UNIVERSITAS NEGERI PADANG
FACULTY OF MATHEMATICS AND NATURAL SCIENCES MATHEMATICS
DEPARTMENT, MATHEMATICS STUDY PROGRAM Main Campus Universitas Negeri
Padang.
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Bachelor of Science in Mathematics   **MODULE HANDBOOK**

Module name:	Actuarial Mathematics
Module level, if applicable:	Bachelor
Code:	MAT1.62.4004
Subheading, if applicable:	-
Classes, if applicable:	Actuarial Mathematics
Semester:	4th (fourth)
Module coordinator:	Head of Actuarial Expertise Group
Lecturer(s):	Dr. Devni Prima Sari, S.Si., M.Sc., Muhammad Subhan, S.Si., M.Si., and Dr. Suherman, S.Pd., M.Si.
Language:	Indonesian Language and English
Classification within the curriculum:	Compulsory courses in the second year (4th semester) of Bachelor Degree
Teaching format/class hours per week during the semester:	a. Lectures: by problem-based learning with methods such as expository, presentations, group, and class discussion. (3 x 50 minutes = 150 minutes) b. Structured assignment: Weekly individual written assignment. (3 x 60 minutes = 180 minutes) c. Individual study. (3 x 60 minutes = 180 minutes)
Workload:	Total workload is 136 hours per semester which consists of 150 minutes of lectures, 180 minutes of structured activities, and 180 minutes of individual study per week for 16 weeks.
Credit points:	3 SKS = 4.53 ECTS
Prerequisites course(s):	Probability Theory
Course outcomes:	After taking this course the students have the ability to CO1 Analyze basics of interest and its applications. CO2 Solve annuity problems using appropriate mathematical software. CO3 Explain the basics of individual life insurance, including mortality tables and life annuities. CO4 Apply individual life insurance premiums and the

	concept of premium reserves, and their application.
Content:	This course begins with material that discusses the world of actuarial, interest rates, basic annuities, amortization schedules and sinking funds, concepts of opportunity theory, mortality tables, life annuities, pure endowment, life insurance, and the idea of net premium reserves.
Study/exam achievements:	The final mark will be weighted as follows: The assessment consists of the final exam (30 %), mid-term exam (30%), assignment (20 %), and presentation (20%). Final and mid-term exams are in the form of an open book essay written test (120 minutes). Weekly assignments (solving selected problems) are given in two forms; group or individual assignments. Presentation is based on problems in finance and focused on the solution of the problem.
Forms of media:	White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting.
Literature:	1. Corazza. M, Legros. F, Perna. C, Sibillo. M. (2017). Mathematical and Statistical Methods for Actuarial Sciences and Finance. Springer. 2. Bowers. N.L., Gerber. H.U., Hickman. J.C, Jones. D.A., Nesbitt. C.J. (1997). Actuarial Mathematics, 2nd Ed. Illinois: The Society of Actuaries. 3. Fuyami. T. (1993). Matematika Asuransi Jiwa, Bagian 1. Tokyo: Incorporated Foundation. 4. Gerber. H.U. (1997). Life Insurance Mathematics, 3rd Ed. Zurich: Springer. 5. Subhan, M. (2018). Pengantar Matematika Aktuaria. Universitas Negeri Padang.

PLO and CO mapping

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