



# THE MODULE HANDBOOK

## FACULTY OF BIOLOGY

### Ecology

<b>Module code</b>	BIO 30102
<b>Module level</b>	Undergraduate
<b>Abbreviation, if applicable</b>	-
<b>Sub-heading, if applicable</b>	-
<b>Courses included in the module, if applicable</b>	-
<b>Semester/ term</b>	Odd
<b>Module coordinator(s)</b>	Dr. Retno Peni Sancayaningsih, M.Sc.
<b>Lecture(s)</b>	<ol style="list-style-type: none"><li>1. Dr. Retno Peni Sancayaningsih, M.Sc.</li><li>2. Prof. Dr. Tjut Sugandawaty Djohan, M.Sc.</li><li>3. Prof. Dr. Suwarno Hadisusanto, S.U.</li><li>4. Dr. Siti Nurleily Marlina, M.Sc.</li><li>5. Dr.rer.nat. Andhika Puspito Nugroho, M.Si.</li></ol>
<b>Language</b>	Indonesia
<b>Classification within the Curriculum</b>	<ol style="list-style-type: none"><li>1. Compulsory</li><li>2. Ecology course has been designed to give students basic knowledge of Ecology therefore this contains principles and basic concepts of individual characters, population, community and ecosystem characters. Students who are interested to take ecology as their final undergraduate thesis may take some elective courses that required this course, such as: advance courses of ecology, limnology, wetland ecology, marine ecology, biology conservation, pollution and toxicology.</li></ol>
<b>Teaching format/ class hours per week during the semester</b>	This course is organized into 4 or 5 parallel classes and planned to have 13 to 14 teaching weeks and 2- 3 weeks of examination. Ecology is thought in every Tuesday (07.15 – 8.55) and Thursday (10.00 – 10.50) in 5 teaching rooms.
<b>Workload</b>	Estimated working hour: 3 credit of theory and 1 credit of laboratory work.
<b>Credit points</b>	3-1credits
<b>Requirements</b>	General Biology (BIO 10001)
<b>Learning goals/ competencies</b>	<ol style="list-style-type: none"><li>1. <b>Knowledge and understanding</b><ol style="list-style-type: none"><li>a. Structure and ecosystem diversity,</li></ol></li></ol>



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	<p>b. Nutrient cycles and energy flow in ecosystem, c. Character, structure, population dynamic, and population regulation; d. Ecological concepts relate to environment and human activity that may change habitat and ecosystem and environment</p> <p><b>2. Ability/intellectual skill</b></p> <p>a. Correlate trophical structure with energy flow in an ecosystem. b. Compare between one ecosystem to other ecosystem. c. Analyze processes, dynamic, and population development. d. Analyze habitat/ecosystem changes related to human activity in environment. e. Explain environmental problems related to ecological concepts.</p> <p><b>3. Practical skill</b></p> <p>a. Observe ecosystem structure. b. Estimate population density. c. Observe habitat/ecosystem changes relate human activity.</p> <p><b>4. Managerial and transferable skill</b></p> <p>a. Writing an ecological study report. b. Manage ecological data and perform data analysis. c. Team work in an ecological study.</p> <p><b>5. Attitude</b></p> <p>a. Curiosity and sensitive to environmental problems. b. Anticipative action in their own community toward any potential problems that may raise related to environment. b. Supporting any efforts to natural bioresource conservation.</p>
<b>Content</b>	<p>This course contains several topics, includings: relation between organism and their environments; distribution and abundance of organisms and some affected factors; relation between evolution and ecology; ecosystem and its metabolism; principles, structure and population dynamic, regulation and interaction between populations; community and its structure, ecological succession and biomes; ecological applications, conservations, biodiversity and global ecological issues.</p>
<b>Study/ exam achievements</b>	<p>1. Theory 2. Final examination 3. Presentation and attendance 4. Laboratory work</p>



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<b>Forms of media</b>	White board, LCD, e-learning, video and animation.
<b>Literature</b>	<ol style="list-style-type: none"><li>1. Barbour, M. G., J. H. Burk, and W. D. Pitts. 1987. Terrestrial plant ecology. 2<sup>nd</sup>. Edit. The Benjamin/Cumming Publ. Co, Inc. California.</li><li>2. Brewer, R, 1994. The science of ecology. 2<sup>nd</sup> edit. Saunders College Publishing. Philadelphia</li><li>3. Cox, G.W. 1974. Laboratory manual of general ecology. M.W.C Brown Co. Publ. Iowa.</li><li>4. Krebs, C.J. 2009. Ecology, the experimental analysis of distribution and abundance. 3<sup>rd</sup>. edit. Harper Collins Publ. Inc. New York.</li><li>5. Mackenzie, A., A.S. Ball, and S.R. Verdee. 1998. Instant note in ecology. Bios Sci. Publ. Springer, Singapore.</li><li>6. Odum, E.P. 1971. Fundamentals of ecology. 3<sup>rd</sup>. edit. W.B. Saunders Co. Philadelphia.</li></ol>