

## 390108 - FF2 - Physics II

Coordinating unit:	390 - ESAB - Barcelona School of Agricultural Engineering
Teaching unit:	748 - FIS - Department of Physics
Academic year:	2019
Degree:	BACHELOR'S DEGREE IN AGRONOMIC SCIENCE ENGINEERING (Syllabus 2018). (Teaching unit Compulsory) BACHELOR'S DEGREE IN FOOD ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN AGRICULTURAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN FOOD ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN AGRICULTURAL, ENVIRONMENTAL AND LANDSCAPE ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN BIOSYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits:	6
Teaching languages:	Catalan

### Teaching staff

Coordinator:	JOAQUIM VALLS RIBAS
Others:	ANTONI GIRÓ ROCA - DANIEL LOPEZ CODINA - ELOI PINEDA SOLER - BERNAT PUIG CAMPS - QUIM VALLS RIBAS

### Degree competences to which the subject contributes

#### Specific:

2. Knowledge of the basic concepts of mechanics, thermodynamics, electromagnetic fields and waves, and ability to apply them in engineering problems.

#### Transversal:

1. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.

### Teaching methodology

The theory classes will consist of an introduction of the concepts required to achieve the course objectives. This will be done by the lecturer that will also show the use of these concepts on problems solving. The practical classes will be divided into problems sessions and laboratory practices. These sessions will be guided by the lecturer, and the students will work in groups. The teamwork capacity of students will be fostered, as well as their problem solving capacity. The support materials include the practices guides, problems lists and some notes of the course. These materials will be available at ATENEA.

### Learning objectives of the subject

At the end of the course students will have attained basic knowledge of static, electromagnetism, especially electric circuits, heat transport and fluid dynamic. Students will be able to solve problems and questions related to these topics. Students will be able to put into practice knowledge and skill acquired in later courses, in particular, in subjects such as technological fundamentals of engineering or installations and agro-industrial buildings. In parallel, students will have to acquire a general view of science and the scientific method, to use dimensional analysis in problems solving and results verification, and to know the different mathematical skills that are used during the course very well. Students will become familiar to laboratory procedures, correctly use the laboratory material and learn to proceed with scientific rigor when taking, analyzing and presenting experimental data.

## 390108 - FF2 - Physics II

### Study load

Total learning time: 150h	Hours large group:	40h	26.67%
	Hours medium group:	0h	0.00%
	Hours small group:	20h	13.33%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

## 390108 - FF2 - Physics II

### Content

-	Learning time: 8h Theory classes: 3h Self study : 5h
Description: -	
-	Learning time: 42h Theory classes: 11h Laboratory classes: 6h Self study : 25h
Description: -	
-	Learning time: 16h Theory classes: 4h Laboratory classes: 2h Self study : 10h
Description: -	
-	Learning time: 27h Theory classes: 8h Laboratory classes: 4h Self study : 15h
Description: -	



## 390108 - FF2 - Physics II

-	Learning time: 57h Theory classes: 14h Laboratory classes: 8h Self study : 35h
Description: - Related activities: -	

## 390108 - FF2 - Physics II

### Planning of activities

Lectures	Hours: 34h Theory classes: 34h
name english	Hours: 6h Theory classes: 6h
Guided exercise practicals	Hours: 16h Laboratory classes: 16h
english	
-	Hours: 15h Self study: 15h
Laboratory	Hours: 10h Laboratory classes: 4h Self study: 6h
-	Hours: 60h Self study: 60h
Optional Report: Experimental Errors and significant Figures	Hours: 4h Self study: 4h

## 390108 - FF2 - Physics II

### Bibliography

#### Basic:

Sears, Francis Weston; Zemansky, Mark Waldo; Young, Hugh D. Física universitaria. 6<sup>a</sup> ed. México, etc.: Addison-Wesley Iberoamericana, 1988. ISBN 0201640422.

Tipler, Paul Allen; Mosca, Gene. Física para la ciencia y la tecnología. 5a ed. Barcelona [etc.]: Reverté, 2005. ISBN 8429144102.

Bauer, W.; Westfall, Gary D.; Álvarez Díaz, Jorge. Física para ingeniería y ciencias. Vol. 1. México [etc.]: McGraw-Hill/Interamericana, 2011. ISBN 9786071505453.

Bauer, W.; Westfall, Gary D.; Álvarez Díaz, Jorge. Física para ingeniería y ciencias, con física moderna. Vol. 2. México [etc.]: McGraw-Hill/Interamericana, 2011. ISBN 9786071505460.

Beer, Ferdinand Pierre; Johnston, E. Russell; Eisenberg, Elliot R. Mecánica vectorial para ingenieros. Vol. 1, Estática. 8a ed. México [etc.]: McGraw-Hill, 2007. ISBN 9789701061039.

Hibbeler, R. C.; Murrieta Murrieta, Jesús Elmer. Ingeniería mecánica : estática. 14a ed. Ciutat de Mèxic: Pearson, 2016. ISBN 9786073237079.

Giró i Roca, Antoni. Física per a estudiants d'informàtica. Barcelona: EDIUOC, 1998. ISBN 8495131021.

#### Complementary:

Çengel, Y.A.; Boles, M.A. Termodinámica. 5a ed. Mèxic: McGraw-Hill, 2006. ISBN 9701056116.

Martínez, S. Fonaments de Física. Barcelona: Enciclopèdia Catalana, 1991.

Serway, R.A. Electricidad y magnetismo. Mèxic: McGraw-Hill, 1999. ISBN 9701025636.