

	UNIVERSITAS PADJADJARAN FACULTY OF MATHEMATICS AND NATURAL SCIENCES MASTER OF SCIENCE IN BIOLOGY	COURSE CODE: D20D2102
Module designation	Environmental physiology	
Semester(s) in which the module is taught	2	
Lecturers	Dr. Kartiawati Alipin, M.S. Dr. Desak Made Malini, M.Si. Dr. Mohamad Nurzaman, M.Si. Dr. Tia Setiawati, M.Si.	
Medium of instruction	English and Indonesian	
Relation to curriculum	Compulsory Master of Science in Biology	
Teaching methods	Lecture, Discussion, Cooperative Learning and Problem Based Learning	
Workload	Total workload: 8160 minutes (90,67 hours) CLASS Lecture, Discussion, Cooperative Learning and Problem Based Learning: 2 x 50'x 16 weeks = 1600 minutes (26.67 hours) Exercise : 2 x 60'x 16 weeks = 1920 minutes (32 hours) Private study : 2 x 60'x 16 weeks = 1920 minutes (32 hours)	
Credit points	2.00 SKS (3.62 ECTS)	

Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> 1. After completing this course, the student will be able to explain the understanding of plant physiological adaptations to water stress, salinity, high temperature, soil pH, mineral deficiencies 2. After completing this course, the student will be able to explain the basic concepts of homeostasis 3. Student will be able to describe forms of adaptation to environmental temperature stress, nutrition, limited water preparations and energy transformation in animals
Contents	<p>The course covers the concept of the interaction of plants and animals with their environment, focusing on extreme environmental changes so that these changes are a form of stress for plants and animals that will affect physiologically. Related material will be studied about the physiological response and adaptation of plants to various environmental stresses which include water deficit / drought and waterlogging environments; salinity basins; temperature and humidity, soil pH, heavy metals, and mineral deficiencies. This course also includes discussion of plant symptoms that experience stress, physiological and morphological adaptation characteristics and regulatory mechanisms / signaling pathways. While the material for interactions between animals and the environment will be studied the mechanisms of how animals (especially vertebrates) can adapt, and tolerance in extreme environments both physiologically and behaviorally so that they are able to survive and multiply in their habitat.</p>
Examination forms	Essay and written examination
Study and examination requirements	<p>Minimum attendance at lectures is 80%. Final score is evaluated based on assignment and group case study reports (20%), Assignment (20%), mid semester exam (30%), and end semester exam (30%).</p>
Reading lists	<ol style="list-style-type: none"> 1. Robert E. Wilkinson. 2000. Plant–Environment Interactions. Second Edition. Marcel Dekker, Inc. New York. Basel 2. Matthew A. Jenks. And Paul M. Hasegawa. 2005. Plant Abiotic Stress. Blackwell Publishing. 3. Bradshaw, D. 2003. Vertebrate Ecophysiology. Cambridge University Press. 4. Fregly M.J. and C.M. Blatteis. 1996. Handbook of Physiology: Environmental Physiology. Oxford University Press. 5. Louw, G.N. 1993. Physiological Animal Ecology. Longman & Scientific Technical.

- | | |
|--|--|
| | <ol style="list-style-type: none">6. Schmidt-Nielsen, K. 1997. <i>Animal Physiology: Adaptation and Environment</i>. Fifth Edition. Cambridge University Press.7. Willmer, P., G. Stone, and I. Johnson. 2000. <i>Environmental Physiology of Animals</i>. Blackwell Science. |
|--|--|