

27225 - Introduction to Management Systems

Syllabus Information

Academic Year: 2020/21

Subject: 27225 - Introduction to Management Systems

Faculty / School: 100 - Facultad de Ciencias

Degree: 452 - Degree in Chemistry

ECTS: 3.0

Year: 2

Semester: Second semester

Subject Type: Optional

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

Assessment details

1: Continuous assessment

1. Resolution of practical cases.
 2. Testing of theory and practice throughout the semester.
 3. Resolution of questions proposed by the teacher of the subject.
- 60% theoretical and practical tests; 40% practical cases.

2: Global assessment

60 test questions with four answers and only a valid. The approval requires 70% either answered (One right answer for every four incorrect is discounted).

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, laboratory sessions, tutorials and seminars, field work and autonomous work.

4.2.Learning tasks

This course includes the following learning tasks:

- **Lectures** (2.8 ECTS). Learning of concepts, descriptions and calculations bases.
- **Practice sessions** (2 ECTS). Learning of procedures and tools. Problem-solving sessions about numerical problems in geotechnics.
- **Tutorials and seminars** (0,5 ECTS)
- **External visit to a professional laboratory** (0.8 ECTS) One-morning visit.
- **Autonomous work** (0.4 ECTS)
- **Fieldwork** (0,3 ECTS) One-morning using geophysical instruments.
 - Interpreting geophysics (0,2 ECTS)

4.3.Syllabus

This course will address the following topics:

Section 1. Fundamentals of soil mechanics

- Topic 1. Soil properties and classification
- Topic 2. Soil stress: self weight and induced stress by loading
- Topic 3. Soil consolidation.
- Topic 4. Conditions of failure. Soil shear and failure.

Section 2. Fundamentals of rock mechanics

- Topic 5. Rock and rock mass. Conditions of failure.
- Topic 6. Characterization and classification of rock masses

Section 3. Applied geotechnics

- Topic 7. Bearing capacity of soil
- Topic 8. Deep foundations
- Topic 9. Geotechnical surveying and report
- Topic 10. Soil slopes
- Topic 11. Rock slopes
- Topic 12. Lateral earth pressure

Section 4. Geophysical surveying

- Topic 13. Electrical methods
- Topic 14. Seismic refraction
- Topic 15. Ground Probing Radar

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Sciences and Earth Sciences Department websites (<https://ciencias.unizar.es>, <https://cienciatierra.unizar.es>) and Moodle.

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=27225&year=2019