



UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND SCIENCE
DEPARTMENT OF BIOLOGY EDUCATION

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Bachelor of Science in Biology	MODULE HANDBOOK
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Module name:	Laboratory Work in Bivariate Biology Research Methodology
Module level, if applicable:	Undergraduate
Code:	BIM 6131
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	5 th
Module coordinator:	Suhandoyo, MS.
Lecturer(s):	Suhandoyo, MS.
Language:	Indonesian
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	170 activities per week.
Workload:	170 individual activities per week for 16 weeks.
Credit points:	1 sks
Prerequisites course(s):	biometry
Program Learning Outcome(s)	<p>PLO.4. Comprehensively mastering Biology (core biology) to solve problems in the field of Biology (problem-solving) and to underlie the concepts of related sciences</p> <p>PLO.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)</p> <p>PLO.6. Being adaptive, creative, innovative in applying the concepts of Biology and other related fields</p> <p>PLO.7. Being skillful in applying the techniques used in laboratories and daily life</p> <p>PLO.9. Mastering research methodology in biology and its applications.</p> <p>PLO.10. Having managerial ability to supervise and evaluate workers and optimizing the networks in order to develop Professionalism.</p> <p>PLO.11. Possessing scientific skills to support the ability to speak in local, national, and international forums</p>
Targeted learning outcomes:	<p>CO.1. Design observational studies either census or sampling in the field of biology.</p> <p>CO.2. Designing experimental research in the field of biology.</p> <p>CO.3. Prepare written reports and presentations.</p>

Content:	The application of research principles and procedures in the field of Biology, both based on the characteristics of populations that are normally distributed and unknown distribution in the form of descriptive and experimental research designs and their reporting.																		
Study / exam achievements:	<p>Attitude assessment is carried out at each meeting by observation and/or self-assessment techniques using the assumption that basically every student has a good attitude. The student is marked very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not taken into account in the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.</p> <table border="1"> <thead> <tr> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>CO1,</td> <td>Sub-competence test 1</td> <td rowspan="3">Written test</td> <td>30%</td> </tr> <tr> <td>CO2,</td> <td>Sub-competence test 2</td> <td>50%</td> </tr> <tr> <td>CO3</td> <td>Sub-competence test 3</td> <td>20%</td> </tr> <tr> <td colspan="3">Total</td> <td>100%</td> </tr> </tbody> </table>	CO	Assessment Object	Assessment Technique	Weight	CO1,	Sub-competence test 1	Written test	30%	CO2,	Sub-competence test 2	50%	CO3	Sub-competence test 3	20%	Total			100%
CO	Assessment Object	Assessment Technique	Weight																
CO1,	Sub-competence test 1	Written test	30%																
CO2,	Sub-competence test 2		50%																
CO3	Sub-competence test 3		20%																
Total			100%																
Forms of media:	Board, LCD Projector, Laptop/Computer, green house																		
References:	<ol style="list-style-type: none"> Kirk, R.E. 1995. <i>Experimental design: Procedures for behavioral science</i>. Pacific Grove: Brooks/Colc l'ublishing Conrpanv Moh Nazir. (1988). <i>Metode penelitian</i>. Jakarta: Galia Indonesia Sudjana. (1982). <i>Disain dan analisis eksperimen</i>. Bandung: Tarsito. Vincent Gaspersz. (1991). <i>Teknik analisis dalam penelitian percobaan</i>. Jilid 1. Bandung: Tarsito Gomez, K.A. and Gomez, A.A. (1984). <i>Statistical procedures for agricultural research</i>. 2-nd ed. New York: John Wiley & Sons. Janke, S.J. & Tinsley. (2007). <i>Introduction to linear models and statistical inference</i>. New York: A John Wiley & ons, Inc., Publication. John, P.W.H. (1971). <i>Statistical design and analysis of experiments</i>. New York: Macmillan. Siegel, S. (1956). <i>Nonparameteric statistics for the beavioral sciences</i>. Tokyo: Mc-Graw-Hill Kogakusha, Ltd. Steel, R.G.D. and Torrie, J.H. (1980). <i>Principles and procedures of statistics: A biometrical approach</i>. 2-nd ed. New York: Mc-Graw-Hill Book Company. 																		

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			V		V
CO 2				V	V	V	V		V	V	V
CO 3				V	V	V	V		V	V	V