### Universida<sub>de</sub>Vigo

Subject Guide 2017 / 2018

| IDENTIFYING  | <u> </u>   |                          |                   |               |
|--------------|--|--------------------------|-------------------|---------------|
| Physics: Phy | •  |                          |                   |               |
| Subject      | Physics: Physics I   |                          |                   |               |
| Code         | P03G370V01102  |                          |                   |               |
| Study        | (*)Grao en   |                          |                   |               |
| programme    | Enxeñaría Forestal   | Clara                    | V                 | 0             |
| Descriptors  | ECTS Credits   | Choose                   | Year              | Quadmester    |
| <del></del>  | 6  | Basic education          | 1st               | <u>1st</u>    |
| Teaching     |  |                          |                   |               |
| language     |  |                          |                   |               |
| Department   |  |                          |                   |               |
| Coordinator  | González Fernández, Pio Manuel                               |                          |                   |               |
| Lecturers    | González Fernández, Pio Manuel                               |                          |                   |               |
| E-mail       | pglez@uvigo.es   |                          |                   |               |
| Web          |  |                          |                   |               |
| General      | Didactic aims  |                          |                   |               |
| description  | Dominate the concepts and physical laws of the m             |                          |                   |               |
|              | Differentiate the physical appearances *involucrad           |                          | a problem of eng  | ineering.     |
|              | Analyse, interpret and explain daily physical situat         |                          | _                 |               |
|              | Resolve problems of mechanics, fields and waves a            |                          |                   |               |
|              | Dominate experimental technicians and the handle magnitudes. | e of instrumentation fo  | or the measure of | pnysicai      |
|              | Design and schedule an experimental setting in tea           | am related with appea    | rances of the phy | sics applied. |
|              | Dominate the acquisition of experimental data and            |                          |                   |               |
|              | Dominate technicians of graphic representation an            |                          |                   |               |
|              | Present a report or technical memory (oral and wri           | ting) with utilisation o | f the new technol | ogies.        |

#### Competencies

Code

- B2 CG-02: Capacidade para comprender os seguintes fundamentos necesarios para o desenvolvemento da actividade profesional: Físicos.
- C2 (\*)CE-02: Comprensión e dominio dos conceptos básicos sobre as leis xerais da mecánica, campos e ondas e a súa aplicación para a resolución dos problemas propios da enxeñaría.
- D6 (\*)CBI 6: Adquirir capacidade de resolución de problemas.

| Learning outcomes  |     |           |            |
|--|-----|-----------|------------|
| Expected results from this subject   | Tra | ining and | d Learning |
|  |     | Resu      | ılts       |
| Lana relation between competitions *and results, *and he weight of each competition inside wool matter show * in him *pdf *attach.                     | B2  | C2        | D6         |
| http://forestales.uvigo.es/sites/default/files/02%20**Fisica%20*L*Pdf#**overlay-**context=are/**content/competitions-*and-resulted-of-*learning-by-mal | ter |           |            |

| Contents               |   |  |
|------------------------|---|--|
| Topic                  |   |  |
| 1. KINEMATICS          | 1.1.KINEMATICS OF THE MATERIAL POINT      |  |
|                        | 1.2.KINEMATICS OF THE RIGID SYSTEMS       |  |
| 2. DYNAMICS            | 2.1. DYNAMIC OF THE POINT AND THE SYSTEMS |  |
|                        | 2.2. MOMENTS OF INERTIA                   |  |
|                        | 2.3. DYNAMIC OF THE BEEN USED TO RIGID    |  |
| 3. STATIC              | 3.1. LAWS OF STATIC                       |  |
| 4. MECHANICAL SYSTEMS  | 4.1. FRICTION BETWEEN USED TO             |  |
|                        | 4.2. YOU SCHEME SIMPLE                    |  |
|                        | 4.3. ELASTICITY                           |  |
| 5. MECHANICAL SWINGS   | 5.1. FREE SWINGS                          |  |
|                        | 5.2. SWINGS CUISHIONED AND FORCED         |  |
| 6. MECHANICS OF FLUIDS | 6.1. HYDROSTATIC                          |  |
|                        | 6.2. HYDRODINAMICS                        |  |

| Planning                           |             |                             |             |
|------------------------------------|-------------|-----------------------------|-------------|
|                                    | Class hours | Hours outside the classroom | Total hours |
| Master Session                     | 20          | 30                          | 50          |
| Troubleshooting and / or exercises | 15          | 22.5                        | 37.5        |
| Laboratory practises               | 17          | 25.5                        | 42.5        |
| Reports / memories of practice     | 1           | 15                          | 16          |
| Short answer tests                 | 1.5         | 0                           | 1.5         |
| Troubleshooting and / or exercises | 2.5         | 0                           | 2.5         |
|                                    |             |                             |             |

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

| Methodologies                      |   |
|------------------------------------|---|
|                                    | Description   |
| Master Session                     | 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.   |
| Troubleshooting and / or exercises | The professor gives the general guidelines for the resolution of problems or exercises related with<br>the matter. The student has to develop the suitable or correct solutions by means of the application<br>of formulas and the application of procedures.   |
| Laboratory practises               | 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 *alumnado 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 attention             |              |
|------------------------------------|--------------|
| Methodologies                      | Description  |
| Master Session                     | <del>-</del> |
| Laboratory practises               |              |
| Troubleshooting and / or exercises |              |

| Assessment                         |   |              |                                       |
|------------------------------------|---|--------------|---------------------------------------|
|                                    | Description   | Qualificatio | n Training and<br>Learning<br>Results |
| Reports / memories of practice     | Formative evaluation, realised 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           | B2 C2 D6                              |
| Short answer tests                 | They 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           | B2 C2 D6                              |
| Troubleshooting and / or exercises | They 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           | B2 C2 D6                              |

#### Other comments on the Evaluation

&\*nbsp;In each methodology (Memories 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.

| Sources of information   |
|--|
| Basic Bibliography   |
| Complementary Bibliography   |
|  |
| Tipler P.A, <b>Física</b> , Barcelona, 1992,   |
| González P., Lusquiños F, <b>Fundamentos Físicos para Forestais</b> , Vigo, 2010,    |
| Sears F.W., Zemansky M.W., Young H.D., Freedman R.A, <b>Física</b> , México, 1999,   |
| Gettys W.E., Keller F.J., Skove M.J, <b>Física clásica y moderna</b> , Madrid, 1992, |
| González P., Lusquiños F, <b>Física en imaxes</b> , Vigo, 2007,                      |

### Recommendations

# Subjects that continue the syllabus Physics: Physics II/P03G370V01202

## **Subjects that are recommended to be taken simultaneously** Mathematics: Mathematics and IT/P03G370V01103