



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Mathematics

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Master in Mathematics

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MODULE HANDBOOK

Module Name	Credibility Theory
Module level, if applicable	Master Program
Code, if applicable	MMM-5520
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	<i>2/1st year</i>
Person responsible for the module	Chair of Lab. Statistics
Lecturer(s)	Dr. Adhitya Ronnie Effendie Danang Teguh Qoyyimi, Ph.D
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>Lecture, laboratory work</i>
Workload (incl. contact hours, self-study hours)	3x50 minutes lecture, 6 hours individual study per week, 14 weeks per semester. Total 119 hours a semester
Credit points	3
Required and recommended prerequisites for joining the module	

Module objectives/intended learning outcomes	After completing this course the students have ability to : CO-1 Understand the fundamental concepts of conditional probabilities and distributional quantities on conditional random variables CO-2 Understand the Bayesian method and Bayesian inference CO-3 Understand credibility theory methods and capable to apply them in actuarial works and research
Content	The course will cover: Conditional probabilities and conditional random variables, Empirical distribution, Bayesian concept, Bayesian estimation and inference, full credibility and partial credibility, Buhlmann credibility, Buhlmann-Straub credibility, Empirical credibility, non parametric and semi-parametric credibility
Examination forms	The weight of assignments will be as follows: i. Quiz, homework 15% ii. Project 10% iii. Mid semester exam 30% iv. Final exam 45%
Study and examination requirements	
Media employed	Slides and LCD projectors, laptop, whiteboards
Reading list	<i>Loss Models: From Data to Decisions</i> , (Fifth Edition), 2019, by Klugman, S.A., Panjer, H.H. and Willmot, G.E., Wiley, ISBN: 978-1-119-52378-9. Buhlmann, H. dan Gisler, A. (2005). <i>A Course in Credibility Theory and Its Applications</i> . Hoboken, NJ: Springer.

CO-PLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
CO-1			√			
CO-2			√			
CO-3					√	

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