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MODULE HANDBOOK

Module name	Introduction to Theory of Measure and the Lebesgue Integral
Module level, if applicable	Bachelor
Code, if applicable	MMM- 3105
Subtitle, if applicable	
Courses, if applicable	Introduction to Theory of Measure and the Lebesgue Integral
Semester(s) in which themodule is taught	6th (sixth)
Person responsible for themodule	Chair of the Lab. of Analysis
Lecturer	Prof. Dr. Soeparna Darmawijaya
Language	Bahasa Indonesia
Relation to curriculum	Bachelor Degree, Elective, 6th semester
Type of teaching, contact hours	150 minutes lectures, 180 minute structured activities.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points	3
Requirementsaccording to the examination regulations	Students have taken the course of Introduction to Analysis I (MMM-3101) and have participated in the final exam of the course. The students should take Introduction to Analysis II (MMM-3102) at least in the same semester
Recommended prerequisites	Introduction to Analysis I and sequence of functions.
Module objectives/intended learning outcomes	After completing this course the students have ability to: CO 1. analyze the measurability of a set and a function. CO 2. analyze the Lebesgue integrability of a function on [a, b]. CO 3. prove and develop some properties of Lebesgue integrable functions.
Content	• Measure: length of an interval and outer measure of a set. • Measurable space: definition of measurable space, properties of measurable space, and measure (Lebesgue). • Measurable function: definition of measurable function, some properties of measurable functions, operations of measurable functions, characteristic function, and simple function. • The Lebesgue Integral: definition of the Lebesgue integral on [a, b], relation between the Riemann integral and the Lebsegue integral on [a, b], some properties of the Lebesgue integral on [a, b].
Study and examination requirements and forms of examination	The final mark will be weighted as follows: No — Assessment methods (components, activities) — Weight (percentage) 1 — Final Examination — 35% – 45% 2 — Mid-Term Examination — 30% – 35% 3 — Class Activities: Quiz, Homework, etc. — 25% – 30%

	The initial cut-off points for grades A, B, C, and D should not be less than 80%, 70%, 50%, and 40%, respectively.
Media employed	Board, LCD Projector, Laptop/Computer
Reading List	1. G. De Barra, 1974, *Introduction to Measure Theory*, Van Nostrand Reinhold Company, New York. 2. Halsey L. Royden, and Patrick M. Fitzpatrick, 2010, Real Analysis, 4th Edition, Prentice Hall. 3. Richard L. Wheeden, and Antoni Zygmund, 1977, *Measure and Integration*, CRC Press

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1			v			v	v		v
CO 2			v			v	v		v
CO 3			v			v	v		v