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Doctor in Mathematics **MODULE HANDBOOK**

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Module Designation	Applied Algebra and Its Development
Code, if applicable	MMM 7210
Subtitle, if applicable	-
Course	Applied Algebra and Its Development
Semester(s) in which the module is taught	1st or 2nd Semester
Person responsible for the module	Chair of Algebra Research Group
Language	Indonesia
Relation to curriculum	Elective courses
Teaching methods	Lecture, presentation, case based learning, project based learning
Workload (incl. contact hours, self-study hours)	Total workload is 232 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 in Credit Units	3
Required and recommended prerequisites for joining the module	Before taking this course, students must master the introduction to graph theory and discrete mathematics and probably some other basic theory related to dissertation topic such as group theory, ring theory, linear algebra theory and number theory
Module objectives/intended learning outcomes	Upon successful completion of this course, students are able to: ● CO 1: identify and analyze some development related to algebra and graph theory ● CO 2: develop a new concept related to alegbra and graph theory and able to make conjectures based on the new concept

Content	• This course provides material to students about some topics in the development of algebra and graph theory and combinatorics • Additional further topics and syllabus will be adjusted to the dissertation topic. It can be, for instance advanced theory on algebra and graph.
Examination forms	Final Examination, Essay, Assignment, Case-Based
Study and examination requirements	The final mark will be weighted as follows: Weight (percentage) 1 Final Examination 25 % 2 Assignment 25 % 3 Project 50 % To pass the course, the minimum grade is B (70%)
Reading list	References may take from the following list: 1. Ravindra B. Bapat, 2010, Graphs and Matrices, Springer 2. Chris Godsil and Gordon Royle, 2001, Algebraic Graph Theory, Springer 3. Norman Biggs, 1996, Algebraic Graph Theory, Cambridge University Press 4. Ulrich Knauer, 2011, Algebraic Graph Theory, De Gruyter 5. Reinhard Diestel, 2005, Graph Theory, Springer Verlag Heidelberg New York 6. Richard M. Foote and David S. Dummit, 2003, Abstract Algebra, John Wiley and Sons. 7. David A.R. Wallace, 2001, Groups, Rings and Field, Springer.

CO-PLO Mapping

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

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