UNIVERSITAS GADJAH MADA
Faculty of Mathematics and Natural Sciences
Mathematics Department
Sekip Utara Bulaksumur Yogyakarta 55281 Telp: +62 274 552243 Fax: +62 274 555131 Email: math@ugm.ac.id Website: http://math.fmipa.ugm.ac.id

Undergraduate Programme in Mathematics
Telp : +62 274 552243
Email : maths1@ugm.ac.id; kaprodi-s1-matematika.mipa@ugm.ac.id
sekprodi-s1-matematika.mipa@ugm.ac.id
Website : http://s1math.fmipa.ugm.ac.id/

MODULE HANDBOOK

Module name	Introduction to Analysis II
Module level, if applicable	Bachelor
Code, if applicable	MMM-3102
Subtitle, if applicable	-
Courses, if applicable	Introduction to Analysis II
Semester(s) in which the module is taught	6th (sixth)
Person responsible for the module	Chair of the Lab. Analysis
Lecturers	Prof. Dr. Ch. Rini Indrati, M.Si. Atok Zulijanto, S.Si., M.Si., Ph.D.
Language	Bahasa Indonesia
Relation to curriculum	Compulsory course in the third year (6th semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.
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
Requirements according to the examination regulations	Students have taken Introduction to Analysis II course (MMM-3102) and have an examination card where the course is stated on.
Recommended prerequisites	Students have taken Introduction to Analysis I course (MMM-3101) and have participated in the final exam of the module.
Module objectives/intended learning outcomes	After completing this course, the students should have: CO 1. ability to prove and to determine the convergence of sequences of real-valued functions and its properties. CO 2. ability to demonstrate understanding of abstract concepts in analysis and to construct simple but rigorous mathematical argument and express correctly statements in metric spaces. CO 3. ability to prove some standard theorems on topics in metric spaces. CO 4. ability to use the concepts in metric spaces to solve some problems related to metric spaces.
Content	Sequence of real-valued functions: pointwise convergence and uniform convergence of a sequence of real-valued functions and their applications. Metric spaces: the definition of metric spaces, neighborhoods, interior points, limit points, closure points, boundary points, open sets, closure, closed sets, subspaces, separability, sequences in metric spaces, complete metric spaces, continuity of functions on metric spaces, compactness, Heine-Borel Theorem. Normed spaces: Definition of normed spaces, relation of normed spaces and metric spaces.
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 — 45% 2 — Mid-Term Examination — 30% 3 — Class Activities: Quiz, Homework, etc. — 25%

	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
Reading List	1. Robert G. Bartle and Donald R. Sherbert, 2011, *Introduction to Real Analysis,* 4th Edition, John Wiley and Sons, USA. 2. Halsey L. Royden, and Patrick M. Fitzpatrick, 2010, *Real Analysis*, 4th Edition, Prentice Hall. 3. Walter Rudin, 1976, *Principles of Mathematical Analysis*, McGraw-Hill Kogakusha, Ltd, Tokyo.

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
CO 2			v			v	v		v
CO 3			v				v		v
CO 4			v				v		v