



## UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

DEPARTMENT OF MATHEMATICS EDUCATION

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### Bachelor of Education in Biology

### MODULE HANDBOOK

Module name:	Environmental Science
Module level, if applicable:	Undergraduate
Code:	BIO6216
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	Even
Module coordinator:	Dr. Tien Aminatun
Lecturer(s):	Prof. Dr. IGP Suryadarma, Dr. Ir. Suhartini, Dr. Tien Aminatun
Language:	Bahasa Indonesia
Classification within the curriculum:	Obligatory Course
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 minutes structured activities, and 120 minutes individual studyper week
Work load:	Total workload is 91 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per weekfor 16 weeks.
Credit points:	2 SKS (3 ECTS)
Prerequisites course(s):	Ecology
Program Learning Outcomes:	PLO 4: Mastering basic Biology and other relevant knowledge with mathematics and natural sciences
Course Outcomes	After taking this course, the students have ability to: CO1. Identify the concept of environmental science CO2.Understand the concept of ecology as the basis of environmental science CO3. Elaborate the recent development of environmental issues CO4. Analyze the position of human and environemnt CO5. Apply environmental principles on a daily basis

	<p>CO6. Elaborate environmental problems and solutions</p> <p>CO7. Explain the natural resources, problems related to natural conservation</p> <p>CO8. Explain the concept, source and effect of pollution</p> <p>CO9. Apply the concept of environmental ethics and its implication</p> <p>CO10. Elaborate the concept of sustainable development and its implication</p> <p>CO11. Describe the definition, stages and roles of environmental impact analyses</p> <p>CO12. Communicate the result of individual or communal study</p>															
Content:	<p>This course discusses the awareness of environmental problems, interaction between biophysical environment and its function in sustainable development, wasteless technology, new paradigm on environment management and short term solution for environmental problems.</p>															
Study/exam achievements:	<p>The final mark will be weight as follow:</p> <table border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO1 to CO12</td> <td>Observed attitudes, knowledge, and skills</td> <td>Survey, test, rubrics and manuals</td> <td>100%</td> </tr> <tr> <td colspan="4" style="text-align: right;">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1 to CO12	Observed attitudes, knowledge, and skills	Survey, test, rubrics and manuals	100%	Total				100%
No	CO	Assessment Object	Assessment Technique	Weight												
1	CO1 to CO12	Observed attitudes, knowledge, and skills	Survey, test, rubrics and manuals	100%												
Total				100%												
Forms of media:	<p>Real objects, model, multimedia</p>															
Reference:	<p>A. Miller, G.T. 2016. <i>Environmental Science</i>. 15<sup>th</sup> Edition. Cengage Learning, Inc.</p> <p>B. Miller, Jr.G.T.and Spoolman, S.E.2008. <i>Living in the Environment: Concepts, Connections, and Solutions</i>, 16<sup>th</sup> Edition. Cengage Learning, Inc.</p> <p>C. Wuryadi. 1984. <i>Lingkungan Sebagai Suatu Sistem Ekologi</i>. Yogyakarta: FMIPA-IKIP</p> <p>D. Watt, K. E. F. 1973. <i>Principles of Environmental Science</i>. New York: Mcraw-Hill Book Company.</p> <p>E. Soemarwoto, O. 1994. <i>Ekologi, Lingkungan Hidup dan Pembangunan</i>. Jakarta: Penerbit Djambatan.</p> <p>F. Soemarwoto, O. 2004. <i>Atur Diri sendiri, Paradigma Baru Pengelolaan Lingkungan Hidup</i>. Yogyakarta: Gadjah Mada University Press.</p> <p>G. Fandeli, C. 2012. <i>Analisis Mengenai Dampak Lingkungan, Prinsip Dasar dalam Pembangunan</i>. Yogyakarta: Gadjah Mada Press.</p>															

