

Academic Year/course: 2022/23

60561 - Rural infrastructure

Syllabus Information

Academic Year: 2022/23

Subject: 60561 - Rural infrastructure

Faculty / School: 201 - Escuela Politécnica Superior

Degree: 546 - Master in Agricultural Engineering

ECTS: 6.0

Year: 1

Semester: First semester

Subject Type: Compulsory

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as theory sessions, problem-based learning and practice sessions (software).

4.2. Learning tasks

The course includes the following learning tasks:

- Theory sessions
- Problem-based learning
- Practice sessions (software)
- Autonomous work
- Assessment

In relation to the Sustainable Development Goals (SDG) and in particular to targets 9.1 and 9.4, the activity "Problem solving and case studies" includes these targets by focusing on justification of sizing and structural calculation of walls, floors, foundations and slabs that are carried out with criteria of reliability, resilience and quality of infrastructure (target 9.1) and with optimization in the use and typology of materials (target 9.2).

4.3. Syllabus

The course will address the following topics:

Theory sessions

1. Floor slabs
2. Earth pressures and retaining walls

3. Geotechnical report
4. Concrete foundations
5. Ground slabs

Practice sessions (structural calculation software)

1. Floor slabs
2. Earth pressures and retaining walls
3. Ground slabs
4. Foundations

4.4. Course planning and calendar

Provisional course planning

Week	Theory sessions (h)	Practice sessions (h)	Autonomous work (h)	Total (h)
1	2	2	6	10
2	2	2	6	10
3	2	2	6	10
4	2	2	6	10
5	2	2	6	10
6	2	2	6	10
7	2	2	6	10
8	2	2	6	10
9	2	2	6	10
10	2	2	6	10
11	2	2	6	10
12	2	2	6	10
13	2	2	6	10
14	2	2	6	10
15	2	2	6	10
Total	30	30	90	150

4.5. Bibliography and recommended resources

- BB** Calavera Ruiz, José. Cálculo de estructuras de cimentación / J. Calavera. 5ª ed. [Madrid] : INTEMAC (Instituto Técnico de Materiales y Construcciones), D.L. 2015
- BB** Calavera Ruiz, José. Cálculo, construcción, patología y rehabilitación de forjados de edificación : unidireccionales y sin vigas- hormigón metálicos y mixtos / J. Calavera. 5ª ed. [de acuerdo con la nueva instrucción EFHE (2002)]. Madrid : INTEMAC. Instituto Técnico de Materiales y Construcciones, D.L. 2002
- BB** Calavera Ruiz, José. Muros de contención y muros de sótano / J. Calavera. 3ª. ed. Madrid : INTEMAC (Instituto Técnico de Materiales y Construcciones), D.L. 2001
- BB** Código Estructural. Real Decreto 470/2021 de 29 de junio de 2021. Ministerio de Transportes, Movilidad y Agenda urbana.
- BB** Jofré Ibáñez, Carlos. Manual de pavimentos industriales / Carlos Jofré Ibáñez, Julio José Vaquero García. Madrid : Instituto Español del Cemento y sus Aplicaciones, D.L. 2000

The updated recommended bibliography can be consulted in:<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=60561>