

# The Physiological bases of Farm Animal Growth [159]

## COURSE OUTLINE

### (1) GENERAL

|                                                                                                                                                                                                                                                                       |                                                                                                                 |                              |                |
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| <b>SCHOOL</b>                                                                                                                                                                                                                                                         | ANIMAL BIOSCIENCES                                                                                              |                              |                |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                  | DEPARTMENT OF ANIMAL SCIENCE                                                                                    |                              |                |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                               | Undergraduate [Required]                                                                                        |                              |                |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                    | 159                                                                                                             | <b>SEMESTER</b>              | 7th            |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                   | THE PHYSIOLOGICAL BASES OF FARM ANIMAL GROWTH                                                                   |                              |                |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i> |                                                                                                                 | <b>WEEKLY TEACHING HOURS</b> | <b>CREDITS</b> |
| Theory                                                                                                                                                                                                                                                                |                                                                                                                 | 3                            | 3              |
| <b>TOTAL</b>                                                                                                                                                                                                                                                          |                                                                                                                 | <b>3</b>                     | <b>3</b>       |
| <i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>                                                                                                                                              |                                                                                                                 |                              |                |
| <b>COURSE TYPE</b><br><i>general background, special background, specialised general knowledge, skills development</i>                                                                                                                                                | Scientific area                                                                                                 |                              |                |
| <b>PREREQUISITE COURSES:</b>                                                                                                                                                                                                                                          | -                                                                                                               |                              |                |
| <b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>                                                                                                                                                                                                                      | GREEK                                                                                                           |                              |                |
| <b>IS THE COURSE OFFERED TO ERASMUS STUDENTS:</b>                                                                                                                                                                                                                     | Yes (in English)                                                                                                |                              |                |
| <b>COURSE WEBSITE (URL):</b>                                                                                                                                                                                                                                          | <a href="https://mediasrv.aua.gr/eclass/courses/EZPY199/">https://mediasrv.aua.gr/eclass/courses/EZPY199/</a>   |                              |                |
| <b>TEACHING STAFF:</b>                                                                                                                                                                                                                                                | Theory: Simitzis P., Laliotis G., Politis I.<br>Laboratory: Simitzis P., Laliotis G., Politis I., Goliomytis M. |                              |                |

### (2) LEARNING OUTCOMES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
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| <b>Learning outcomes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <p>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</p> <p>Consult Appendix A</p> <ul style="list-style-type: none"> <li>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</li> <li>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</li> <li>Guidelines for writing Learning Outcomes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <p>The course "THE PHYSIOLOGICAL BASES OF FARM ANIMAL GROWTH" aims to familiarize students, in theoretical and practical level, with the contemporary physiological aspects applied in mechanisms of productive animal growth.</p> <p>Upon successful completion of the course, students will be able (according to Bloom) to:</p> <ul style="list-style-type: none"> <li>Describe and explain the physiological mechanisms of lipogenesis and lipolysis in the adipose tissue of productive animals (<b>Knowledge / Comprehension</b>).</li> <li>Analyze quantitatively and at the molecular level the role of enzymes and hormones involved in adipose tissue metabolism (<b>Analysis / Application</b>).</li> <li>Evaluate the factors that influence carcass and meat production in ruminants (<b>Analysis / Evaluation</b>).</li> <li>Compare and assess the characteristics of common breeds of cows, sheep, and goats for selection and breeding purposes (<b>Analysis / Evaluation / Synthesis</b>).</li> <li>Examine the factors affecting conception rate, gestation duration, and parturition, and use these to estimate reproductive potential, including prolificacy, viability, and profitability rates (<b>Analysis / Application / Evaluation</b>).</li> <li>Understand and explain the factors affecting milk production, mammary gland growth, and lactation development in ruminants (<b>Knowledge / Comprehension / Analysis</b>).</li> </ul> |  |
| <b>General Competences</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <p>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</p> <p>Search for, analysis and synthesis of data and information, with the use of the necessary technology</p> <p>Project planning and management</p> <p>Respect for difference and multiculturalism</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |

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| <i>Adapting to new situations</i><br><i>Decision-making</i><br><i>Working independently</i><br><i>Team work</i><br><i>Working in an international environment</i><br><i>Working in an interdisciplinary environment</i><br><i>Production of new research ideas</i> | <i>Respect for the natural environment</i><br><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i><br><i>Criticism and self-criticism</i><br><i>Production of free, creative and inductive thinking</i><br>.....<br><i>Others...</i><br>..... |
| <ul style="list-style-type: none"> <li>• Individual and group work</li> <li>• Producing new research ideas</li> <li>• Promotion of free, creative and inductive thinking</li> </ul>                                                                                |                                                                                                                                                                                                                                                                                          |

### (3) SYLLABUS

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| Body growth: Basics, Estimation of growth. Muscle tissue and adipose tissue, myogenesis, texture, growth and affecting factors on bones, muscle and adipose tissue growth and protein metabolism. Body composition. Affecting factors and methods of estimation on live animals and carcasses. Fattening efficiency, growth rate, feed conversion. Meat quality. Chemical composition, Physical, chemical and organoleptic characteristics. Problems on meat quality. Modifications of growth by exogenous hormones. |
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### (4) TEACHING and LEARNING METHODS - EVALUATION

| <b>DELIVERY</b><br><i>Face-to-face, Distance learning, etc.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | In classroom, face to face, in laboratory and in the field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |
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| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, laboratory education, communication with students</i>                                                                                                                                                                                                                                                                                                                                                                                                     | PowerPoint and video presentations. Communication with students via e-mail. Teaching support through access to the e-class platform, to on-line databases etc.                                                                                                                                                                                                                                                                                                                                                                                                       |                   |
| <b>TEACHING METHODS</b><br><i>The manner and methods of teaching are described in detail.</i><br><i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i><br><br><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>                             | Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Semester workload |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 26                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Laboratory practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 26                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Individual study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 23                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Course total (25 h of workload per ECTS)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>75</b>         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |
| <b>STUDENT PERFORMANCE EVALUATION</b><br><i>Description of the evaluation procedure</i><br><br><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i><br><br><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i> | The evaluation on the course's theory consists of:<br>1. final written examination on the course's theory (100%), consisting of:<br>I. Evaluation of elements of the course's theory<br>II. Short-answer questions<br>III. Multiple choice questions<br>2. Personal written essay and its presentation<br><br>The evaluation on the course's laboratory practice is determined by the final written examination (100%) consists of:<br>I. Evaluation of elements of the course's laboratory practice<br>II. Short-answer questions<br>III. Multiple choice questions |                   |

### (5) ATTACHED BIBLIOGRAPHY

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| <b>Proposed Literature:</b><br>1) Meat Science.<br>2) Journal of Animal Science (πχ F. N. Owens et al, (1993), Factors that alter the growth and development of ruminants, J. Anim. Sci. 71, 3138-3150).<br>3) Journal of Animal Physiology and Nutrition (πχ Y. A. Attia et al (2014), Growth performance, carcass quality, biochemical and haematological traits and immune response of growing rabbits as affected by different growth promoters, J. Anim. Phys. and Nutr. 98 (1) 128-139). |
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