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:	Survival Analysis
Module level, if applicable:	Bachelor
Code:	MAT2.62.7007
Sub-heading, if applicable:	-
Classes, if applicable:	Survival Analysis
Semester:	7th (seventh)
Module coordinator:	Head of Actuarial Expertise Group
Lecturer(s):	Dr. Devni Prima Sari, M.Si. and Dina Agustina, S.Pd., M.Sc.
Language:	Indonesian Language and English
Classification within the curriculum:	Compulsory course in the forth year (7th 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. (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 lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks.
Credit points:	3 SKS = 4,53 ECTS
Prerequisites course(s):	1. Elementary Statistics 2. Mathematical Statistics

Course outcomes:	After taking this course the students have ability to: CO 1. explain survival data, hazard function and survival function, parametric regressions, and Cox regression. CO 2. show parameter inference for survival data, both for complete and incomplete data (censored, trumcated); CO 3. analyze hazard function and survival function using parametric and nonparametric methods; CO 4. analyze parametric and Cox regression for survival data; CO 5. apply the methods in survival analysis for real problems using statistical software (Excel, Minitab, SPSS).
Content :	Survival data (duration data, time-to-event data), type of survival data: censored and truncated sample, survival distribution model, parametric inference for survival data, Kaplan-Meier, Life-Table, Nelson-Aalen, parametric regression and Cox regression for survival data.
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. Lawless, J. F. 2003. Statistical Models and Methods for Lifetime Data. John Wiley and Sons. New York. 2. Lee, E. T. and Wang, J. W. 2003. Statistical Methods for Survival Data Analysis, 3rd Ed. John Wiley and Sons. New York.

PLO and CO Mapping

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