



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Mathematics Department

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Doctoral Program in Mathematics

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MODULE HANDBOOK

Doctoral in Mathematics

Module name:	Abstract Algebra									
Module level, if applicable:	Doctoral Program									
Code, if applicable:	MMM 7201									
Semester(s) in which the module is taught:	First Year									
Person responsible for the module:	Indah Emilia Wijayanti									
Lecturer(s):	All eligible lecturers									
Language:	Bahasa Indonesia									
Relation to curriculum:	Doctor Degree in Mathematics, Elective Courses									
Credit points:	3									
Type of teaching, contact hours:	3x50 minutes lectures, 3x50 minutes structured activities.									
Workload:	<ul style="list-style-type: none"> • 3x50 minutes lectures, • 3x50 minutes structured activities, • 3x50 minutes individual study, • In 16 weeks per semester (including mid-term and final examinations). • Total: 144x50 minutes per semester. 									
Requirements according to the examination regulations:	NONE									
Recommended prerequisites:	Before taking this course, the students must have a good understanding the abstract concept.									
Module objectives/intended learning outcomes:	<p>On satisfying the requirements of this course, students will have the knowledge and skills to:</p> <p>CO-1: Demonstrate understanding of and the ability to work within various algebraic structures.</p> <p>CO-2: Demonstrate understanding of the importance of algebraic properties with regard to working within various systems.</p> <p>CO-3: Demonstrate ability to form and evaluate conjectures in area of advanced abstract algebra</p> <p>CO-4. Develop specific skills, competencies and thought processes sufficient to support further study or work in this or related fields.</p>									
Content:	<ul style="list-style-type: none"> • This course introduces students to key concepts and techniques in advanced algebra. • Topics will be taken from contemporary research areas in Algebra. • This course consist of the core and advanced courses from algebra. • It will be a bridge for the student to enter on new research area in algebra. • The course is offered to accommodate the development of new research topic in abstract algebra and related topics. • The topics and also the syllabus will be decided related to the research topics of the student. 									
Study and examination requirements and forms of examination:	<p>The final mark will be weighted as follows:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Assessment methods (components, activities)</th> <th>Weight (percentage)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Examination</td> <td>35%</td> </tr> <tr> <td>2</td> <td>Mid-Term Examination</td> <td>30%</td> </tr> </tbody> </table>	No	Assessment methods (components, activities)	Weight (percentage)	1	Final Examination	35%	2	Mid-Term Examination	30%
No	Assessment methods (components, activities)	Weight (percentage)								
1	Final Examination	35%								
2	Mid-Term Examination	30%								

	3	Projects	25%
	4	Peer Assessment/Quiz	10%
Final grade will be determined as follows:			
Grade Criteria			
A : $95 \leq \text{final mark} \leq 100$			
A- : $90 \leq \text{final mark} < 95$			
A/B : $85 \leq \text{final mark} < 90$			
B+ : $78 \leq \text{final mark} < 85$			
B : $70 \leq \text{final mark} < 78$			
B- : $65 \leq \text{final mark} < 70$			
B/C : $60 \leq \text{final mark} < 65$			
C+ : $54 \leq \text{final mark} < 60$			
C : $48 \leq \text{final mark} < 54$			
C- : $40 \leq \text{final mark} < 48$			
C/D : $35 \leq \text{final mark} < 40$			
D+ : $30 \leq \text{final mark} < 35$			
D : $25 \leq \text{final mark} < 30$			
E : final mark < 25			
Media employed:	White/Black Board, LCD Projector, Laptop/Computer		
Reading List:	The reading list will be announced by the lecturer on the first meeting.		

Mapping of The COs and PLOs

	PLO – 1 S3 Mat	PLO – 2 S3 Mat	PLO – 3 S3 Mat	PLO – 4 S3 Mat	PLO – 5 S3 Mat	PLO – 6 S3 Mat
CO 1		v	v			
CO 2			v	v		
CO 3			v	v		
CO 4	v			v		v

Programme Learning Outcomes (PLO) Doctoral Programme in Mathematics

PLO-1	:	Attitude: Devote to God Almighty, uphold the humanity values, internalize academic values and ethics, responsible in working in the area of expertise independently.
PLO-2	:	Knowledge: Mastering philosophy of mathematics and one of the fields in mathematics (algebra, analysis, applied mathematics, statistics, computational mathematics, computational statistics).
PLO-3	:	Knowledge: Able to think logically, analytically, inductively, deductively, and structured; having the ability to manage, lead, and develop research programs independently, and able to communicate the thoughts as well as his work to the scientific community and the general public.
PLO-4	:	Skill: Creating new concepts and / or new methods (original) in the field of mathematics that are recognized nationally and internationally.
PLO-5	:	Skill: Able to apply mathematics according to their field of expertise to solve problems including those that require a multidisciplinary, cross-disciplinary, or trans-disciplinary approach.

PLO-6	:	<i>Life Long Learning:</i> Having lifelong learning skills and adaptive to the development of science and technology, especially in fields related to Mathematics and its applications.
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