Course guide
210140 - EST IV - Structures IV

Last modified: 14/12/2023

Unit in charge: Barcelona School of Architecture
Teaching unit: 753 - TA - Department of Architectural Technology.

Degree: DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 5.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: ALBERT ALBAREDA VALLS

Others:

Primer quadrimestre:
ALBERT ALBAREDA VALLS - Grup: 1SM1
JAUME ALENTORN PUIGCERVER - Grup: 1SM1

Segon quadrimestre:
ALBERT ALBAREDA VALLS - Grup: 2SM2, Grup: 2ST2
JAUME ALENTORN PUIGCERVER - Grup: 2SM2, Grup: 2ST2
FRANCISCO JAVIER TORRE-MARIN RODRÍGUEZ - Grup: 2SM2, Grup: 2ST2

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
ET1. Translation from Spanish slope
ET13. Translation from Spanish slope
ET14. Translation from Spanish slope
ET2. Translation from Spanish slope
ET10. Translation from Spanish slope
ET3. Translation from Spanish slope
ET4. Translation from Spanish slope
ET6. Translation from Spanish slope
ET7. Translation from Spanish slope
ET8. Translation from Spanish slope

Generical:
CG4. Translation from Spanish slope

Transversal:
CT2. Translation from Spanish slope
CT3. Translation from Spanish slope
CT4. Translation from Spanish slope
CT5. Translation from Spanish slope

Basic:
CB1. Translation from Spanish slope
CB2. Translation from Spanish slope
CB3. Translation from Spanish slope
CB4. Translation from Spanish slope
CB5. Translation from Spanish slope

TEACHING METHODOLOGY

Go to catalan or spanish version.

LEARNING OBJECTIVES OF THE SUBJECT

To achieve the necessary principles to understand the mechanical behaviour of the soil.

To comprehend the forces which arrive to the soil derived from a building, making compatible structure and foundations.

To comprehend the geotechnical studies of the ground in order to be able to decide the typology of foundation and to calculate it.

STUDY LOAD

Type	Hours	Percentage
Hours large group	21,0	16.80
Self study	70,0	56.00
Hours medium group	22,0	17.60
Guided activities	12,0	9.60

Total learning time: 125 h

CONTENTS

Structures IV

Description:
Introduction to the soil mechanics.

Classification and physical properties of the soil.

Introduction to the elasticity and plasticity theory.

Mechanical tests in laboratory.

Rankine and Coulomb Equilibrium.

Retaining walls.

Slope Stability.

In situ mechanical tests.

Superficial foundations, strength.

Deep foundations.

Flexible retaining walls.

Problems regarding foundations and solutions.

Related activities:
Go to the Spanish version.

Full-or-part-time: 4h
Theory classes: 2h
Practical classes: 2h

GRADING SYSTEM

Go to catalan or spanish version.

BIBLIOGRAPHY

Basic:
- Jimenez Salas, José A.; Justo Alpañés, L. Geotecnia y cimientos. Vol. 1: Mecánica del suelo y de las rocas. Madrid: Rueda, 1971.
- González Caballero, M. El Terreno [on line]. 2001. Barcelona: Edicions UPC, 2001 [Consultation: 07/10/2020]. Available on: http://hdl.handle.net/2099.3/36297 (Accés restringit als usuaris de la UPC). ISBN 9788483015308.

RESOURCES

Other resources:
The materials and documents of the subject may be written indistinctly in any languages of instruction.