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Master in Mathematics

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MODULE HANDBOOK

Module Name	*Riesz Spaces*
Module level, if applicable	*Master*
Code, if applicable	*MMM-6110*
Subtitle, if applicable	-
Courses, if applicable	*Riesz Spaces*
Semester(s) in which the module is taught	*2nd (second)*
Person responsible for the module	*Chair of the Lab. of Analysis*
Lecturer(s)	*Prof. Dr. Supama, M.Si.* *Made Tantrawan, S.Si., M.Sc., Ph.D.*
Language	*Indonesia*
Relation to curriculum	*Elective course in the second semester master's degree*
Teaching methods	*Lecture, classroom discussion, flipped learning*
Workload (incl. contact hours, self-study hours)	*The total workload is 136 hours per semester, which consists of 150 minutes of lectures per week for 14 weeks, 180 minutes of structured activities per week, and 180 minutes of individual study per week, in total is 16 weeks per semester, including mid-exam and final exam.*
Credit points	*3*
Required and recommended prerequisites for joining the module	*Analysis II (MMM-5102)*

Module objectives/intended learning outcomes	*After completing this course, the students should be able to:* *CO 1. prove basic properties of Riesz spaces.* *CO 2. analyze several types of Riesz spaces/subspaces and prove their properties.* *CO 3. determine order convergence or uniform convergence of sequences on Riesz spaces.* *CO 4. solve problems related to norm Riesz spaces and Banach lattices.*
Content	*The course will cover basic concepts and properties of Riesz spaces:* *1. Riesz Spaces* *2. Ideals, Bands, and Disjointness* *3. Archimedean Riesz spaces, Order Convergence, and Uniform Convergence* *4. Projection Bands and Dedekind Completeness* *5. Norm Riesz Spaces and Banach Lattices* *6. The Riesz-Fischer Property and Order Continuous Norms*
Examination forms	*Essay*
Study and examination requirements	*The final mark will be weighted as follows:* *No Assessment methods (components, activities) Weight (percentage)* *1 Final Examination 30% - 40%* *2 Mid-Term Examination 30% - 40%* *3 Class Activities: Quiz, Homework, etc 20% - 30%*
Media employed	*Board, LCD Projector, Laptop/Computer*
Reading list	*1. Zaanen, A.C., 1997, Introduction to Operator Theory in Riesz Spaces, Springer.* *2. Luxemburg, W.A.J., dan Zaanen, A.C., 1971, Riesz Spaces, American Elsevier Pub. Co.* *3. Meyer-Nieberg, 1991, Banach Lattices, Springer.* *4. Aliprantis, C. dan Burkinshaw, O., 2006, Positive Operators, Springer.* *5. Kalauch, A. dan Onno van Gaans, 2019, Pre-Riesz Spaces, De Gyuter.*

CO-PLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
CO 1	v		v	v	v	
CO 2	v		v	v	v	
CO 3	v		v	v	v	
CO 4	v		v	v	v	

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