

Group sessions of 50 minutes each. Teachers explain the theoretical contents and solve representative applied problems.

Regular class attendance is strongly recommended.

Problem solving and case studies: 22 hours, including 4 face-to-face hours

Students must solve problems.

Self-study and self-employment: 42 hours

Students must study theory and prepare for the final test.

Assessment tests: 3 hours.

Students must take a written test consisting of short questions and/or solving different problems.

5. Assessment system

Written test consisting of short questions and/or solving different problems. Both the correct application of the techniques and the ability to interpret the results will be assessed: 100 %. The test is held simultaneously in each university under conditions that guarantee the proper identification of students and the impossibility of fraud.

The enrolment in the subject entitles the student to 2 official exam calls per enrolment. The performance of the exams and the number of official calls will be in accordance with the *Rules of Permanence in Master Studies* and the *Rules of Learning Assessment Standards* of the University of Zaragoza (https://ciencias.unizar.es/normativas-asuntos-academicos). The general criteria for the design of the tests and the grading system shall also be adjusted to the latter regulation, and the time, place and date of the review shall be made public when the grades are published.