

## Ecology and Ecology Project

Module name	Ecology					
Module level	3 <sup>rd</sup> year of Bachelor program					
Abbreviation, if applicable						
Sub-heading, if applicable						
Courses included in the module	BI3101 Ecology BI3102 Ecology Project					
Semester/term	5 <sup>th</sup> Semester					
Module coordinator(s)	Prof. Dr. Tati S. Syamsudin					
Lecturer(s)	Prof. Dr. Tati S. Syamsudin Dr. Devi N. Choesin Dr. Endah Sulistyawati Dr. Dian Rosleine Dr. Endang Hernawan Dr. Yoyo Suhaya					
Language	Indonesian					
Classification within the Curriculum	Compulsory courses for Bachelor Program in Biology					
Teaching format/ class hours per week during the semester	2 parallel classes consisting of 40 students per class.  <i>BI-3101:</i> <ul style="list-style-type: none"> <li>Lectures (face to face lectures, student presentations and discussion): 2 meetings x 2 hours = 4 hours per week</li> </ul> <i>BI-3102 :</i> <ul style="list-style-type: none"> <li>Lectures (face to face lectures)</li> <li>Practical work: laboratory experiments and field exercises</li> </ul> Total: 1 formal meeting, approximately 7 hours per week (work load may differ at different weeks; field trips with heavier loads are conducted in certain weeks).					
Workload	Total Workload	344 hours per semester; 7(3) CU				
		Face to face teaching (incl. field exercise)	Assignment/ homework	Independent study	Exam	Total
	Lecture (BI-3101)	56	60	72	4	192
	Practical class (BI-3102)	90	28	28	6	152
	Total	126	88	100	10	344
Credit points	4 CU lecture + 3 CU practical/project = 7(3) CU					
Requirements	<i>Biosystematics; Basic sciences</i>					
Content	<ul style="list-style-type: none"> <li>Scope and application of ecology.</li> <li>Terrestrial and aquatic ecosystems: climate, soil and water conditions.</li> <li>Relation between individual organisms and the environment (temperature, water, energy, nutrients).</li> <li>Population (concept, distribution, growth, dynamics).</li> <li>Population interactions (competition, predation, herbivory, mutualism etc.).</li> <li>Community (concept, structural description, succession).</li> <li>Ecosystem (concept, structure and function, energy flow, material cycling).</li> <li>Landscape ecology and the global environment.</li> <li>Practical methods in the laboratory and field: observation, sampling, measurement, quantitative analysis and interpretation.</li> <li>Case studies in analysing ecological problems in a conservation area (field work).</li> <li>Design and execution of ecological research (small projects).</li> </ul>					

Learning goals/ competencies	<p>After completion of this module students are expected to be able to:</p> <p>Knowledge :</p> <ul style="list-style-type: none"> <li>demonstrate an understanding of key concepts in ecology at the individual, population, community, ecosystem and global levels.</li> <li>demonstrate an understanding of ecological relationships between organisms and the environment</li> <li>identify and describe different types of ecosystems</li> <li>identify and discuss ecological problems</li> <li>recognize the application of ecological concepts in solving environmental problems</li> </ul> <p>Skill:</p> <ul style="list-style-type: none"> <li>operate standard equipment for ecological analysis in the laboratory and field</li> <li>gather, analyze and interpret descriptive and quantitative data in ecology</li> <li>communicate scientific findings, both written and oral</li> </ul> <p>Competences :</p> <ul style="list-style-type: none"> <li>design and execute a small research project to describe and analyse ecological phenomena (case study).</li> </ul>																											
	<table border="1"> <thead> <tr> <th></th> <th>Midterm exam</th> <th>Final exam</th> <th>Assignments*</th> <th>Quizzes</th> <th>Fieldwork**</th> <th>Project assignm</th> <th>Other** *</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Lecture (BI-3101)</td> <td>30%</td> <td>30%</td> <td>25%</td> <td>10%</td> <td>--</td> <td>--</td> <td>5%</td> <td>100%</td> </tr> <tr> <td>Practical class (BI-3102)</td> <td>20%</td> <td>20%</td> <td>5%</td> <td>7%</td> <td>30%</td> <td>15%</td> <td>3%</td> <td>100%</td> </tr> </tbody> </table> <p>*Assignments include individual and group assignments and presentations  **Fieldwork includes student activity and participation, general assignments, written and oral reports, teamwork etc.  ***Other includes general student proactiveness, attendance etc.</p>			Midterm exam	Final exam	Assignments*	Quizzes	Fieldwork**	Project assignm	Other** *	Total	Lecture (BI-3101)	30%	30%	25%	10%	--	--	5%	100%	Practical class (BI-3102)	20%	20%	5%	7%	30%	15%	3%
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Forms of media	Classical teaching tools:	white board/chalk and talk, LCD projector, multimedia, film clips																										
	Integrated teaching tools:	field trips, laboratory experiments, guest lectures																										
	Digital teaching tools:	-																										
	Problem based teaching tools:	group projects, case studies																										
Literature	<ol style="list-style-type: none"> <li>Molles, M.C.Jr. 2013. Ecology: concepts and applications. 6<sup>th</sup>. Ed. McGraw-Hill, New York.</li> <li>Stiling, P. 2012. Ecology: global insights and investigations. McGraw-Hill, New York.</li> <li>Smith, T.M. &amp; R.L. Smith. 2012. Elements of Ecology. 8<sup>th</sup>. Edition. Benjamin Cummings</li> <li>Krebs, C.J. 2008. Ecology: the experimental analysis of distribution and abundance. 6<sup>th</sup> Edition. Benjamin Cummings, New York.</li> <li>Henderson, P.A. 2003. <i>Practical Methods in Ecology</i>. Blackwell Publishing..</li> <li>Wildi, O. 2010. <i>Data Analysis in Vegetation Ecology</i>. Wiley-Blackwel Publishing.</li> <li>Brower, J.E., Zar, J.H., von Ende, C.N. 1997. <i>Field and Laboratory Methods for General Ecology</i>. McGraw Hill, Inc..</li> </ol>																											

