



THE MODULE HANDBOOK

Magister Biology Study Program

FACULTY OF BIOLOGY

REGENERATION AND BIOLOGY OF AGING

Course code	BIMB202240
Course level	Magister
Semester/ term	Odd/even
Course coordinator(s)	Zuliyati Rohmah, S.Si., M.Si., Ph.D.
Lecture(s)	<ol style="list-style-type: none">1. Zuliyati Rohmah, M.Si., Ph.D.2. Dr. Ardaning Nuriliani, M.Kes.3. Dr. Rarastoeti Pratiwi., M.Sc.4. Woro Anindito Sri Tunjung, M.Sc., Ph.D.
Language	Indonesian/English
Classification within the Curriculum	Elective
Teaching format/ class hours per week during the semester	This course is planned to have 14 teaching weeks and 2 weeks of examination.
Workload	Estimated working hour: 2 credits of theory and 1 credit of laboratory work.
Credits	2-1 credits
Requirements	-
Program Learning Outcome	<p>KN2. The graduates are demonstrating knowledge and comprehend biological system and bio-engineering methods to solve tropical biodiversity problems (Knowledge);</p> <p>GS1. The graduates are able to develop logical, critical, systematic, and creative thinking through scientific concept and research (General Skills);</p> <p>SS2. The graduates are able to solve problems related to biological resources through inter- and / or multidisciplinary approaches beneficial to society and the scientific community (Specific Skills).</p>
Course Learning Outcome	<p>CPMK1. Student would be able to define regeneration and type of it, and determine the factor that involved in aging and regeneration from molecular level to organism system</p> <p>CPMK2. Student would be able to explain the regeneration evolution and compare each animal kingdom regeneration ability</p>



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	CPMK3. Student should have an insight on degenerative disease and regenerative medicine																														
Course Description	The Regeneration and Biology of Aging course explains regeneration in animals begins from evolutionary to cellular and molecular aspects. This course also describes the biology of aging (senescence) from organisms to molecular level and its application for the development of regenerative medicine and cosmetics.																														
Assessments	<table border="1"><thead><tr><th>Assessment component</th><th>Percentage</th><th>CPM K 1</th><th>CP MK 2</th><th>CP MK 3</th></tr></thead><tbody><tr><td>Practical Project</td><td>25</td><td></td><td></td><td></td></tr><tr><td>Assignment</td><td>15</td><td></td><td></td><td></td></tr><tr><td>Quiz</td><td>10</td><td></td><td></td><td></td></tr><tr><td>Midterm exam</td><td>25</td><td></td><td></td><td></td></tr><tr><td>Final exam</td><td>25</td><td></td><td></td><td></td></tr></tbody></table>	Assessment component	Percentage	CPM K 1	CP MK 2	CP MK 3	Practical Project	25				Assignment	15				Quiz	10				Midterm exam	25				Final exam	25			
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Assignment	15																														
Quiz	10																														
Midterm exam	25																														
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Study Media	Youtube, Power Points, website																														
Literature	<ol style="list-style-type: none">1. John G. Fleagle, "Muscles of Vertebrates: Comparative Anatomy, Evolution, Homologies and Development.," The Quarterly Review of Biology 86, no. 2 (June 2011): 142-142.2. Kardong, K. V. 2002. Vertebrates: Comparatives Anatomy, Function, Evolution 3rd edition. McGraw – Hill Companies, Inc. New York, p: 3583. New Frontiers in Regenerative Medicine 2007 ED by M Kusano4. In Situ Tissue Regeneration : Host Cell Recruitment and Biomaterial Design. ED Sang Jin Lee et al., 2016.5. some up to date related journal																														