



THE MODULE HANDBOOK
DOCTOR BIOLOGICAL SCIENCES STUDY PROGRAM
FACULTY OF BIOLOGY

SELECTED TOPIC FOR DISSERTATIONS

Applied Animal Physiology

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| Course code | BIDB243038 |
| Course level | Doctoral Program |
| Semester/ term | Odd/even |
| Course coordinator | Dr.biol.hom. Nastiti Wijayanti, S.Si., M.Si. |
| Lecture(s) | Dr.biol.hom. Nastiti Wijayanti, S.Si., M.Si. Dr. Slamet Widiyanto Dr. Fajar Sofyantoro |
| Language | Indonesian/English |
| Classification within the Curriculum | Compulsory Specialization Courses |
| Teaching format/ class hours per week during the semester | This course is planned to have 14 teaching weeks and 2 weeks of examination. |
| Workload | 1,125 hours/day 5 days/week 5,625 hours/week 16 Weeks/Semester total workload : 90 hours/3,6 ECTS |
| Credits | 3.6 ECTS |
| Requirements | - |
| Program Learning Outcome | CPL 2.1. After attending this program, graduates demonstrate an understanding of the scientific philosophy of biology which is related in depth to structure, function, diversity, reproduction, evolution and engineering of biological systems CPL 3.2. After completing this program, the graduates will be able to contribute to development and practice of the field of biology through scientific research based on scientific principles and ethics through interdisciplinary, multidisciplinary, or transdisciplinary approaches in solving problems in the field of biology CPL 4.3. After participating in this program, graduates will be able to Apply the philosophy of biological systems in developing biological concepts in the areas of food, health, bioenergy, biomaterial and/or the environment. |



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| Course Learning Outcome | <p>BIDB243038.1 By the end of this course, students will be able to recognize and critically appreciate the contributions of pioneering researchers in the field of Animal Physiology, with particular emphasis on its applied dimensions.</p> <p>BIDB243038.2 By the end of this course, students will be able to demonstrate professional and ethical responsibility to society regarding the impacts of scientific advancements in the field of Animal Physiology.</p> <p>BIDB243038.3 By the end of this course, students will be able to anticipate problems and devise appropriate solutions to issues related to Animal Physiology.</p> <p>BIDB243038.4 By the end of this course, students will be able to communicate and apply knowledge of Animal Physiology for the enhancement of animal and human well-being.</p> |
| Course Description | <p>This course begins with an exploration of fundamental principles in Animal Physiology and the concept of homeostasis. It then progresses to a more in-depth discussion of physiological phenomena through the application of contemporary methods and approaches. Topics covered include basic physiological mechanisms such as blood chemistry tests, pathophysiology, and the role of the microbiome in animal health and disease. The course also addresses applied areas such as stem cells, neuroscience, laboratory animal science, and hematology.</p> <p>In addition, students will be introduced to advanced techniques in animal physiology research, including genomics and proteomics, CRISPR technology, and molecular imaging techniques. Animal bioethics constitutes an integral component of the course. Through case-based learning and interactive discussions, students are expected to apply knowledge of animal physiology in both research and daily life, while also understanding the scientific and societal impacts of such research.</p> <p>The course is further enriched with experimental protocols and case studies designed to enhance students' comprehension of physiological mechanisms and their applications across diverse conditions and modern research domains. Students are also expected to effectively communicate and apply their knowledge to promote the well-being of both animals and humans.</p> |



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| Assessments | <p>The assessment for Selected Topic for Dissertations (Applied Animal Physiology) is based on three components, with the respective criteria and weights:</p> <ol style="list-style-type: none">1. Participatory Activity (30%)2. Project Result/Study case result/PBL Result (30%)3. Assignment (40%) |
| Study Media and Literature | <p>Main</p> <ol style="list-style-type: none">1. FELASA. 2008. Course in Laboratory Animal Science (FELASA Category-C Course). Federation of European Laboratory Animal Science Associations (FELASA).2. Goodenough, J.E., B. McGuire, and R.A. Wallace. 1993. Perspective on Animal Behavior. John Wiley & Sons, Inc. Toronto.3. OECD. 2000. OECD Guidelines for the Testing of Chemicals. Organisation for Economic Co-operation and Development (OECD). Paris.4. Pinel, J.P.J. 2009. Biopsychology. Seventh Edition. Pearson Education Inc. Boston.5. Price, S.A. dan L.M. Wilson. 2006. Patofisiologi: Konsep Klinis Proses-Proses Penyakit. Edisi 6. Cetakan I. Penerbit Buku Kedokteran EGC. Jakarta. <p>Additional</p> <ol style="list-style-type: none">1. van Tienhoven, A. 1983. Reproductive Physiology of Vertebrates. Second Edition. Comstock Publishing Associates. Cornell University Press. London.2. Wilmore, J.H., D.L. Costill, and W. L. Kenney. 2008. Physiology of Sport and Exercise. Fourth Edition. Human Kinetics Publishers, Champaign. |