UNIVERSITAS NEGERI PADANG
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
MATHEMATICS DEPARTMENT, MATHEMATICS EDUCATION STUDY PROGRAM
Main Campus Universitas Negeri Padang.
Jalan Prof. Dr. Hamka Air Tawar Padang, Sumatera Barat
Phone: +62 751 7053902, Fax: +62 751 7055628
Email: matematika@fmipa.unp.ac.id

Bachelor of Mathematics Education **MODULE HANDBOOK**

Module name:	Mathematical Statistics 2
Module level, if applicable:	Bachelor
Code:	MAT2.61.8104
Sub-heading, if applicable:	-
Classes, if applicable:	Mathematical Statistics 2
Semester:	8th (Eigth)
Module coordinator:	Dr. Suherman, M. Si.
Lecturer(s):	Dr. Suherman, M. Si., and Team
Language:	Bahasa Indonesia
Classification within the curriculum:	Study Program Elective Course
Teaching format / class hours per week during the semester:	Teaching format: • Lectures (face to face activities): Expository, Group discussions • Structured assignment, • Independent activities, and • Practice. 3 x 170 minutes = 510 minutes = 8.50 hours
Workload:	16 weeks per semester include Midterm Exam and Final Exam which consist of: • 1.67 hours lectures (2 x 50 minutes) per week • 2 hours structured assignments (2 x 60 minutes) per week • 2 hours independent activities (2 x 60 minutes) per week • 2.83 hours practice (1 x 170) per week 16 x 170 x 3 = 8160 Minutes =136 hours = 4.53 ECTS
Credit points:	3 SKS (4.53 ECTS)
Prerequisite's course(s):	Elementary Statistics, Mathematics Statistics 1
Course outcomes:	After taking this course the students have ability to: CO 1: Interpret the probability of a specific distribution of discrete and continuous random variables, the function of variables random, sampling distribution, parameter estimation theory, estimator evaluation, hypothesis testing, and test evaluation method. CO 2: Apply the probability of a specific distribution of discrete and continuous random variables, the function of variables random, sampling distribution, parameter estimation theory, estimator evaluation, hypothesis testing, and test evaluation method.

	CO 3: Analyze the probability of a specific distribution of discrete and continuous random variables, the function of variables random, sampling distribution, parameter estimation theory, estimator evaluation, hypothesis testing, and test evaluation method. CO 4: Show the probability of a specific distribution of discrete and continuous random variables, the function of variables random, sampling distribution, parameter estimation theory, estimator evaluation, hypothesis testing, and test evaluation method. CO 5: Show responsibility attitude towards works by self and by team works.
Content:	This course discusses: 1. Special probability distribution of discrete random variables: uniform distribution, binomial, negative binomial, geometric, hypergeometric, Poisson, multinomial, multiple hypergeometric. 2. Special probability distribution of continuous random variables: gamma distribution, exponential, chi-square, beta, and normal distribution 3. Random variable function: distribution function technique, transformation technique, and moment generating function technique 4. Sampling distribution: distribution of mean, chi-squared, t-student, F, statistical mean. 5. Parameter estimation methods: moment method, maximum likelihood method, least squares method, minimax decision-making method, and Bayes method. 6. Estimator evaluation methods: squared mean error, best uniform unbiased estimator, adequacy, completeness, consistency, Rao-Blackwell, Lehman-Schefft, Cramer-Rao propositions; 7. Hypothesis testing theory: statistical hypothesis, single and multiple hypotheses, test error, test power, test function 8. Test evaluation method: Nyman-Pearson lemma, uniform most powerful test, unbiased test, probability ratio test
Study/exam achievements:	Total score= (25% x Midterm Exam) + (30% x Final Exam) + (25% x Project) + (20% x Affective Score Assessment) The initial cut - off points for grades A, A-, B+, B, B-, C+, C, C-, and D should not be less than 85, 80, 75, 70, 65, 60, 55, 50, and 40 out of 100 respectively. **Explanation:** **1. Midterm Exam** ✓ Midterm exam was held at the 9th meeting ✓ Midterm exam was carried out in the classroom with an implementation time of 120 minutes according to the module schedule **2. Final Exam** ✓ Final exam was held at the 18th meeting ✓ Final exam was carried out in the classroom with an implementation time of 120 minutes which follows the

	UAS implementation schedule of the department. **3. Project Assignment** ✓ Projects were given once in a semester at week thirteenth. ✓ Projects are given as individual assignment and it is in form of paper and presentation. The project is assessed by rubric assessment. ✓ The presentation is held at week fourteenth, fifteenth, and sixteenth. ✓ The project is to write an article related to actuarial learning contents. **4. Affective Assessment** ✓ Affective assessment is held in every meeting by observing students' attitude in classroom and daily interaction at campus. ✓ The assessment based on observation sheet and it was given score by affective rubric assessment.
Forms of media:	Board and LCD Projector
Literature:	1. Rasch, D & Scott, D. (2018). Mathematical Statistics. 2. Craig, A. T., Hogg, R. V., McKean, J. W. (2013). Introduction to Mathematical Statistics. Jerman: Pearson. 3. Manoukian, E. B. (2012). Modern Concepts and Theorems of Mathematical Statistics. Amerika Serikat: Springer New York. 4. Miller, I. (2013). John E. Freund's Mathematical Statistics with Applications. Pearson. 5. Zacks, S. (2014). Examples and Problems in Mathematical Statistics. NY: Binghamton.

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11
CO1	✓										
CO2	✓										
CO3	✓										
CO4	✓										
CO5										✓	