Module designation	Laboratory Work in Multivariate Biological Research Methodology
Semester(s) in which the module is taught	Odd/5th
Person responsible for the module	Ir. Suhandoyo MS., Annisa Latifa S.Si., M.Sc.
Language	Bahasa Indonesia
Relation to curriculum	Compulsory
Teaching methods	Lab work, project, seminar, exam
Workload (incl. contact hours, self-study hours)	Total workload is 46 hours per semester which consists of 170 minutes of lab work per week for 16 weeks.
Credit points	1 SKS (1.6 ECTS)
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	PLO 4 PLO 5 PLO 9
Content	The Multivariate Methodology course includes reviewing the principles and procedures for the design of research's implementation and reporting involving more than two variables (more than one independent variable with one dependent variable, one independent variable with more than one dependent variable, and more than one independent variable with more than one dependent variable). The multivariate research study deals with investigating the patterns of stimulus-response relationships and intending to investigate differences in response due to the influence of independent variables in the design of observations, exposures, experiments, and nested.
Examination forms	Presence, task, quiz, case study, team based project.

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<td>Study and examination requirements</td>
<td>The final mark will be weight as follow:
<table>
<tr><th>NO</th><th>Assessment Techniques</th><th>Percentage Weight Assessment (%)</th><th>Information</th></tr>
<tr><td rowspan="4">1</td><td>Cognitive</td><td>50</td><td>Maximum assessment weight accumulation 50%</td></tr>
<tr><td>Presence</td><td>5</td><td></td></tr>
<tr><td>Task</td><td>30</td><td></td></tr>
<tr><td>Quiz</td><td>15</td><td></td></tr>
<tr><td rowspan="3">2</td><td>Participatory</td><td>50</td><td>Maximum assessment weight accumulation 50%</td></tr>
<tr><td>Case Study</td><td>25</td><td></td></tr>
<tr><td>Team Based Project</td><td>25</td><td></td></tr>
<tr><td></td><td>Total</td><td>100</td><td></td></tr>
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<td>Reading list</td>
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A. Hacking, R.R. (2003). Methods and applications of linear models: Regression and analysis of variance. New Jersey: John Wiley & Sons inc.
B. Hogg, R.V. & Tanis, E.A. (2001). Probability and statistical inference. New Jersey: Prentice-Hall, Inc.
C. Subali, B. (2018). Metodologi Penelitian Biologi dan Biologi Terapan. UNY Press.
D. Bambang Subali. (2011). Biometri. Jakarta: Universitas Terbuka.
E. Bambang Subali (2016). Metode Penelitian Bidang Biologi dan Biologi Terapan. Yogyakarta: UNY Press.
F. Barnes, F.S., Gandhi, O.P., Hietanen, M. et all. (ed). (2008). Identification research needs relating to potential biological or adverse health effects or wireless communication devices. United States of America: The National Academy Sciences.
G. Hacking, R.R. (2003). Methods and applications of linear models: Regression and analysis of variance. New Jersey: John Wiley & Sons inc.
H. Hogg, R.V. & Tanis, E.A. (2001). Probability and statistical inference. New Jersey: Prentice-Hall, Inc.
I. Janke, S.J. & Tinsley. (2007). Introduction to linear models and statistical inference. New York: A John Wiley & ons, Inc., Publication.
J. Moed, H.F. & Glanzel, W. (2004). Handbook of Quantitative Science and Technology Research. New York: Kluwe Academic Publishers.

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