Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	*Educational Research Data Analysis Techniques*
Semester(s) in which the module is taught	6th
Person responsible for the module	*Yunilia Nur Pratiwi, M.Pd* *Metridewi Primastuti, M.Pd*
Language	*Bahasa Indonesia*
Relation to curriculum	*Compulsory / ~~elective / specialisation~~*
Teaching methods	*Lecture, discussion, project*
Workload (incl. contact hours, self-study hours)	Total workload of the activity is 91 hours per semester for 16 weeks which consist of*:* *100 minutes/week for class learning* *120 minutes/week for structured activities* *120 minutes/week for individual study*
Credit points	*2 SKS (3.2 ECTS)*
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	*On successful completion of the course students should be able to:* 1. determine appropriate data analysis techniques for chemistry education research according to the characteristics of the research procedures used, both descriptively and inferentially, as well as qualitatively. 2. determine appropriate data analysis techniques for chemistry education research according to the characteristics of the research procedures used, both descriptively and inferentially, as well as qualitatively. Students are skilled at analyzing data from chemistry education research using quantitative and qualitative methods using software to systematically draw conclusions and provide solutions to research findings. Students are skilled at analyzing data from chemistry education research using qualitative and quantitative methods using software to systematically draw conclusions and provide solutions to research findings. Students are able to collaborate and demonstrate their performance in compiling and reflecting on individual projects related to chemistry education research. Students are skilled at analyzing data from chemistry education research using qualitative and quantitative methods using software. Students are able to communicate ideas, processes, and interpretations of data analysis for chemistry education research both orally and in writing. 3. demonstrate a responsible attitude in completing an individual project on data analysis techniques for a Final Thesis. Students are able to collaborate in demonstrating their performance in compiling and reflecting on individual projects related to chemistry education research;
Content	● Type of research, research variables, type of data ● General guidelines: (a) Descriptive and Inferential Statistics; (b) Parametric and Non-Parametric Statistics; (c) Determining data analysis techniques ● Prerequisite Hypothesis Testing for Parametric Statistics ● Parametric Statistics 1: One-sample t-test, independent sample t-test, paired samples t-test ● Parametric Statistics II: One-way ANOVA ● Parametric Statistics III: ANCOVA ● Nonparametric Statistics I: a. Signed-Level Test b. Two Independent Samples Test (Mann-Whitney Test) ● Nonparametric Statistics II: a. Two Related Samples Test (Wilcoxon Test) b. K-Independent Samples Test (Kruskal-Wallis Test) ● Correlation Analysis ● Regression Analysis ● Descriptive Statistics
Examination forms	*Project report and presentation, written tests*

<table>
<tr><td>Study and examination requirements</td><td>Minimum attendance at lectures is 75%
Final score (NA) is calculated as follows:
<table>
<tr><th>Learning Outcome</th><th>Weight (%)</th><th>Technique of Assesment</th></tr>
<tr><td>1</td><td>5</td><td>Participation</td></tr>
<tr><td>1</td><td>5</td><td>Observation</td></tr>
<tr><td>2</td><td>10</td><td>Mid-term Written Test</td></tr>
<tr><td>3</td><td>30</td><td>Presentation and Observation</td></tr>
<tr><td>4</td><td>50</td><td>Project (report and presentation)</td></tr>
</table></td></tr>
<tr><td>Reading list</td><td>1. Walpole, R. E. (2012). Probability & statistics for engineers & scientists. Pearson
2. Kirk, R. E. (1995). Experimental design: Procedures for the behavioral science. Brooks Publishing
3. Larson, R., & Farber, B. (2012). Elementary statistics: Picturing the world. Pearson
4. Paulson, D. S. (2003. Applied Statistical Designs for The Reseracher. New York: Marcel Dekker, Inc
5. Kanji, G. K. (2006). 100 Statistical Test 3rd Edition. Great Britanian: The Cromwell Press Ltd.</td></tr>
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Prepared by	Verified by:	Authorized by:
		
Yunilia Nur Pratiwi, M.Pd		Program Study Coordinator