

Program	09TT- Engineering in Telecommunication Technologies and Services
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Course number and name	
Number	95000003
Name	Physics 1 Física general 1
Semester	Y1-S1

Credits and contact hours	
ECTS Credits	6
Contact hours	75

Coordinator's name	Federico Cebollada Baratas
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Specific course information		
Description of course content		
A course on physics covering the most relevant topics of classical mechanics and electromagnetism at an undergraduate level.		
List of topics to be covered		
Mechanics: Vector analysis, Kinematics, Particle dynamics, Work and energy, Particle systems, Rigid bodies. Electromagnetism: Electrostatics, Conductors and capacitors, Electric current, Magnetic field, Electromagnetic induction. Experimental physics: Introduction to error theory; Mechanics: physical pendulum, free fall, inclined plane; Electromagnetism: multimeter, charge and discharge process in capacitors, measurement instruments, meter bridge.		
Prerequisites or co-requisites		
The basic knowledge of mathematics and physics that the students are expected to get during secondary education.		
Course category in the program		
<input checked="" type="checkbox"/> R (required)	<input type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)

Specific goals for the course	
Specific outcomes of instruction	
RA1: Learning and understanding the physical laws and theories ruling the behaviour of the Universe.	
RA2: Learning how to carry out physical reasoning to get the ability to solve problems using the basic laws of Physics.	

RA3: Understanding the relevance of experiments as the sole source to prove a physical theory.

RA4: Getting the qualitative and quantitative knowledge of the basic physical phenomena required to gain insight into those of higher complexity.

RA5: Understanding the basic natural phenomena leading to nowadays technology.

Student outcomes addressed by the course

CG01, CG02, CG03, CG04, CG05, CG06, CG07, CG08, CG09, CG10, CG11, CG12, CG13, CEB3.

Bibliography and supplemental materials

Bibliography:

1. P.A. tippler and G. Mosca, Physics for Scientist and Engineers, 6th edition (W.H. Freeman, New York, 2007).
 2. R. A. Serway and J. W. Jewett, Physics for Scientists and Engineers, 9th edition (Brooks/Cole, Boston, 2014).
 3. H. D. Young and R. A. Freedman, R.A, University Physics, 13th edition (Pearson, San Francisco, 2012).
 4. P. Sánchez, V. Alcober, C. Duro, A. Sanz, A. y P. Mareca, Manual del Laboratorio de Física (Dpto. de Publicaciones, E.T.S.I. de Madrid, 2013).
- Web: <http://www-app.etsit.upm.es/departamentos/fis/index.html>

Teaching methodology

<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> problem solving sessions	<input type="checkbox"/> collaborative actions	<input checked="" type="checkbox"/> laboratory sessions
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Other: Tutorial sessions