UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION
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Bachelor of Science in Mathematics **MODULE HANDBOOK**

Module name:	Real Analysis
Module level,if applicable:	Undergraduate
Code:	MAT6325
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	5th
Module coordinator:	Kus Prihantoso Krisnawan, M.Si.
Lecturer(s):	1. Kus Prihantoso Krisnawan, M.Si. 2. HusnaArifah, M.Sc. 3. FitrianaYuli S., M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory course
Teaching format / class hours perweek during the semester:	150 minutes lectures and 180 minutes structured activities per week.
Workload:	Total workload is 136 hours per semester which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks.
Creditpoints:	3
Prerequisites course(s):	Advanced Calculus (MAT6313)
Course outcomes:	After taking this course the students have ability to: CO 1. Respecting other people's views, opinions,and original ideas CO 2. Understanding definitions, theorems, and some

	characteristics in mathematics using critical and systematic thinking in a manner individually or groups CO 3. Communicating, in writing or verbally,ideas to understand or solve mathematical problems. CO 4. Explaining the meaning or definition of terms and the intent of the theorems or properties in mathematics CO 5. Using related definitions and theorems to prove other properties or theorems.
Content:	This course contains some foundations on mathematical proofs, real number systems ($\mathbb{R}$), sequences and series, some concepts of sets topology, and functions. Firstly, it will be given the foundations, such as; reviewsonbijective functions, mathematical induction, countable and uncountable sets. Secondly, the subject of the real number system includes: rational and irrational numbers, the order properties of$\mathbb{R}$, and the completeness property of $\mathbb{R}$. The subject sequences and series include: limit sequence, monotonous sequences, sub-sequences, Cauchy criteria, and several propertiesof series. Finally, the subject of several topological concepts includes: open set, closed set, and compact set. And, at the end of the course we discussed the limit of functions, continuity of functions, and uniform continuity.
Study/exam achievements:	CO1: Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude. The final grades will be weight as follow:

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<tr><td></td><td>
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<tr><th>No</th><th>CO</th><th>Objek Penilaian</th><th>Teknik Penilaian</th><th>Bobot</th></tr>
<tr><td>1</td><td>CO 2 and 4</td><td>a. Presentation
b. Individual Assignment
c. Quiz</td><td>Observation
Written

Written</td><td>10%
10%

20%</td></tr>
<tr><td>2</td><td>CO 3 and5</td><td>a. Group Assignment
b. Mid test
c. Final test</td><td>Written</td><td>10%

20%
30%</td></tr>
<tr><td colspan="3"></td><td>Total</td><td>100%</td></tr>
</table>
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<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literature:</td><td>

Abbot, S. 2010. Understanding Analysis. New York: Springer ScienceBusiness Media, Inc.
Bartle,R.G.& Sherbet D.R. 2000. Introduction to Real Analysis. Third Edition. New York: Jhon Wiley&Sons.
Brannan, D.A. 2006. A First Course in Mathematical Analysis. Cambridge: Cambridge University Press.
Davidson, K.R. &Donsig, A.P. 2010. Real Analysis with Applications. Upper Sadle River: Prentice-Hall, Inc.
Walter Rudin, 2000. Principles of Mathematical Analysis, Third Edition. McGraw-Hill, Inc.

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PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1		✓								
CO2			✓							
CO3				✓						
CO4					✓					
CO5						✓				