DEGREE CURRICULUM

PHYSICS II

Coordination: ROSELL URRUTIA, JOAN IGNASI

Academic year 2016-17

PHYSICS II 2016-17

Subject's general information

Subject name	PHYSICS II
Code	102105
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION
Typology	<table><tr><th>Degree</th><th>Course</th><th>Typology</th><th>Modality</th></tr><tr><td>Bachelor's Degree in Automation and Industrial Electronic Engineering</td><td>1</td><td>COMMON</td><td>Attendance-based</td></tr><tr><td>Bachelor's Degree in Mechanical Engineering</td><td>1</td><td>COMMON</td><td>Attendance-based</td></tr></table>
ECTS credits	6
Groups	2GG,5GM
Theoretical credits	0
Practical credits	0
Coordination	ROSELL URRUTIA, JOAN IGNASI
Department	MEDI AMBIENT I CIENCIES DEL SOL
Important information on data processing	Consult this link for more information.

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Learning objectives

General objectives:

Acquire basic knowledge about the concepts and methods of General Physics. These are both theoretical and practical knowledge. Theoretical knowledge is necessary to understand the concepts and laws of physics, while also allowing know how to use the scientific language . Practical knowledge must provide a domain in solving problems of physics.

Use adequated systems units.

Arguing in a properly scientific and technical context.

Properly argue a conclusion based on some assumptions.

To acquire a sufficient basis to deal with normal subjects later based on the application of the laws of classical physics.

Specific objectives:

Understanding the fundamental principles of thermodynamics and apply them to simple physical systems analysis

Understand the principles and fundamental laws of electromagnetism

Apply basic laws for calculating electric field and potential distributions of electric charge point and continuous distributions with simple geometries

Apply basic laws for calculating magnetic systems and magnetic forces or loads drivers running simple geometry

Understand and apply the principle of electromagnetic induction

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Competences

Degree-specific competences

- GEEIA2. Understanding and commanding basic concepts of the general laws of mechanics, thermodynamics, fields and waves and electromagnetism and their application to solve problems in engineering.

Degree-transversal competences

- EPS1. Capacity to solve problems and prepare and defence arguments inside the area of studies.
- EPS5. Capacity of abstraction and of critical, logical and mathematical thinking.
- EPS6. Capacity of analysis and synthesis.
- EPS8. Capacity of planning and organizing the personal work.

Subject contents

Contents of the subject

Thermodynamics:

1. Temperature

2. First law of thermodynamics

3. Heat engines, entropy and second law of thermodynamics

Electromagnetism:

4. Electric field. Electric potential.

5. Conductors and dielectrics. Capacitors.

6. Magnetic Field. Magnetic forces. Sources of the magnetic field.

7. Electromagnetic induction.

Methodology

The development of the course is based on three activities:

1) Classes GG

Exposition of the concepts, principles and fundamental relations of each subject

Approach of examples illustrating the application

2) Group classes GM

Discussion and resolution of problems and applications related concepts for each topic

3) Laboratory experiences

Development plan

WEEK	Subject - Activities
1	Introduction. Unit 1
2	U 1 U 2
3	U 2 U 3
4	U 3
5	U 3 **Laboratory session 1**
6	U 3 U 4
7	U 4
8	U 4
9	**Evaluation: EXAM 1st Part**
10	U 4 U 5
11	U 5
12	U 6
13	U 6 **Laboratory session 2**
14	U 6 U 7
15	U 7
16-17	**Evaluation: EXAM 2nd Part**
18	
19	**Evaluation: Final EXAM**

Evaluation

I. Activities that constitute the continuous evaluation throughout the semester:

- CORE ACTIVITIES EVALUATION

These activities are required in order to pass the course through the process of continuous assessment. When the student / s have not done any / s of the three compulsory activities (PA1, PA2, PA3) will get a final maximum of 3.5 points, regardless of the application of percentages can give another top result. Therefore, it must be submitted to the Recovery.

1) PA1: 1st Partial Exam, Week 9

Content: 1,2,3 issues (Thermodynamics)

Percentage: 35%

2) PA2: 2nd Partial Exam, Week 16-17

Content: 4,5,6,7 issues (Electromagnetism)

Percentage: 40%

3) PA3: Laboratory practices

Suppose:

a) Attendance at two laboratory sessions (scheduled time in weeks 5 and 13, to confirm the start of the semester)

Warning: Being a lab, there is no possibility of recovering them out of traineeships established. Any incident affecting attendance at the meeting that has not been communicated promptly to the teacher will NOT be attended.

b) Presentation of a report of the laboratory work (during, week 14)

Percentage: 15%

- OPTIONAL Assessment activity (NOT COMPULSORY)

A) Group Afternoon:

PA4 Participation. 5% share classes of problems. Test 5%

Percentage: 10%

B) Group Morning:

PA4: written test 1 (problem solving), Week 6 (topics: course developed until week 5 included); written test 2 (problem solving), Week 13 (topics: the block of electromagnetism developed until week 12 included)

Percentage: 10%

II. Final mark resulting of continuous assessment throughout the semester

The final mark will be obtained by applying the percentages established, and the following condition: must have obtained a minimum of 3 points in each of the two partial exams PA1 and PA2 to apply percentages. Who does not satisfy this condition will be submitted to Retake exam (PA5). In case of no show, you will finish the course with a maximum mark of 3.5 points.

III. RETAKE

PA5 Retake exam, Week 19

Content: all units

Grading Criteria:

a) The final mark of the students who make the retake is given by:

80% Retake exam PA5

15% Laboratory PA3

5% Activity evaluation PA4

b) Having done the Retake exam but without having done the Laboratory practices PA3, the final mark will be a maximum of 4, regardless of the result obtained applying the percentages referred in (a).

c) Without having done the Laboratory practices PA3 and the Retake exam, then the final mark will be NP.

III. Validation of the Laboratory practices

- The students who passed the Laboratory practices last academic course 15-16, will validate Laboratory and maintain their Laboratory mark for this current course, as far as their final mark was not a NP

- The Laboratory practices passed in previous years to 15-16 are not validated.

Bibliography

Resources

- interactive web site Electromagnetisme MACS-UdL:

sedna.udl.cat:8080/opencms7/opencms/fisica

- Exercices

- Laboratory guide

Bibliography

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