

Updated On	2023/09/19																																																			
Curricular Year / Period	2023/24 / S1																																																			
Course	Equiniculture																																																			
Curricular Unit	Biochemistry																																																			
Language(s) of Instruction	Português Inglês																																																			
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 rowspan="2">6</td> <td rowspan="2">160</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>32</td> <td>16</td> <td>16</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	160											32	16	16	0	0	0	0	0	0
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		32	16	16	0	0	0	0	0	0																																										
Teacher in charge (GDPR consent) <small>[complete name, email]</small>	Ana Isabel Rodrigues Cordeiro / ana_cordeiro@ippportalegre.pt																																																			
Prerequisites <small>[Curricular Units that must precede and specific entry competences]</small>	Not applicable																																																			
Learning outcomes <small>[Description of the overall and specific objectives] [Knowledge, skills and competences to be developed by students]</small>	<ol style="list-style-type: none"> Understand the concepts and interpret a set of knowledge in the field of Biochemistry Develop skills that allow describing the structure and function of biomolecules and understanding their importance in living beings. Master concepts associated with the main metabolic pathways, catabolism and anabolism, and oxidation-reduction reactions; oxidizing and reducing. 																																																			
Sustainable Development Goals																																																				
Syllabus	<ol style="list-style-type: none"> Structural and functional biochemistry <ol style="list-style-type: none"> Introduction Water and its properties pH concept and determination. Acids, bases and buffer solutions Amino acids, peptides and proteins Enzymes and enzymatic catalysis Carbohydrates. Reserve and structural polysaccharides Nucleotides and nucleic acid structure Lipids and biomembranes Introduction to Metabolism <ol style="list-style-type: none"> Concept and type of metabolic pathways: catabolism and anabolism Reduction oxidation reactions Glucidic metabolism. Glycolysis, oxidative decarboxylation of pyruvic acid, Krebs cycle, electron transport chain and oxidative phosphorylation. Neoglucogenesis Lipid metabolism. Oxidation of fatty acids. Fatty acid biosynthesis Protein metabolism. Biosynthesis of amino acids. Protein synthesis. Degradation of amino acids and urea cycle Metabolization of nucleic acids Mechanisms for regulating metabolic pathways. Metabolic integration and regulation 																																																			

<p>Teaching methodologies (including assessment)</p> <p>[Specify the types of assessment and the weights and evaluation criteria]</p>	<p>1 - Teaching methodologies</p> <p>The teaching / learning process is based on the individual work of the students, supported by a bibliography recommended by the teacher and notes collected by the students, both during classes and in the research carried out individually. Theoretical classes will be based on the exposure of the contents and on the discussion of the topics using, whenever possible, the support of audio-visual techniques. The practical classes work in conjunction with the theoretical classes. Practical laboratory classes use the planning and execution of laboratory work, which provide practical examples of the theoretical content. The theoretical and theoretical-practical component was individually assess in writing in two optional modalities: continuous assessment (two tests) or final exam. The final grade will be calculate as follows: 30% of the laboratory practical component and 70% of the grade obtained in writing in the theoretical and theoretical-practical component (minimum score of 10 out of 20).</p> <p>2 - Period assessment</p> <p>Continuous assessment, followed by complementary assessment, 2 written tests, performance of protocols and oral: 35% mark of the 1st test + 35% mark of the 2nd test + 30% mark of the protocols and oral exam.</p> <p>3 - Examination assesement</p> <p>Assessment by exam (Overall exam 70% written test score + 30% grade of protocols and oral exam).</p>
<p>Bibliography</p>	<p>1 - Main Bibliography</p> <p>McKee, T., McKee, J. (2009). Biochemistry: The Molecular Basis of Life, 4th ed., Oxford University Press, New York.</p> <p>Quintas, A., Freire, A. P., Halpern, M. J. et al. (2008). Bioquímica - Organização Molecular da Vida, Edições Lidel, Lisboa.</p> <p>Voet, D., Voet, J. G., Pratt, C.W. (2008). Principles of Biochemistry, 3rd ed., John Wiley & Sons, Inc., New Jersey.</p> <p>2 - Complementary Bibliography</p> <p>Apontamentos da docente</p>
<p>Special Situations</p> <p>[Students with special status]</p>	<p>1 - Period assessment - Students with special status</p> <p>Complementary assessment (2 written tests) Students with special status (worker / student) may be exempted from practical laboratory classes, presenting a written paper).</p> <p>2 - Examination assesement - Students with special status</p> <p>Assessment by exam (Overall exam 70% written test score + 30% grade of protocols and oral exam. Students with special status (worker / student) may be exempted from practical laboratory classes, presenting a written paper).</p>