

<b>Updated On</b>	2022/04/23																																									
<b>Curricular Year / Period</b>	2021/22 / S2																																									
<b>Course</b>	Equinicultura																																									
<b>Curricular Unit</b>	Genética e Reprodução Equinas																																									
<b>Language(s) of Instruction</b>	Português Inglês (apoio tutorial a estudantes ERASMUS+)																																									
<b>ECTS/tempo de trabalho (horas)</b>	<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>160</td> <td>16</td> <td>32</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	160	16	32	32	0	0	0	0	0	0
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<b>Teacher in charge (GDPR consent)</b> <small>[complete name, email]</small>	Rute Isabel Duarte Guedes Dos Santos / rutesantos@ippportalegre.pt																																									
<b>Prerequisites</b> <small>[Curricular Units that must precede and specific entry competences]</small>	No																																									
<b>Learning outcomes</b> <small>[Description of the overall and specific objectives] [Knowledge, skills and competences to be developed by students]</small>	Students should be able to: understand basic concepts of population genetics; estimate probabilities of occurrence of coat colors based on the genealogy; understand the concept of consanguinity; understand the concept of heterosis and identify applications of purebreeding and crossbreeding; solve simple problems by applying some of the learned concepts; understand the assumptions underlying the structure of a breeding program; plan actions undertaken during the breeding season in a stud; correctly perform estrus detection in the mare, and recognize changes in physiological estrus; understand the theoretical foundations of the techniques used in equine reproduction; critically evaluate the possible causes of reproductive failure in operation and point out possible solutions; monitor the delivery approach signals in the mare, the phases of eutocyc delivery and the normal parameters in the newborn foal.																																									
<b>Syllabus</b>	LECTURES AND APPLICATION LECTURES: 1. Fundamentals of population genetics 2. Simple genes in animal breeding 2.1. Genetics of coat color on horse 3. Inbreeding 4. Exogamy 5. Genetic parameters 6. Breeding programs. 7. The breeding mare and the oestrus cycle 8. The stallion 9. Applied aspects of reproductive management 10. Management of gestation and labor, and management of foal. PRACTICAL CLASSES: 1. Exercises on allelic frequencies, genotype frequencies and Hardy-Weinberg equilibrium. 2. Exercises to estimate coat color based on genealogical information. 3. Calculation of the coefficient of inbreeding and filling of kinship matrices. 4. Exercises on individual heterosis, direct effects and maternal effects of a race and maternal heterosis 5. Simple exercises on estimates of heritability and genetic value. 6. Planning of the reproductive management of a stud farm. 7. Applied aspects of estrus detection and gestational diagnosis. 8. Evaluation of equine semen.																																									
<b>Teaching methodologies (including assessment)</b> <small>[Specify the types of assessment and the weights and evaluation criteria]</small>	<p><b>1 - Teaching methodologies</b></p> <p>Lectures and application lectures, which expose the concepts and techniques to perform, and practical classes where they apply these same concepts using the methodology of document analysis and resolution of proposed problems, individually and in groups. Whenever possible, field trips and seminars on more specific topics will be held. In the genetics chapter after exemplification of the resolution of the exercises, the student will be asked to solve in the classroom comparable work. In 2019/2020, distance learning in synchronous sessions was used, due to de COVID 19 pandemic and the contingency measures adopted at the Polytechnic Institute of Portalegre.</p> <p><b>2 - Period assessment</b></p> <p>THEORETICAL AND PRACTICAL ASSESSMENT: 2 written tests, each representing 40% of the final grade (minimum grade: 10 out of 20 marks). GROUP WORK: Presentation of a report, consisting in the characterization of technical items in a studfarm after a previous visit, and in a critical analysis; OR INDIVIDUAL ASSIGNMENT: literature</p>																																									

	<p>review on a subject in the syllabus; either alternative represents 20% of final grade (minimum grade: 10 out of 20 marks).</p> <p><b>3 - Examination assesement</b></p> <p>THEORETICAL AND PRACTICAL ASSESSMENT:written test, representing 40% of the final grade (minimum grade: 10 out of 20 marks). GROUP WORK: Presentation of a report, consisting in the characterization of technical items in a studfarm after a previous visit, and in a critical analysis; OR INDIVIDUAL ASSIGNMENT: literature review on a subject in the syllabus; either alternative represents 20% of final grade (minimum grade: 10 out of 20 marks).</p>
<p><b>Bibliography</b></p>	<p><b>1 - Main Bibliography</b></p> <p>da GAMA, Luís Telo. Melhoramento genético animal. Lisboa : Escolar Editora, 2002. 306 pp. ISBN 972-592-151-8.</p> <p>SILVA, Carolina; ORTIZ, Jose; SANTOS, Rute; MINAS; Miguel. Manual técnico: Acompanhamento reprodutivo em éguas e transferência de embriões. Coleção C3i nº 13, Instituto Politécnico de Portalegre, 2020. 51 pag. ISBN 978-989-8806-37-6.</p> <p><b>2 - Complementary Bibliography</b></p> <p>ALLIER, P. (Coord.). Insémination artificielle équine: guide pratique. 2ª ed. Paris, 1996. 292 pag.. ISBN 2-910610-15-2;</p> <p>DAVIES-Morel, Mina. Breeding Horses. Blackwell Publishing, 2005. 218 pp. ISBN-10: 1-4051-2966-2</p> <p>ENGLAND, Gary C.W. Allen´s fertility and obstetrics in the horse. 2ª ed. London, 1996. 23 cm. ISBN 0-632-04084-X ;</p> <p>WAGONER, Don M. (Ed.). Equine genetics &amp; selection procedures. 2ªed. Texas, 1998. 542 pag. ISBN 0-935842-05-5;</p>
<p><b>Special Situations</b></p> <p>[Students with special status]</p>	<p><b>1 - Period assessment - Students with special status</b></p> <p>THEORETICAL AND PRACTICAL ASSESSMENT: 2 written tests, each representing 40% of the final grade (minimum grade: 10 out of 20 marks). GROUP WORK: Presentation of a report, consisting in the characterization of technical items in a studfarm after a previous visit, and in a critical analysis; OR INDIVIDUAL ASSIGNMENT: literature review on a subject in the syllabus; either alternative represents 20% of final grade (minimum grade: 10 out of 20 marks).</p> <p><b>2 - Examination assesement - Students with special status</b></p> <p>THEORETICAL AND PRACTICAL ASSESSMENT:written test, representing 40% of the final grade (minimum grade: 10 out of 20 marks). GROUP WORK: Presentation of a report, consisting in the characterization of technical items in a studfarm after a previous visit, and in a critical analysis; OR INDIVIDUAL ASSIGNMENT: literature review on a subject in the syllabus; either alternative represents 20% of final grade (minimum grade: 10 out of 20 marks).</p>