



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:	Topics in Mathematical Analysis B												
Module level, if applicable:	Doctoral Program												
Code, if applicable:	MMM 7104												
Semester(s) in which the module is taught:	1 st (first) or 2 nd (second)												
Person responsible for the module:	Chair of Analysis Research Group												
Lecturer(s):	All eligible lectures												
Language:	Indonesian												
Relation to curriculum:	Doctoral Degree in Mathematics, Elective Course												
Credit points:	3 Semester Credit Unit												
Type of teaching, contact hours:	3x50 minutes lectures, 3x60 minutes structured activities.												
Workload:	<ul style="list-style-type: none">• 3x50 minutes lectures,• 3x60 minutes structured activities,• 3x60 minutes individual study,• In 16 weeks per semester (including assignments and examinations)												
Recommended prerequisites:	Before taking this course, the students must have a good background of rigorous mathematical concepts related to the topics.												
Module objectives/intended learning outcomes:	After completing this course, the students should have: <ul style="list-style-type: none">• CO 1. Ability to understand and analyze the concepts and properties related to the mathematical analysis topics in the course and ability to work within the topics.• CO 2. Ability to use the concepts and properties related to the topic of the module to develop new ideas in their research topics.• CO 3. Ability to use the concepts and properties related to the topic of the module to solve problems in their research topics.												
Content:	<ul style="list-style-type: none">• The course is offered to accommodate the development of new research topics in mathematical analysis.• The topics will be taken from contemporary research areas related to the student's research topic.• The module consists of the core and advanced courses on mathematical analysis.• The module is carried out to strengthen the scientific background of students to work in the research areas in mathematical analysis.• The topics and also the syllabus will be determined depends on the student's research topic.												
Study and examination requirements and forms of examination:	The final mark will be weighted as follows: <table><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>40%</td></tr><tr><td>2</td><td>Mid-term examination</td><td>30%</td></tr><tr><td>3</td><td>Other activities: presentation, homework, etc.</td><td>30%</td></tr></tbody></table>	No	Assessment methods (components, activities)	Weight (percentage)	1	Final examination.	40%	2	Mid-term examination	30%	3	Other activities: presentation, homework, etc.	30%
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1	Final examination.	40%											
2	Mid-term examination	30%											
3	Other activities: presentation, homework, etc.	30%											

	Final grade will be determined as follows: Grade Criteria The initial cut-off points for grades A, B, C, and D should not be less than 85%, 65%, 50%, and 40%, respectively.
Media employed:	Board, LCD Projector, Laptop/Computer.
Reading List:	The reading list will be determined 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	V	V	V
CO 2		V	V	V	V	V
CO 3		V	V	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	:	Life Long Learning: Having lifelong learning skills and adaptive to the development of science and technology, especially in fields related to Mathematics and its applications.