UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2021/22
Subject (*)	Physics 1		Code	730G05002
Study programme	Grao en Enxeñaría Naval e Oceánica			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	First	Basic training	6
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e Industrial			
Coordinador	Saavedra Otero, Emilio	E-mail	emilio.saavedra@udc.es	
Lecturers	Saavedra Otero, Emilio	E-mail	emilio.saavedra@udc.es	
Web				
General description	Comprensión e dominio dos conceptos básicos sobre as leis xerais da mecánica e ondas , así como da súa aplicación para resolver problemas propios da enxeñaría.			
Contingency plan	1. Modifications to the contents REMAIN UNCHANGED 2. Methodologies *Teaching methodologies that are maintained NON-ATTENDANCE MASTER CLASS *Teaching methodologies that are modified -PROBLEM SOLVING VIA TEAMS. -VIRTUAL LABORATORY PRACTICES: THE TEACHER WILL PROVIDE EXPERIMENTAL DATA AND THE STUDENT WILL COVER THE REPORT OF EACH PRACTICE ACCORDING TO THE INDICATED PRACTICE SCRIPTS AND WILL DELIVER THEM IN THE CORRESPONDING MOODLE TASK, EACH ONE IN ITS PLANNED REALIZATION DATE. 3. Mechanisms for personalized attention to students -TUTORING VIA EMAIL OR MEETING VIA TEAMS BY APPOINTMENT BY MAIL. -THEORY SELF-ASSESSMENT TEST AVAILABLE WITH PERMANENT ACCESS IN MOODLE 4. Modifications in the evaluation THE OBJECTIVE TESTS WILL BE NON-PRESENTIAL. *Evaluation observations: THEORY TESTS: SHORT ANSWER TEST QUESTIONNAIRES (TRUE/FALSE, MULTIPLE CHOICE OR COMBINATION), VIA MOODLE. PROBLEM TESTS: PROBLEM SOLVING OF VARIOUS TOPICS AND SENDING OF SOLUTIONS AND CALCULATIONS TO THE CORRESPONDING MOODLE TASK 5. Modifications to the bibliography or webgraphy IF THE CONDITIONS IMPOSED IN THE CONTINGENCY PREVENT ACCESS TO THE LIBRARY, THE TEACHER WILL PROVIDE ONLINE BIBLIOGRAPHY OR DOCUMENTATION IN DIGITAL FORMAT SIMILAR TO THAT PROPOSED IN THE TEACHING GUIDE			

Study programme competences	
Code	Study programme competences
A2	Understanding and domination of the basic concepts on the general laws of the, thermodynamics, mechanics, fields and waves and electromagnetism and its application for the resolution of problems characteristic of the engineering
B1	That the students proved to have and to understand knowledge in an area of study what part of the base of the secondary education, and itself tends to find to a level that, although it leans in advanced text books, it includes also some aspects that knowledge implicates proceeding from the vanguard of its field of study
B3	That the students have the ability to bring together and to interpret relevant data (normally in its area of study) to emit judgments that include a reflection on relevant subjects of social, scientific or ethical kind
B5	That the students developed those skills of learning necessary to start subsequent studies with a high degree of autonomy
B6	Be able to carrying out a critical analysis, evaluation and synthesis of new and complex ideas.
C1	Using the basic tools of the technologies of the information and the communications (TIC) necessary for the exercise of its profession and for the learning throughout its life.
C5	Assuming the importance of the learning as professional and as citizen throughout the life.

Learning outcomes			
Learning outcomes	Study programme competences		
Understanding and know-how of static, kinematic, dynamic, waves, and their applications for the resolution of engineering situations.	A2	B1 B3 B5 B6	C1
Assume as a professional and citizen the importance of continuous learning throughout life.			C5

Contents	
Topic	Sub-topic
The following chapters expand the topics that the Memoria de Verificación stipulates:	magnitudes, physical unities and dimensions, vectors, kinematics, statics, dynamics of particles, dynamics of a sistem of particles and dynamics of rigid solid, fluid mechanics and mechanical waves.
Chapter I INTRODUCTION	Section 1 Introduction Section 2 Physical magnitudes Section 3 Vectors
Chapter II STATIC EQUILIBRIUM	Section 4 Equilibrium of particles Section 5 Systems of forces Section 6 Equilibrium of rigid bodies
Chapter III KINEMATICS	Section 7 Kinematics of particles Section 8 Relative movement
Chapter IV DYNAMICS OF A SINGLE PARTICLE	Section 9 Principles Section 10 Work and energy
Chapter V DYNAMICS OF RIGID BODIES	Section 11 Dynamics of particles systems Section 12 Dynamics of rigid bodies
Chapter VI DYNAMICS OF DEFORMABLE MEDIA	Section 13 Deformable media Section 14 Statics of fluids Section 15 Dynamics of fluids
Chapter VII Mechanical waves	Section 16 Wave movement Section 17 Sound

Planning

Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A2 B6 C5	30	27	57
Problem solving	B1 B3 B5 C1	20	20	40
Laboratory practice	B5 C1	10	4	14
Mixed objective/subjective test	A2 B1 B3 B6	2	3	5
Mixed objective/subjective test	A2 B1 B3 B6	4	8	12
Personalized attention		10	0	10
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Guest lecture / keynote speech	Largest group. Explanation and resolution of fundamentals. Comments on bibliography
Problem solving	Medium group: Study of cases and problem solving.
Laboratory practice	Laboratory: students will perform 4 sessions (2 h per session)
Mixed objective/subjective test	The curse is divided in 2 parts, each one with their exam. The first part includes: introduction, static and kinematics. The exam will be held on a date fixed by the official calendar.
Mixed objective/subjective test	The second exam includes: dynamics of particles, dynamics of rigid bodies, continuous media and waves. The date coincides with the final exam which will be approved by Xunta de Centro.

Personalized attention	
Methodologies	Description
Problem solving	Tutorials about lectures, exercises, and other situations in relation with the course. Besides face-to-face tutorial, students could comment their questions by means of the e-mail and Teams. Students with academic exemption must: i attend to the exams, ii carry out the three or four lab experiments, to do that, lectures are able suitable dates iii deliver the task in the delivery date, the exercises can be deliver both by hand and electronically. and can do the tutoring telematically. iv Students with academic dispensation are also required to take the self-assessment tests for each theory topic..

Assessment			
Methodologies	Competencies / Results	Description	**Qualification**

Laboratory practice	B5 C1	? Attendance at lab is compulsory. ? To get a final qualification students must make 4 sessions. ? They will be not admitted lack of assistance without justification ? Qualifiaciton of practices represents 10% of the total.	10
Mixed objective/subjective test	A2 B1 B3 B6	? There will be a Objetive test that will be held during the four-month period. This exam includes the chapters of introduction to Physics, estatics and kinematics ? The contribution of this objetive test has an score of 3, 30% of the total. The test will be in 3 parts: theory (T with a maximum score of 1.2), problems solving (P with a maximum score of 0.9) and homeworks (E with a maximum score of 0.9). ? The total qualification is given by: NOTA (E1)= T+ P+ E ? If a lack of attendance before the exam NOTA(E1) = T+ P+ E - 0.5	21
Mixed objective/subjective test	A2 B1 B3 B6	? The final Objective test will include the second part of the course: dynamics of particles, dynamics of rigid solid, fluids and waves. ? The score of this exam is five, 50% of the total. ? The score distribution is similar to the previous one: T with a maximum score of 2, P with a maixum score of 1.5, and E with a maximum score of 1.5 Then, NOTA (E2)=T + P + E ? If a lack of attendance before the exam, NOTA(E2) = T+ P + E - 0.5 ? The exam date will coincides with the final exame date to be approved in the Xunta de Centro.	35
Guest lecture / keynote speech	A2 B6 C5	- Attendance at court sessions is mandatory. The self-assessment tests available in Moodle will be counted for evaluation purposes. One attempt is required in each topic to achieve the maximum score. - Due to the non-presential nature, students with Academic Dispensation are also required to take the self-assessment tests for each topic.	10

Problem solving	B1 B3 B5 C1	- Attendance at problem-solving classes is mandatory. ? In total, there will be 65 problems (30+35). A minimum limit is required to score, 80 % of right solutions. Score will be proportional toe the right solutions. The solved exercices will only be admited at the demanded dates. ? Attendance at tutorial hours is compulsory (4 tutorials per exam, 8 in total). Other the score would be penalised. ? The first 30 exercices will be scored from 24 right exercicies . The score will start in 4 (over 10) and each right solution will add 1 point, to 30. ? The 35 exercices, correponding to the second part, will be scored from28 right exercices. The score will start in 3 (over 10) and each right solution will add 1 point, to 35.	24

Assessment comments

The criteria for the second oportunity (exam in June/July) are the same as in the other objective tests.
During the second opportunity exam, students are only going to be tested
about the parts which will be pointed out by the professors.
The scores of assistance, lab and homeworks not examinated will be preserved in the final mark.
The percentage of this test on the final score depends on the part that has to be examined.
The exam date will be the second oportunity exam date which will be approved in the Xunta de Centro. Final qualification is given by the equation: Mark = Practices + Asistence + E1 + E2
where:Practices is the score of lab practices, 1 point maximum.Asistence is the ratio number of attendance, 1 point maximum (**) E1 is the score of the first Objective test
E2 is the score of the first Objective test
(**) Students with Academic Dispensation will be scored from participation in test solving.
Criteria for the
evaluation of objective tests and problem solving
Rubric will be used to
evaluate the competency Understanding and mastery of the
fundamentals about statics, kinematics, dynamics and waves and their
applications to engineering problems. The following
sub-competencies shall be taken into account:
The student has
knowledge about general laws

The student analyzes
problems, identifies magnitudes and their relative importance.

The student uses the
appropriate tools to analyse and to calculate.

The student is
capable of analyzing the coherence of the results.

The student gets
error-free numerical results.

The student expresses
the result with the appropriate units.

Sources of information	
Basic	- Francis Sears, Zemansky, Young (1986-1998). Física Universitaria. Addison-Wesley - Tipler, Paul Allen (1992). Física. Reverté - Serway, Raymond A. (1992). Física. McGraw-Hill
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
CÁLCULO/730G02101
EXPRESION GRAFICA/730G02103
ÁLXEBRA/730G02106
ECUACIÓNS DIFERENCIAIS/730G02110

Subjects that continue the syllabus
Other comments
To achieve a sustainable environment and accomplishing with the objective of 5th action: ?Docencia e investigación saúdable e sustentable ambiental e social? of the "Plan de Acción Green Campus Ferrol":   A sustainable use of resources will be made and the negative impact on the environment will be preventedMoreover, during the lecture on this subject, the gender perspective is going to be considered (non sexist language will be used, both sex author bibliography will be considered, it will be fostered the involvement of all gender students?)

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.