

## 250474 - GESTESTRU - Structural Management

Coordinating unit:	250 - ETSECCPB - Barcelona School of Civil Engineering
Teaching unit:	751 - DECA - Department of Civil and Environmental Engineering
Academic year:	2019
Degree:	MASTER'S DEGREE IN STRUCTURAL AND CONSTRUCTION ENGINEERING (Syllabus 2015). (Teaching unit Optional) MASTER'S DEGREE IN STRUCTURAL AND CONSTRUCTION ENGINEERING (Syllabus 2009). (Teaching unit Optional) MASTER'S DEGREE IN CIVIL ENGINEERING (PROFESSIONAL TRACK) (Syllabus 2012). (Teaching unit Optional) MASTER'S DEGREE IN CIVIL ENGINEERING (PROFESSIONAL TRACK) (Syllabus 2012). (Teaching unit Optional)
ECTS credits:	5
Teaching languages:	Catalan, Spanish, English

### Teaching staff

Coordinator:	JUAN RAMON CASAS RIUS
Others:	VICENTE ALEGRE HEITZMANN, JUAN RAMON CASAS RIUS

### Degree competences to which the subject contributes

#### Specific:

8162. Knowledge of all kinds of structures and materials and the ability to design, execute and maintain structures and buildings for civil works.

8228. Knowledge of and competence in the application of advanced structural design and calculations for structural analysis, based on knowledge and understanding of forces and their application to civil engineering structures. The ability to assess structural integrity.

#### Transversal:

8559. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding the mechanisms on which scientific research is based, as well as the mechanisms and instruments for transferring results among socio-economic agents involved in research, development and innovation processes.

8560. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

8561. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

### Learning objectives of the subject

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### Study load

Total learning time: 125h	Theory classes:	19h 30m	15.60%
	Practical classes:	9h 45m	7.80%
	Laboratory classes:	9h 45m	7.80%
	Guided activities:	6h	4.80%
	Self study:	80h	64.00%

### Content

Inspection of structures	Learning time: 28h 47m Theory classes: 12h Self study : 16h 47m
Structural assessment	Learning time: 28h 47m Theory classes: 11h Laboratory classes: 1h Self study : 16h 47m
Repair and strengthening of structures	Learning time: 36h Theory classes: 13h Laboratory classes: 2h Self study : 21h

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### Bibliography

#### Basic:

Calavera Ruiz, J. Patología de estructuras de hormigón armado y pretensado. 2a ed. Madrid: INTEMAC, 2005. ISBN 8488764219.

Schneider, J.. Introduction to Safety and Reliability of Structures. Zurich: IABSE, 1997.

Melchers, R.E.. Structural Reliability. Analysis and prediction. Primera. Chichester: Ellis Horwood Series in Civil Engineering, 1987.

GEHO-Atep. Reparación y refuerzo de estructuras de hormigón: guía FIP de buena práctica. Madrid: Colegio de Ingenieros de Caminos, Canales y Puertos, 1994. ISBN 8438000797.

GEHO. Durabilidad de estructuras de hormigón. Guía de diseño CEB. Madrid: GEHO-Colegio Ingenieros de Caminos, Canales y Puertos, 1993.

#### Complementary:

Dirección General de Carreteras. Guía de inspecciones básicas de obras de paso. Madrid: Ministerio de Fomento, 2009.

Casas, J.R.. La enseñanza de la gestión de estructuras: una necesidad. Barcelona: Colegio de Ingenieros de Caminos, Canales y Puertos, 1999.

Dirección General de Carreteras. Inspecciones principales de puentes de carretera. Madrid: Ministerio de Fomento,

Task Group 5.6. Model Code for Service Life Design. Lausanne: FIB, 2006.