UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF CHEMISTRY EDUCATION
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Bachelor of Education in Chemistry **MODULE HANDBOOK**

Module name:	Statistics
Module level, if applicable:	Undergraduate
Code:	MKU 6210
Sub-heading, if applicable:	-
Classes, if applicable:	2
Semester:	2nd
Module coordinator:	Sukisman Purtadi, M.Pd
Lecturer(s):	Dra. Elly Arliani, M.Si.; Dra. Mathilda Susanti, M.Si.
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Compulsory Subject
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 minutes individual study, 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 (3.28 ECTS)
Prerequisites course(s):	-
Course Outcomes	After taking this course the students are expected to be able to: CO1. demonstrate responsibility and autonomy in dealing with a given task CO2. understand the concepts of data collection as well as data presentation and apply them; the term of mean, median, mode terms and how to calculate them; measures of data dispersion and range; the principles of probability theory; random variable distribution; sampling theory; parameter estimation; and hypothesis testing
Content:	This course discusses the following topics: 1. Basic concepts of statistics 2. Measurement scale 3. Data collection and presentation 4. Mean, median, mode 5. Measures of data dispersion 6. Range 7. Combinatorics and probability theory 8. Random variable distribution 9. Parameter estimation 10. Hypothesis testing
Study/exam achievements:	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.

<table>
<tr><td></td><td>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 this course if at least they show a good attitude.

The final mark will be weighted as follows:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO1, CO2.</td><td>Individual and Group Assignment

Mid-term Exam
Final Exam
Participation</td><td>Presentation / written assignment
Written test
Written test
Observation</td><td>30%

20%
30%
20%</td></tr>
<tr><td colspan="3"></td><td>Total</td><td>100%</td></tr>
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<tr><td>Forms of media:</td><td>Board and Board markers, LCD Projector, Laptop/Computer, Modules, Learning videos, Power Point Slides</td></tr>
<tr><td>References:</td><td>Walpole, Ronald.E . 1995. Alih bahasa oleh Bambang Sumantri. Introductory to Statistics. Gramedia, Jakarta.
James, Gareth. 2013. An Introduction to Statistical Learning: with Applications in R. Springer.
Doane, D. P., & Seward, L. E. (2011). Measuring skewness: A forgotten statistic? Journal of Statistics Education, 19(2). https://doi.org/10.1080/10691898.2011.11889611
Holmes, A. P., Blair, R. C., Watson, J. D. G., & Ford, I. (1996). Nonparametric analysis of statistic images from functional mapping experiments. Journal of Cerebral Blood Flow and Metabolism, 16(1). https://doi.org/10.1097/00004647-199601000-00002
Kim, T. K. (2015). T test as a parametric statistic. Korean Journal of Anesthesiology, 68(6). https://doi.org/10.4097/kjae.2015.68.6.540
McHugh, M. L. (2012). Interrater reliability: The kappa statistic. Biochemia Medica, 22(3). https://doi.org/10.11613/bm.2012.031
Soraggi, S., Wiuf, C., & Albrechtsen, A. (2018). Powerful inference with the D-statistic on low-coverage whole-genome data. G3: Genes, Genomes, Genetics, 8(2). https://doi.org/10.1534/g3.117.300192
Mario F. Triola . 2004. Elementary Statistics. Addison Wiley.</td></tr>
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PLO and CO mapping

	PLO					
	Attitude		Knowledge	Specific Skill	General Skill	
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1			√		√	
CO2				√		