



UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND SCIENCE
DEPARTMENT OF BIOLOGY EDUCATION

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Bachelor of Science in Biology

MODULE HANDBOOK

Module name:	Laboratory Work in Ecology of Microorganism
Module level, if applicable:	Undergraduate
Code:	BIM6167
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	Odd
Module coordinator:	Dr. Bernadetta Octavia
Lecturer(s):	Dr. Bernadetta Octavia, M.Si. & Anna Rakhmawati,M.Si
Language:	Bahasa Indonesia
Classification within the curriculum:	Elective Course
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per 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:	1 SKS (2 ECTS)
Prerequisites course(s):	Microbiology
Program Learning Outcomes:	4. Comprehensively mastering Biology (core biology) to solve problems in the field of Biology (problem-solving) and to underlie the concepts of related sciences 5. Mastering the techniques and methodologies in Biology as well as familiar with the equipment used in Biology laboratories in order to get the knowledge of Biology (how we know what we know)

	7. Being skillful in applying the techniques used in laboratories and daily life															
Course Outcomes	<p>After taking this course, the students have ability to:</p> <p>CO1. Menguasai alat bantu dan bahan yang diperlukan dalam praktikum Ekologi Mikroba baik secara mandiri maupun berkelompok.</p> <p>CO2. Menerapkan teknik aseptik untuk mempelajari mikroorganismenya baik secara mandiri maupun berkelompok</p> <p>CO3. Membuat media pertumbuhan mikroorganismenya baik secara mandiri maupun berkelompok</p> <p>CO4. Melakukan isolasi mikroorganismenya dari berbagai lingkungan dan identifikasi lingkungannya</p> <p>CO5. Menyelidiki Interaksi mikroorganismenya dan organisme lain</p> <p>CO6. Melakukan penelitian lapangan tentang ekologi mikroba dengan panduan jurnal yang dipahami</p>															
Content:	Matakuliah ini melatih keterampilan menerapkan teknik dasar untuk aplikasi dalam bidang ekologi mikroba dan merancang desain percobaan yang berkaitan dengan peran mikroorganismenya dalam lingkungan biotik dan abiotik.															
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 CO6</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 CO6	Observed attitudes, knowledge, and skills	Survey, test, rubrics and manuals	100%	Total				100%
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1	CO1 to CO6	Observed attitudes, knowledge, and skills	Survey, test, rubrics and manuals	100%												
Total				100%												
Forms of media:	Real objects, multimedia															
Reference:	<p>A. Atlas, R.M., Brown,A.E., Debra,K.W., and Miller,L. 1984. <i>Experimental Microbiology:Fundamental and Application</i>. MacMillan Publishing Company.New York</p> <p>B. Benson,H.J. 1998. <i>Microbiological Applications: Laboratory Manual in General Microbiology</i>, 7th edition,WCB McGraw-Hill,Boston USA</p> <p>C. Cappucino, J.E and Sherman, N.1987. <i>Microbiology, A : Laboratory Manual</i>. The Benjamin Cummings Publishing Company,Inc, California,USA</p> <p>D. Claus, G.W. 1989. <i>Understanding Microbes, A : Laboratory Textbook for Microbioloy</i>,W.H. Freeman and Company,USA</p> <p>E. Collins,C.H, Lyne,P.M., and Grange,J.M.1979. <i>Microbiological Methods</i>,6th edition,Butterworths,London</p> <p>F. Febrianti,N.,Prijambada,I.D., Sembiring, L, dan Widiyanto, D. 2003. <i>Karakterisasi dan Identifikasi Isolat Bakteri Pendegradasi Fraksi Asfaltik Hidrokarbon Lumpur Minyak Bumi</i>, Biologi, 3 (2)</p> <p>G. Hudson,B.K. and Sherwood, L. 1997. <i>Explorations in Microbiology, a discovery-Based Approach</i>, Prentice Hall, Upper Saddle River, New Jersey, USA</p>															

PLO and CO mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
CO 1				V	V		V				
CO 2				V	V		V				
CO 3				V	V		V				
CO 4				V	V		V				
CO 5				V	V		V				
CO 6				V	V		V				