



**UNIVERSITAS NEGERI YOGYAKARTA**  
POSTGRADUATE PROGRAM DEPARTMENT OF  
ELECTRONICS AND INFORMATICS ENGINEERING  
EDUCATION

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**Master of Education in Electronics and Informatics  
Engineering**

**MODULE HANDBOOK**

Module name:	Statistics
Module level, if applicable:	Postgraduate
Code:	PPS 8202
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	2 <sup>nd</sup>
Module coordinator:	Dr. Ir. Drs. Masduki Zakarijah, M.T.
Lecturer(s):	Dr. Ir. Drs. Masduki Zakarijah, M.T.
Language:	Bahasa Indonesia
Classification within the curriculum:	Expertise Foundation Courses
Teaching format / class Hours per week during the semester:	100 minutes lectures and 120 minutes structured activities per week.
Workload:	Total workload is 90,6 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self study per week for 16 weeks.
Creditpoints:	2
Prerequisites course(s):	-
Course outcomes:	After taking this course the students have ability to: CO1. Behave properly and cultured as a result of the internalization and actualization of values and norms reflected in spiritual and social life through the learning process. Have behavior and values that characterize the identity of the Indonesian nation and state. Having internalized attitudes and values during the learning process, whether structured or not in learning statistics. CO2. The ability to perform work using concepts, theories, methods, materials, and / or instruments obtained through

	<p>statistics learning. Experienced student work, research and / or community service related to statistics learning. Realizing the transformation of the potential that exists in every student into competencies or abilities that are applicable and useful in learning statistics to develop science and technology through inter / multi-disciplinary research, innovation, tested.</p> <p>CO3. Mastering the concepts, theories, methods, and / or philosophy of the field of Statistics systematically obtained through reasoning in the learning process, student work experience, research and / or community service related to learning educational statistics. Transforming information that has been processed and organized to gain understanding, knowledge, and accumulated experience to have an ability in statistics.</p> <p>CO4. Performing duties and responsibilities as a consequence of a student who already has the ability and supporting knowledge through the concepts, theories, methods, and / or philosophies of certain fields of knowledge systematically obtained through reasoning in the learning process to play a role in society correctly and ethically according to the substance in statistics learning.</p>
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Content:	<p>This course aims to make students have knowledge and understanding of the basic concepts of statistics which are widely used in data analysis practices and the use of statistical-based software for research and application in education and technology. This subject includes: statistics in research, sampling design, data presentation, probability, random variables, population estimation, hypothesis testing, analysis of variance, multiple regression analysis, inverse high order matrix, path analysis.</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" data-bbox="613 884 1406 1230"> <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>CO 1- CO 4</td> <td>a. Presence b. Individual assignment c. Mid Exam d. Final Exam</td> <td>Written test</td> <td>10% 30% 20% 40%</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	CO 1- CO 4	a. Presence b. Individual assignment c. Mid Exam d. Final Exam	Written test	10% 30% 20% 40%	Total				100%
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1	CO 1- CO 4	a. Presence b. Individual assignment c. Mid Exam d. Final Exam	Written test	10% 30% 20% 40%												
Total				100%												
Forms of media:	Board, LCD Projector, Laptop/Computer															
Literature:	<ol style="list-style-type: none"> <li>1. Thomas J. Quirk; 2016; Excel 2016 for Educational and Psychological Statistics; Switzerland: Springer International Publishing.</li> <li>2. Elazar J. Pedhazur; 2006; Multiple regression in behavioral research, explanation and prediction 3<sup>rd</sup> Ed.; Singapore: Thomson Learning, Inc..</li> <li>3. Nancy L. Leech, Karen C. Barrett, George A.Morgan; 2005; SPSS for Intermediate Statistics; Use and Interpretation; New Jersey: Lawrence Erlbaum Associates,Publishers</li> <li>4. Hoang Pham (Ed); 2006; Springer Handbook of Engineering Statistics; London: Springer-Verlag London Limited</li> <li>5. Winkler, Othmar W.. (2009). A Foundation of Descriptive Statistics. Washington: Springer-Verlag Berlin Heidelberg.</li> <li>6. Gall, Meredith D. Gall, Joyce P. &amp; Borg, Walter R. (2003). Educational research, an introduction, 7ed. Boston: Pearson Education Inc</li> <li>7. DeCoursey W.J. (2003). Statistics and Probability for</li> </ol>															

	<p>Engineering Applications With Microsoft® Excel. Boston: Newnes</p> <p>8. Rostock, D.R., Wageningen, R.V., &amp; Klagenfurt, J.P. 2020. Applied Statistics: Theory and Problem Solutions with R. John Wiley &amp; Sons</p> <p>9. Wang, J. &amp; Wang, X. 2020. Structural equation modeling : applications using Mplus. Wiley.</p> <p>10. Radermacher, W.J. 2020. Official Statistics 4.0: Verified Facts For People In The 21st Century. Springer.</p> <p>11. Balakrishnan, N., Koutras, M.V., &amp; Politis, K.G. 2020. Introduction To Probability: Models And Applications. Wiley-Blackwell</p> <p>12. Bowers, D. 2020. Medical Statistics From Scratch: An Introduction For Health Professionals. Blackwell/John Wiley and Sons.</p> <p>13. Gupta, B.C., Guttman, I., &amp; Jayalath, K.P. 2020. Statistics and Probability with Applications for Engineers and Scientists Using MINITAB, R and JMP. Wiley.</p> <p>14. George, D. &amp; Mallery, P. 2020. IBM SPSS Statistics 26 Step By Step: A Simple Guide And Reference. Routledge/Taylor &amp; Francis Group.</p>
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**PLO and CO mapping**

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1	✓									
CO2		✓	✓							
CO3		✓	✓							
CO4				✓						