Master Program of Mathematics Education   **Module Handbook**

Module Name:	Statistics and Probability
Module Level:	Master (S-2)
Abbreviation, if applicable:	
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	2 /First year
Module Coordinator(s):	A'yunin Sofro, M.Si., Ph.D.
Lecturer(s):	1. A'yunin Sofro, M.Si., Ph.D. 2. Prof. Drs. I Ketut Budayasa, Ph.D.
Language:	Indonesian
Classification within the curriculum:	Compulsory course/~~elective studies~~
Teaching format/class hours per week during the semester	Teaching format: lectures, tutorial assignment, and individual study. 3×240 minutes $= 720$ minutes $= 12$ hours lectures
Workload:	15 weeks per semester consisting of: • 1 hour lecture (1×50 minutes) per week, • 2 hours assignments (2×45 minutes) per week, • 2 hours individual study (2×50 minutes) per week, Total workload: $14 \times 3 \times 240$ minutes $= 10{,}080$ minutes ≈ 6.72 ECTS*
Credit Point:	3
Requirements:	N/A

Learning Outcomes:	**Knowledge (KNO-1)** CLO-1: able to develop mathematical thinking which begins from an understanding of probability theory, random variables, discrete and continuous random distribution functions, and moment generating functions. CLO-2: able to formulate problems related to probability theory, random variables, discrete and continuous random distribution functions, and moment generating functions. **Skill (SKI-1)** CLO-3: able to implement probability theory, random variables, discrete and continuous random distribution functions, and moment generating functions in solving statistical problems.
Content:	Studying set and enumeration, permutation and combination, sample space and events, probability of an event, sum rule, conditional probabilty, Bayes rule, random variable, discrete probability distribution, continuous probability distribution, empirical distribution and cumulative distribution, combined probability distribution, marginal and conditional distributions, mathematical expectations and types of mathematical expectations and their properties, moment generating functions, distributions of discrete random variables, and the central limit theorem.
Study/exam achievements	• Students are considered competent and pass if the final score calculated from the score of midterm exam, assignments, participation, and final exam is at least 55 or C. • Final score is calculated as follows: 20% midterm exam + 30% assignments + 20% participation + 30% final exam • Final index is defined as follows:

Index	Converted Score	Score Range
A	4.00	$85 \leq A \leq 100$
A-	3.75	$80 \leq A\text{-} < 85$
B+	3.50	$75 \leq B\text{+} < 80$
B	3.00	$70 \leq B < 75$
B-	2.75	$65 \leq B\text{-} < 70$
C+	2.50	$60 \leq C\text{+} < 65$
C	2.00	$55 \leq C < 60$
D	1.00	$40 \leq D < 55$

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		E	0.00	$0 \leq E < 40$	
Media employed	Slides and LCD projectors, white board				
Reading list	[1] Walpole, R. E., Myers, R. H., Myers, S. L., & Ye, K. (2017). *Probability & Statistics for Engineers & Scientists*, (Ninth Ed.). Prentice Hall. [2] Hogg, R. V., & Craig, A. T. (2012). *Introduction to Mathematical Statistics*, (Seventh Ed.). McMillan Publishing Co. Inc. [3] Weiss, N. A. 2017). *Elementary Statistics*, (Eighth Ed.). Pearson Education,Inc.				
Note	*Total hours per 1 credit in 1 semester = {(1 credit × 240 minutes × 14 weeks)/60 minutes} = 56 hours. Each ECTS equals 25 hours, so 1 credit in 1 semester is equivalent to 2.24 ECTS.				
Last amendment	January 2023				