



UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF SCIENCE EDUCATION

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Bachelor of Education in Science

MODULE HANDBOOK

Module name:	Statistics
Module level, if applicable:	Undergraduate
Code:	MKU6210
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	4 th
Module coordinator:	Dr. Dadan Rosana, M.Si
Lecturer(s):	Dr. Dadan Rosana, M.Si and Didik Setyawarno, M.Pd.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	100 minutes lectures and 120 minutes structured activities per week.
Workload:	Total workload is 90,67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3 ETCS)
Prerequisites course(s):	-
Targeted learning outcomes:	<p>After careful study of this chapter you should be able to do the following:</p> <p>CO1. Identify the role that statistics can play in the science education problem-solving process</p> <p>CO2. Discuss how variability affects the data collected and used for making educational research decisions</p> <p>CO3. Explain the difference between enumerative and analytical studies</p> <p>CO4. Discuss the different methods that scientist use to collect data</p> <p>CO5. Identify the advantages that designed experiments have in comparison to other methods of collecting science</p>

	<p>education data</p> <p>CO6. Explain the differences between mechanistic models and empirical models</p> <p>CO7. Discuss how probability and probability models are used in science education</p>															
Content:	<p>This course serves two purposes. The first purpose of this course is to provide you with a background in statistical principles in order for you to be a good user of statistical analysis. We will learn how to describe data effectively, how to run a simple regression, statistical inference, hypothesis testing, and how to interpret the results. The second purpose of this course is to provide you with the basic knowledge in probability theories, such as expected values or probability distributions, which are necessary in understanding other courses in science education research.</p>															
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 given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of 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> <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, CO2, CO3, CO4, CO5, CO6 and CO7</td> <td>a. Individual Assignment b. Group Assignment c. Quiz d. Mid e. Final Exam</td> <td>Presentation / written test</td> <td>15% 15% 20% 20% 30%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1, CO2, CO3, CO4, CO5, CO6 and CO7	a. Individual Assignment b. Group Assignment c. Quiz d. Mid e. Final Exam	Presentation / written test	15% 15% 20% 20% 30%	Total				100%
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Total				100%												
Forms of media:	Board, LCD Projector, Laptop/Computer															
Literature:	<p>Dixon, W.J. and Massey Jr., F.J. (1983) Introduction to Statistical Analysis. 4th Edition, McGraw-Hill, New York</p> <p>Ronald E Walpole (2017) Pengantar Statistika Edisi ke 3. Penerbit PT Gramedia Pustaka Utama</p> <p>Anas Sudijono. (2010). Pengantar Statistik Pendidikan. Jakarta: Rajawali Press.</p> <p>Husaini Usman, Akbar, R.P.S. (2012). (Pengantar Statistika (Edisi 2). Jakarta: Bumi Aksara</p>															

PLO and CO mapping

	PLO											
	Attitude			Knowledge				Specific Skill				
	PLO1	PLO2	PLO3	PLO1	PLO2	PLO3	PLO4	PLO1	PLO2	PLO3	PLO4	PLO5
CO1				✓	✓							
CO2					✓	✓						
CO3					✓	✓						
CO4					✓	✓						
CO5					✓	✓	✓					
CO6				✓			✓					
CO7					✓	✓						