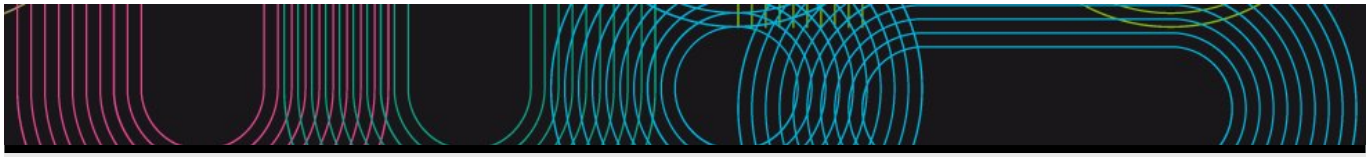
Universidade Vigo

Subject Guide 2020 / 2021



IDENTIFYING DATA				
Physics: Physics II				
Subject	Physics: Physics II			
Code	P03G370V01202			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Basic education	1st	2nd
Teaching language	Galician			
Department				
Coordinator	González Fernández, Pio Manuel			
Lecturers	González Fernández, Pio Manuel Méndez Morales, Trinidad Souto Torres, Carlos Alberto			
E-mail	pglez@uvigo.es			
Web				
General description	Didactic aims Dominate the concepts and physical laws of the thermodynamics and electromagnetism. Differentiate the physical appearances *involucrados in the resolution of a problem of engineering. Analyse, interpret and explain physical situations **cotias. Resolve problems of thermodynamics and electromagnetism applied the engineering. Dominate experimental technicians and handle it of instrumentation for the measure of physical magnitudes. *Design and schedule an experimental setting in team related with appearances of the physics applied. Dominate the acquisition of experimental data and his statistical treatment Dominate technicians of graphic representation and calculation of parameters of adjust. Present a report or technical memory (oral and writing) with utilisation of the new technologies.			

Competencies	
Code	
B1	Ability to understand the biological, chemical, physical, mathematical and representation systems necessary for the development of professional activity, as well as to identify the different biotic and physical elements of the forest environment and renewable natural resources susceptible to protection, conservation and exploitations in the forest area.
C6	Understanding and mastery of the basic concepts about the general laws of thermodynamics and electromagnetism and its application for the resolution of engineering problems.
D8	Ability to solve problems, critical reasoning and decision making

Learning outcomes			
Expected results from this subject	Training and Learning Results		
1R. 2018 Knowledge and understanding of the mathematicians and other inherent basic sciences to the his speciality in engineering, it a level that allow them purchase the rest of the competitions of the qualifications.	B1	C6	D8
5R. 2018 Capacity to identify, formulate and resolve problems of engineering in the his speciality; choose and apply analytical methods, of calculation and experiments properly established; Recognize the importance of the social restrictions, of health and security, environmental, economic and industrial.			
10R. 2018 Capacity and capacity to project and realize experimental investigations, interpret results and obtain conclusions in the his field of study.			
12R. 2018 practical Competition to resolve complex problems, realize complex projects of engineering and realize specific investigations stop his speciality.			

Contents
Topic

1.THERMODYNAMICS	1.1. INTRODUCTION TO THE THERMODINAMICS 1.2. THERMODYNAMIC PRINCIPLES 1.3. IDEAL GASES
2.ELECTROSTATICS	2.1. PRINCIPLES OF THE ELECTROSTATICS 2.2. CONDENSERS AND DIELECTRIC 2.3. CONTINUOUS CURRENT
3.ELECTROMAGNETISM	3.1. MAGNETOSTATIC 3.2. ELECTROMAGNETIC INDUCTION 3.3. ALTERNATING CURRENT

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	17	33	50
Problem solving	15	23	38
Laboratory practical	14	28	42
Report of practices, practicum and external practices	1	15	16
Problem and/or exercise solving	1.5	0	1.5
Problem and/or exercise solving	2.5	0	2.5

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	Exhibition by part of the professor of the contents of the matter, foundations and theoretical bases and guidelines of the exercises to develop by the student.
Problem solving	The professor gives the general guidelines for the resolution of problems or exercises related with the matter. The student has to develop the suitable or correct solutions by means of the application of formulas and the application of procedures.
Laboratory practical	Activities realised in the laboratory of application of the knowledges to concrete situations and of acquisition of basic skills and *procedimentaLEs related with the matter. The student adopts an active role, developing diverse actions (realisation of an experiment, setting, manipulation of scientific instrumentation and taking of experimental data) to build his knowledge (graphic representation and deduction of the physical law that governs the experiment).

Personalized assistance

Methodologies	Description
Lecturing	Resolution of doubts and customized help in tutorial schedule.
Laboratory practical	Resolution of doubts and customized help in tutorial schedule.
Problem solving	Resolution of doubts and customized help in tutorial schedule.

Assessment

	Description	Qualification	Training and Learning Results
Report of practices, practicum and external practices	Formative evaluation, made of a continuous way, carried out fundamentally in the classes of laboratory that allows a continuous follow-up and a *realimentación constructive. It will value the presence and active participation in classes and in works *grupales, by means of checklists and by direct observation, and the quality of the works and individual reports and of group.	20	B1 C6 D8
Problem and/or exercise solving	It will evaluate the theoretical and practical knowledges of the matter using like objective instrument the answer written of several questions of theoretical application-practical.	35	B1 C6 D8
Problem and/or exercise solving	It will evaluate the theoretical and practical knowledges of the matter (35%) and the purchased in the classes of laboratory (10%) using like objective instrument the resolution written of problems and/or exercises.	45	B1 C6 D8

Other comments on the Evaluation

In each methodology (Memory of practices, Proof of short answer and Resolution of problems) requires show a basic and minimum competition, that establishes in Apt=30%.

Numerical final qualification on scale of 10 points, according to the valid legislation.
Exam datesFirst date: 18 May 2020, 10:00 hoursSecond date: 8 Xuly of 2020, 10:00 hours.

The official dates: http://forestales.uvigo.es/*gl/&*lt;&*gt;

Sources of information

Basic Bibliography

Complementary Bibliography

Tipler P.A, **Física**, Barcelona, 1992,
González P., Lusquiños F, **Fundamentos Físicos para Forestais**, Vigo, 2010,
Sears F.W., Zemansky M.W., Young H.D., Freedman R.A, **Física**, México, 1999,
Gettys W.E., Keller F.J., Skove M.J, **Física clásica y moderna**, Madrid, 1992,
González P., Lusquiños F, **Física en imaxes**, Vigo, 2007,

Recommendations

Subjects that are recommended to be taken simultaneously

Mathematics: Overview of mathematics/P03G370V01203

Subjects that it is recommended to have taken before

Physics: Physics I/P03G370V01102
Mathematics: Mathematics and IT/P03G370V01103

Contingency plan

Description

=== EXCEPTIONAL PLANNING ===
Given the uncertain and unpredictable evolution of the health alert caused by COVID-19, the University of Vigo establishes an extraordinary planning that will be activated when the administrations and the institution itself determine it, considering safety, health and responsibility criteria both in distance and blended learning. These already planned measures guarantee, at the required time, the development of teaching in a more agile and effective way, as it is known in advance (or well in advance) by the students and teachers through the standardized tool.

=== ADAPTATION OF THE METHODOLOGIES ===

* Teaching on line
We will use the tools of Remote Campus in synchronous way for the exhibition of contents, foundations, theoretical bases, general guidelines for resolution of problems and practical cases. They will prepare specific didactic materials for the teaching on line that consist in presentations ppt recorded with voice, utilisation of graphic resources, simulators of physical situations. All the didactic material and resources are available in the platform Faitic.

Virtual laboratory
To make the practices of laboratory we will implant a Virtual Laboratory using simulators that allow the taking of data in experimental conditions. It will use the methodology Flipped Classroom where provides to the students a video with indications on the practice and the URL of a simulator to make experimental setting and taking of data. Later it makes the corresponding session in Remote Campus in synchronous way for discussion of results, put in common, explanation of doubts and preparation of technical reports.

* Mechanism face-to-face of attention to the students (titorías)

Personalised attention. Communication by email or another telematic tool. Attention in In virtual Dispatch (Remote Campus).

=== ADAPTATION OF The EVALUATION ===

We will make test on-line (Remote Campus and Faitic) by means of questionnaire of multiple choice that will consist in
a) 10-20 theoretical questions
b) 5-10 short problems or practical cases
We keep the marks distinguished in the educational guide of the matter.