

Updated On	2022/04/22																															
Curricular Year / Period	2021/22 / S2																															
Course	Agronomia																															
Curricular Unit	Biofísica																															
Language(s) of Instruction	Português																															
ECTS/tempo de trabalho (horas)	<table border="1"> <thead> <tr> <th rowspan="2">ECTS</th> <th rowspan="2">Total</th> <th colspan="9">Horas de contacto semestral</th> </tr> <tr> <th>T</th> <th>TP</th> <th>PL</th> <th>S</th> <th>TC</th> <th>E</th> <th>O</th> <th>OT</th> <th>EC</th> </tr> </thead> <tbody> <tr> <td>6</td> <td></td> <td>0</td> <td>64</td> <td>32</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>T - Theoretical; TP - Theoretical and practical; LP - Laboratory Practice; S - Seminar; TG - Tutorial guidance; FW - Fieldwork; T - Training; ; EC - Clinical teaching; O* - Other hours typified as Clinical Training under the Directive 77/453/EEC of June 27, adapted by Directive 2005/36/EC.</p>	ECTS	Total	Horas de contacto semestral									T	TP	PL	S	TC	E	O	OT	EC	6		0	64	32	0	0	0	0	0	0
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6		0	64	32	0	0	0	0	0	0																						
Teacher in charge (GDPR consent) <small>[complete name, email]</small>	José António Vaz Caraças Telo Da Gama / jose.gama@ippportalegre.pt																															
Other teachers (GDPR consent) <small>[complete name, email]</small>	Susana Barreto Saraiva Dias / sdias@ippportalegre.pt																															
Prerequisites <small>[Curricular Units that must precede and specific entry competences]</small>	Knowledge of Mathematics and Physics at secondary school level.																															
Learning outcomes <small>[Description of the overall and specific objectives] [Knowledge, skills and competences to be developed by students]</small>	<p>Understand the general principles of Classical Mechanics. Know how to apply these concepts in solving theoretical-practical problems and in experimental activities.</p> <p>To provide basic training in the field of physics linked to agricultural sciences, providing basic theoretical knowledge and its application to the various curricular units of the course's study plan.</p> <p>Demonstrate the applicability and role played by physics in the description and quantification of natural phenomena, related to biological sciences and engineering; To cement and expand the general culture in the area of physics, with an emphasis on energy quantification, on the relative importance of the various forms of energy production today.</p>																															
Syllabus	<p>1 Quantities and physical units, understanding in detail the different aspects related to data acquisition and physical quantities and units;</p> <p>2 Vector calculus applied to physics, Distinguish vector and scalar quantities, Perform vector operations.</p> <p>3 Uniformly accelerated movements; Analyze and solve problems involving constant and varying speed.</p> <p>Newton's 4 Laws: Understanding Newton's Laws, Understanding and solving problems involving Newton's principles.</p> <p>5 Statics: Analyze, understand and solve static problems.</p> <p>6 Work, energy and power: Understanding and solving problems involving force, work and power, Understanding in detail and solving problems about the operation of simple machines.</p> <p>7 Thermal energy and heat-related quantities: Understand the facts about thermal energy.</p> <p>8 Heat transfers: Understanding and solving problems involving heat transfers.</p> <p>9 Physical properties of fluids: Understand the physical properties of fluids.</p> <p>10 Hydrostatics: Analyzing, understanding and solving hydrostatics problems.</p> <p>11 Hydrokinematics: Understand the principles of Hydrokinematics, Perform calculations involving the principle of conservation of mass and energy in a flow.</p>																															
Teaching methodologies (including assessment) <small>[Specify the types of assessment and the weights and evaluation criteria]</small>	<p>1 - Teaching methodologies</p> <p>Theoretical-practical classes using the projection of slides and use of a blackboard, following the contents of the curricular unit. Use of computer simulations to illustrate some concepts and solve exemplary problems. The Biophysics CU can be done by continuous assessment or by exam.</p> <p>Due to the restrictions on social contact resulting from the successive states of emergency decreed by the guardianship and the contingency plan established by the Polytechnic Institute of Portalegre, classes can take place in a non-face-to-face regime.</p>																															

	<p>2 - Period assessment</p> <p>The student is subject to the following assessment moments:</p> <ul style="list-style-type: none"> - 10 Practical Worksheets (FTP) - with no minimum grade worth 5% of the final grade (each one); - 2 Frequencies (Fr) - minimum grade of 8.5v in each frequency worth 25% of the final grade (each one). <p>Thus, in Continuous Assessment, the Final Grade (NF) will be the sum, with respective weights, of the assessments obtained at the aforementioned assessment moments as follows:</p> <p>NF=50% average (FTP) + 50% average (Fr)</p> <p>The FTPs will be carried out at home and submitted via PAE papers and, later, defended in the classroom context by the students, in random selection, throughout the semester.</p> <p>In the exam, all the material comes out and this is worth 100% of the final grade</p> <p>3 - Examination assessment</p> <p>It will be scheduled by the Academic Services, with a weighting of 100% of the Final Grade and whose minimum grade for approval is 9.5 values.</p>
<p>Bibliography</p>	<p>1 - Main Bibliography</p> <p>Abreu, M.C., Matias, L. & Peralta, L.F. (1994). Física Experimental Uma Introdução. (Lisboa): Editorial Presença.</p> <p>Keller, F.J., Gettys, W.E., & Skove, M.J. (1999). Física. vol. 1. (São Paulo): Makron Books. ISBN: 85-246-0542-4</p> <p>Tipler, P. & Mosca, G. (2004). Física para Cientistas e Engenheiros. vol. 1, 5ª edição. New York: W.H. Freeman and Company. ISBN 978-85-216-1710-5</p> <p>Lencastre, A. (1983) - Hidráulica Geral Ed. Hidroprojecto, Lisboa</p> <p>Quintela, A. C. (1983) Hidráulica Geral Ed. Fundação Calouste Gulbenkian, Lisboa</p> <p>2 - Complementary Bibliography</p> <p>Bibliografia complementar</p> <p>R. Serway , J. Jewett. Physics for Scientists and Engineers with Modern Physics. Thomson. 7th edition. ISBN: 978-0-495-11240-2</p> <p>Sears, Francis; Zemansky, Mark W. & Young Hugh D. (1991). Física. vol. 1. (Rio de Janeiro):Livros Técnicos e Científicos Editora. ISBN: 85-216-0155-7</p>
<p>Special Situations [Students with special status]</p>	<p>1 - Period assessment - Students with special status</p> <p>For students with special status, the rules set out in the specific regulations apply. Mobility students will have their own work plan, depending on their attendance conditions. Students in special situations who, under their statute, cannot follow the teaching-learning program and/or the planned assessment must, in the first month of classes, contact the UC professor to establish their Work Plan. and for participation in the evaluation process.</p> <p>2 - Examination assessment - Students with special status</p> <p>For students with special status, the rules set out in the specific regulations apply. Mobility students will have their own work plan, depending on their attendance conditions. Students in special situations who, under their statute, cannot follow the teaching-learning program and/or the planned assessment must, in the first month of classes, contact the UC professor to establish their Work Plan. and for participation in the evaluation process.</p>