

# Workshops and Research Seminars (250702)

## General information

<b>School:</b>	ETSECCPB
<b>Departments:</b>	751 - Departament d'Enginyeria Civil i Ambiental
<b>Credits:</b>	5.5 ECTS
<b>Programs:</b>	1140 - MÀSTER UNIVERSITARI EN ENGINYERIA ESTRUCTURAL I DE LA CONSTRUCCIÓ (pla 2015)
<b>Course:</b>	2015/2016
<b>Course language:</b>	Castellano

## Faculty

Responsible faculty: Eva Maria Oller Ibars

Teachers: Jesús Miguel Bairán García, Rolando Antonio Chacón Flores, Albert Jimenez Morales, Albert Mas Soler, Eva Maria Oller Ibars

## Generic objectives

Subject to know the latest trends in research related to structural engineering and construction and other cross-cutting issues

' - Knowledge of the latest trends in research related to structural engineering and construction. - Knowledge of analysis programs and management structures .

- Seminars on the latest advances in research related to the three masters itineraries: structural analysis, technology of structures and construction. - Seminars related to the development of the master thesis: scientific method, writing scientific and technical documents, using database to search scientific articles for the development of state of the art. - Workshops on the development of a draft structural engineering.

## Skills

### Specific skills

To conceive and design civil and building structures that are safe, durable, functional and integrated into its surroundings.

Designing and building using traditional materials (reinforced concrete, prestressed concrete, structural steel, masonry, wood) and new materials (composites, stainless steel, aluminum, shape memory alloys?).

To evaluate, maintain, repair and strengthen existing structures, including the historic and artistic heritage.

To apply innovative and sustainable technological aspects in the management and implementation of projects and works.

To analyze the multiple technical and legal conditions arising in the construction of public works, and use proven methods and proven technologies with the aim of achieving greater efficiency in construction while respecting the environment and protecting the safety and health of workers and users of public works.

### **Generic skills of subject**

To conceive, design, analyze and manage structures or structural elements of civil engineering or building, encouraging innovation and the advance of knowledge.

To develop, improve and use conventional materials and new construction techniques to ensure the safety requirements, functionality, durability and sustainability.

To define construction processes and methods of organization and management of projects and works.

To design plans for safety, quality and environmental and socioeconomic impacts related to the construction process.

### **ECTS credits: total hours of student work**

		<b>Dedication</b>	
		<b>Hours</b>	<b>Percent</b>
<b>Supervised Learning</b>	<b>Theory</b>	32.00	58.2%
	<b>Assignments</b>	3.00	5.5%
	<b>Laboratory</b>	59.00	107.3%
	<b>Supervised activities</b>	55.00	100.0%
<b>Self-Learning</b>		82.50	

### **Contents**

#### **Computer programs**

##### **Dedication**

11.0h. Theory + 3.0h. Assignments + 16.0h. Laboratory

##### **Description**

Explain how it works and what possibilities the program offers for calculating Midas

Midas Program. Case study

Program SAP2000

SAP2000 program. Case study

BIM Software

BIM software. Case study

Digital Manufacturing

Budget of a project

Budget of a project. Case study

### ***Subjects related with the master thesis***

#### ***Dedication***

12.0h. Theory + 35.0h. Laboratory

#### ***Description***

Gathering information and bibliography

References

How to write scientific and technical documents

Making presentations

### ***Human resources***

#### ***Dedication***

9.0h. Theory + 8.0h. Laboratory

#### ***Description***

Career

Career.

### **Activities**

#### ***Work on the practical application of programs***

##### ***Dedication***

15.0 h. Supervised activities

#### ***Work writing and presentation of an article state of knowledge on a particular topic***

##### ***Dedication***

35.0 h. Supervised activities

#### ***Preparation of curriculum vitae***

##### ***Dedication***

5.0 h. Supervised activities

### **Grading rules (\*)**

***(\*) The evaluation calendar and grading rules will be approved before the start of the course.***

The mark of the course is obtained from the ratings of continuous assessment and their corresponding laboratories and/or classroom computers.

Continuous assessment consist in several activities, both individually and in group, of additive and training characteristics, carried out during the year (both in and out of the classroom).

The teachings of the laboratory grade is the average in such activities.

The evaluation tests consist of a part with questions about concepts associated with the learning objectives of the course with regard to knowledge or understanding, and a part with a set of application exercises.

### **Test rules**

Failure to perform a laboratory or continuous assessment activity in the scheduled period will result in a mark of zero in that activity.

### **Teaching methodology**

The course consists of 3 hours per week of classroom activity (large size group).

The 3 hours in the large size groups are devoted to theoretical lectures, in which the teacher presents the basic concepts and topics of the subject, shows examples and solves exercises.

Support material in the form of a detailed teaching plan is provided using the virtual campus ATENEA: content, program of learning and assessment activities conducted and literature.

### **Office hours**

The schedule of consultations is on wednesday from 12 to 14h in room C1 201.

### **Basic bibliography**

- <http://files.itec.cat/tcq43/docs/cas/iniciacion.pdf>. **Manual TCQ.**
- Midas. **Midas User Manual.**
- CSI Computers and structures. **Manual de Sap 2000.**