



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

Environmental Science

Module code	BIB 20301IUP
Module level	2 nd year of Undergraduate Program in Biology
Abbreviation, if applicable	-
Sub-heading, if applicable	-
Courses included in the module, if applicable	-
Semester/term	odd
Module coordinator(s)	Prof. Dr. Tjut Sugandawaty Djohan, M.Sc
Lecture(s)	1. Dr.rer.nat. Andhika Puspito Nugroho, M.Si, 2. Siti Nurleily Marliana, S.Si.,M.Sc., Ph.D.
Language	English
Classification within the Curriculum	Compulsory
Teaching format/class hours per week during the semester	<p>This course is thought in semester 1, has been planned to have 13 or 14 week-meetings per semester and 2 – 3 weeks of examination. Teaching schedule is every Monday 07.15 – 8.55, of three paralel classes in 3 teaching rooms as follows:</p> <ol style="list-style-type: none">1. Class A, General Biology room, west wing, floor 2,for 50-60 students.2. Class B, General Biology room, east wing, floor 2, for 50-60students.3. Class C, seminar room, for 100-120 students. <p>Combine with teacher centered method, Student Centered Learning (SCL) method using Problem Based Learning (PBL) approach is applied during some week teachings, especially when teaching topics need elaboration of students knowledge. Teacher fascilitate discussions about environmental problems in the class, how to solve this problem using basic ecological concept and ecosystem approach.</p>
Workload	Estimated working hour: 7 hours/week.
Credit points	2-0 credits
Requirements	-
Learning goals/ competencies	1. Knowledge and understanding a. Environmental aspects (physical, social, including



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	<p>culture and economics) that should be accounted in environmental analysis.</p> <ol style="list-style-type: none">b. Effect of population growth globally and locally to the natural resource availability and environment stress.c. Environmental degradation of physical, social, and cultural as well as economical aspectsd. Principle concept of natural resource conservation. <p>2. Ability/intellectual skill</p> <ol style="list-style-type: none">a. Ability to separate all knowledges of disciplines that relate to physical, social, including culture and economics.b. Critical thinking toward environmental issues (past, present and potential problems) <p>3. Practical skill</p> <ol style="list-style-type: none">a. Ability to think and act in a systemb. Create presentation topic on environmental topics and able to present. <p>4. Managerial and transferable skill</p> <ol style="list-style-type: none">a. Working in a group.b. Data management and analysis and how to present.c. Contribute ideas in a group assignment. <p>5. Attitude</p> <ol style="list-style-type: none">a. High curiosity.b. Respecting the intellectual ownership rights in the form of ideas, concepts, and inventions of othersc. Easy to adapt to the new environment and appreciate the differences in the views and opinions of others
Content	<p>Environmental Science (BIO 10301) is a compulsory course of 2 credit units (credit unit per semester), has been thought every odd semester (mostly signed out by students in the first semester) since this course is not prerequested any courses. This course is toughed by staff members of the Laboratory Ecology and Conservation. The topics are:</p> <ol style="list-style-type: none">1. Introduction2. Ecosystem concept3. Energy and material concept in nature4. Population concept related to environment degradation5. World population development and balance between development and evolution6. Condition and resources7. Balance between consumption and production on a system



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	<ol style="list-style-type: none">8. Environment changes9. Environmental pollution (1)10. Environmental pollution (2)11. Environmental ethics12. Student presentation13. Student presentation14. Student presentation
Study/ exam achievements	<ol style="list-style-type: none">1. Midterm: 40%2. Final examination: 40%3. Individual task: 10%4. Group assignment: 10%
Forms of media	White board, LCD, notebook, video and animation.
Literature	<ol style="list-style-type: none">1. Anonymous. 2009. Overconsumption? Our use of the world's natural resources. SERI-GLOBAL 2000-Friends of the Earth Europe.2. Botkin, DB. And Keller, EA. 2011. Environmental Science – Earth as a Living Planet. 8th Edition. John Wiley & Sons, Inc.3. Elcome, D. 1998. Natural Resources, Their Use and Abuse. Stanley Thornes Ltd. Cheltenham.4. http://www.unep.org/geo/geo4/report/05_Biodiversity.pdf5. Barucha, E. 2004. Textbook for Environmental Studies. University Grants Commission. New Delhi.6. Center for Global Sustainability Studies. 2011. Education for Sustainable Development: Issues, Principles and Practices for Global Application. Sanusi, Z.A.; R. Steele; H.K. Doost; G. Jegatesen; and H. Rosli (Eds). ProSPER.Net. 344 pp.7. Cunningham, M. and Cunningham, W. 2008, Principles of Environmental Science: Inquiry and Applications. 4th Edition. McGraw Hill-Science.8. Miller, GT. 2004. Living in the Environment. 13th Edition. Brock/Cole Publishing Co.9. Wright. R.T. 2008. Environmental science: Toward a sustainable future. 10th edition. Pearson Prentice Hall. USA.