



Mathematical Statistics I

Module name	Course Module
Module level	Undergraduate Programme
Code, if applicable	31150443
Sub-title, if applicable	-
Courses, if applicable	Mathematical Statistics I
Semester(s) in which the module is taught	Semester 2
Person responsible for the module	Lecturer of course
Lecturer(s)	3. Vera Maya Santi, M.Si. 4. Qorry Meidianingsih, M.Si.
Language	Bahasa Indonesia
Relation to curriculum	This course is a compulsory subject of the study program in semester 2.
Type of teaching, contact hours	Teaching methods used in this course are: - Lecture (i.e. presentation of lecture material, group discussion, case-based learning) - Structured assignments (case studies) The class size for the lecture is 40 students. Contact hours for lecture is 40 hours.
Workload	Students are required to fulfill a minimum of 136 hours in one semester, which consists of: - 40 hours for lecture, - 48 hours for structured assignments, - 48 hours for self-study
Credit points	4.5 ECTS
Requirements according to the examination Regulations	Students should have attended all lectures and submitted all scheduled individual and group assignments prior to the final examination.
Recommended prerequisites	Basic Statistics



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Program intended learning outcomes	<p>Programmes Learning Outcome (PLO) that can be achieved with this course are:</p> <p>PLO 5 : Mastering the theoretical concept of mathematics, including mathematical logic, discrete mathematics, algebra, analysis and geometry, probability, and statistics.</p> <p>PLO 6 : Mastering in modeling mathematical concepts, linear programs, differential equations, dan numerical methods.</p> <p>The Course Learning Outcomes (CLO) to be achieved in this course are:</p> <p>CLO 1 : Able to understand the concepts and principles of probability.</p> <p>CLO 2 : Able to understand the concept of random variables and probability distribution functions.</p> <p>CLO 3 : Able to understand the procedure for determining the expected value and variance of random variables with special or common probability distributions.</p> <p>CLO 4 : Able to understand the concept of probability distribution of combined random variables.</p> <p>CLO 5 : Able to understand concepts and theories in determining the function distribution of a random variable.</p> <p>CLO 6 : Able to understand concepts and theories regarding the convergence of distributions.</p> <p>The relationship between PLO and CLO in this course is described as follows.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">CLO</th> <th colspan="2">PLO</th> </tr> <tr> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td></tr> </tbody> </table>	CLO	PLO		5	6	1			2			3			4			5			6		
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Content	<p>Mahasiswa akan mempelajari tentang:</p> <ol style="list-style-type: none"> 9. Probability 10. Random Variables and Their Distributions 11. Special Probability Distributions 12. Joint Distributions 13. Functions of Random Variables 14. Limiting Distributions 																							



Forms of Assessment	The components of assessment in learning consist of assignments (30%), mid-exams (35%), and final exams (35%).
Study and examination requirements and forms of examination	<ul style="list-style-type: none"> • Study and examination requirements: <ol style="list-style-type: none"> 21. Students must be present 15 minutes before the lecture begins. 22. Students who do not attend more than 20% of the total meeting are considered failed in this course. 23. Students are not allowed to use communication tools for purposes that are not related to learning. 24. Students must submit all assignments before the deadline. 25. Students must take the exam to get the final grade. • Form of examination: written examination
Media employed	Computer/ personal laptop, internet, LCD, whiteboard, online learning platforms (Microsoft Teams/ Zoom, LMS), Microsoft Excel, and Microsoft Power Point.
Reading list	References: <ol style="list-style-type: none"> 4. Bain, L. J. & Engelhart, M. (1992). <i>Introduction to Probability and Mathematical Statistics</i> (2nd ed.). Duxbury. 5. Hogg, R. V., McKean, J. W., & Craig, A. T. (2019). <i>Introduction to Mathematical Statistics</i> (8th ed.). Pearson. 6. Hogg, R. V. & Craig, A.T. (1978). <i>Introduction to Mathematical Statistics</i> (4th ed.). Macmillan Publishing Co., Inc.