UNIVERSITAS NEGERI PADANG
FACULTY OF MATHEMATICS AND NATURAL SCIENCES MATHEMATICS
DEPARTMENT, MATHEMATICS STUDY PROGRAM
Main Campus Universitas Negeri Padang.
Jalan Prof. Dr. Hamka Air Tawar Padang, Sumatera Barat
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Module name:	Probability Theory
Module level, if applicable:	Bachelor
Code:	MAT1.62.4003
Subheading, if applicable:	-
Classes, if applicable:	Probability Theory
Semester :	4th (fourth)
Module coordinator:	Head of Statistics Expertise Group
Lecturer(s):	Dr. Devni Prima Sari, S.Si., M.Si.,and Dr. Suherman, S.Pd., M.Si.
Language:	Indonesian Language and English
Classification within the curriculum:	Compulsory course in the second year (4th semester) Bachelor Degree
Teaching format / class hours per week during the semester:	a. Lectures : Problem Based Learning with methods such as expository, discussion, and drill. (4 x 50 minutes = 200 minutes) b. Structured assignment : Weekly individual written assignment. (4 x 60 minutes = 240 minutes). c. Individual study (4 x 60 minutes = 240 minutes).
Workload:	The total workload is 181.33 hours per semester, which consists of 200 minutes lectures, 240 minutes structured assignment, and 240 minutes of individual study. In total, there are 16 weeks per semester, including midterm and final exams.
Credit points:	4 SKS = 6.04 ECTS
Prerequisites course(s):	Calculus

Course outcomes:	After taking this course the students have ability to: CO1 Calculate probabilities by applying probability laws and theoretical results. CO2 Use the concept of random variables to solve probability problems CO3 Determine the probability function of random variable and find a solution for it CO 4 Prove the theorem about mathematical expectation and limit theorem
Content:	1. Fundamental analysis concept of combinatory 2. Axioms of probability 3. Conditional probability and Independency 4. Discrete random variable 5. Continuous random variable 6. Jointly random variable 7. Mathematical expectation 8. Limit Theorem :Law of large number, Central Limit Theorem
Study/exam achievements:	The final grade will be weighted as follows: The assessment consists of a final exam (35%), a midterm exam (35%), task (20 %), and class activities (10%). The final and midterm exams are essay tests with a closed book (120 minutes). In class, students build the concept (discussion) based on the problem that is related to this course. Each student gets a weekly assignment as an individual or group.
Forms of media:	White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting.
Literature:	1. Miller, I., Miller, M. (2014). John E. Freund's mathematical statistics with applications, 8th ed. Prentice Hall. 2. F.M. Dekking et.al. (2005). A Modern Introduction to Probability and Statistics, Understanding Why and How, Springer. 3. Deep, R. (2006). Probability and Statistics : With Integrated Software Routines. Amsterdam: Academic Press.

	4. Young, G. A., & Smith, R. L. (2005). Essentials of Statistical Inference. Cambridge: Cambridge University Press. 5. Bain, L. J., Engelhardt, M. (1991). Introduction to Probability and Mathematical Statistics, 2th ed Duxbury. 6. Ross, S. M. (2010). A first course in probability, 8th ed. Pearson Prentice. 7. Ross, S. M. (2004). Introduction to Probability and Statistics for Engineers and Scientists, 3th ed Elsevier.

PLO and CO Mapping

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