

SUBJECT TEACHING GUIDE

G1185 - History and Heritage of Civil Engineering Degree in Civil Engineering

Academic year 2022-2023

| 1. IDENTIFYING DATA | | | | | |
|----------------------------------|---|------------------|--------------------|------------------|------------------|
| Degree | Degree in Civil Engineering | | | Type and Year | Optional. Year 4 |
| Faculty | School of civil Engineering | | | | |
| Discipline | Optional Subjects: Open to all Itineraries | | | | |
| Course unit title and code | G1185 - History and Heritage of Civil Engineering | | | | |
| Number of ECTS credits allocated | 6 | Term | Semester based (2) | | |
| Web | | | | | |
| Language of instruction | Spanish | English Friendly | Yes | Mode of delivery | Face-to-face |

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|------------------|--|--|--|--|--|
| Department | DPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS | | | | |
| Name of lecturer | MARIA LUISA RUIZ BEDIA | | | | |
| E-mail | maria.ruiz@unican.es | | | | |
| Office | E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO (0084) | | | | |
| Other lecturers | | | | | |

| 3.1 LEARNING OUTCOMES |
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| - historical analysis as a tool to study civil engineering |
| - Use concepts of landscape and heritage in the assessment of public works |
| - To place in time-space historical public works |
| - Know how to access to reliable information sources, to contrast contents, and use them to implement an own idea |
| - Explain the meaning of "heritage of public works " |
| - Learn to identify the cultural values of public works |
| - National cultural laws |

4. OBJECTIVES

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| Use historical knowledge in the profession of civil engineer |
| Learn how the civil engineering heritage is valued |
| Historical-technical documentation. Bibliography |
| Understanding how public works give character to the landscape |
| Learn to identify, analyze and assess public works in the field of cultural heritage |
| Discuss examples of rehabilitation of public works |
| Refurbishment projects. Reuse projects |

6. COURSE ORGANIZATION

CONTENTS

| | |
|----|---|
| 1 | Studying history of civil engineering, public works and cultural heritage. A perspective from Spain |
| 2 | Civil engineering in Ancient Ages. |
| 3 | Civil engineering in Classical Antiquity. Greco-Roman culture. |
| 4 | Civil engineering in the Middle Ages. |
| 5 | Civil engineering in Modern Ages. |
| 6 | Civil engineering in 18th century. The beginning of modern engineering |
| 7 | Civil engineering in 19th century. Roads and railway |
| 8 | Civil engineering in 19th century. Harbour works. Water works |
| 9 | Spanish contributions of civil engineering in 20th century. |
| 10 | Public works: a type of cultural resources. Notion. Method. Examples. |

7. ASSESSMENT METHODS AND CRITERIA

| Description | Type | Final Eval. | Reassessn | % |
|---|------|-------------|-----------|---------------|
| Group work | Work | No | Yes | 30,00 |
| Short reports (single/couple) written and/or spoken | Work | No | Yes | 60,00 |
| Discussion | Work | No | Yes | 10,00 |
| TOTAL | | | | 100,00 |
| Observations | | | | |
| Skills evaluation Continuous evaluation Reassessment (Single) | | | | |
| Observations for part-time students | | | | |
| Activities selection to do (agree on professor/student) | | | | |

8. BIBLIOGRAPHY AND TEACHING MATERIALS

| BASIC |
|---|
| <p>BLOQUE I BERLOW, L: The reference guide to famous engineering landmarks of the world: bridges, tunnels, dams, roads and other structures. Chicago, Fitzroy Dearbon Pubsh, 1998</p> |
| <p>BLOQUE II WRIGHT, G.: Ancient building technology. Leiden, Brill, 2000</p> |
| <p>BLOQUE III MALISSARD, A: Los romanos y el agua. Barcelona, Herder, 1996</p> |
| <p>BLOQUE IV Ars Mechanicae. Ingeniería medieval en España. Madrid, Ministerio de Fomento – Fundación Juanelo Turriano, 2008</p> |
| <p>BLOQUE V LÓPEZ PIÑERO, J. M: Ciencia y técnica en la sociedad española de los siglos XVI y XVII. Barcelona, Labor, 1979</p> |
| <p>BLOQUE VI RUMEU DE ARMAS, A: Ciencia y tecnología en la España ilustrada, la Escuela de Caminos y Canales. Madrid, Colegio de Ingenieros de Caminos, 1980</p> |
| <p>BLOQUE VII FERNÁNDEZ TROYANO, L: Tierra sobre agua. Visión histórica universal de los puentes. Madrid, Colegio de Ingenieros de Caminos, 1999</p> |
| <p>BLOQUE VIII ESPINOSA, J. y GONZALEZ, J.J. (Coords): 1851: La creación del Canal de Isabel II. Madrid, Fundación Canal de Isabel II, 2001</p> |
| <p>BLOQUE IX BURGOS NÚÑEZ, A: Los orígenes del hormigón armado en España. Madrid, CEDEX-CEHOPU, 2009</p> |
| <p>BLOQUE X RUIZ BEDIA, M. y HERNÁNDEZ LAMAS, P: Patrimonio y paisaje de la ingeniería civil, I Jornadas de Trabajo. Madrid, 2014</p> |