



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:	Complex Analysis
Module level,if applicable:	Undergraduate
Code:	MAT6330
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	5 th
Module coordinator:	Kus Prihantoso Krisnawan, M.Si.
Lecturer(s):	1. Dra. Atmini Dhoruri, M.S. 2. Kus Prihantoso Krisnawan, M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory course
Teaching format / class hoursperweekduring 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

	<p>systematic thinking in a manner individually or groups</p> <p>CO 3. Communicating, in writing or verbally, ideas to understand or solve mathematical problems.</p> <p>CO 4. Explaining the meaning or definition of terms and the intent of the theorems or properties in mathematics</p> <p>CO 5. Using related definitions and theorems to prove other properties or theorems.</p>
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Content:	<p>This course discusses about an introduction to complex numbers, complex variables functions, elementary functions, and integral of complex functions. Firstly, we introduce the complex number system, complex number operations (sums, products, moduli, exponential form, powers, arguments, and roots), and regions in the complex number. Secondly, we discuss the topics in functions of complex variable, such as; its' definition, mappings, limit, continuity, derivatives, Cauchy-Riemann equations, analytic functions, harmonic functions, and reflection principle. Finally, the discussion on elementary functions and its derivatives, this section contains the exponential function, the logarithmic function, trigonometric, hyperbolic, and inverse of trigonometric and hyperbolic functions. And, at the end of the course we discussed the integrals of complex functions on simply connected domains, multiply connected domains, and also the formula of integral named Cauchy integral.</p>
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Study/exam achievements:	<p>CO1: Attitude assessment is carried out at each meeting using observation and / or self-assessment techniques by the assumption that every student is good. The student will be given a value as very good or not good if he/she shows, significantly, excellent or poor attitude. The results of attitude assessment used as one of the graduation requirements.</p> <p>The final grades will be weight as follow:</p>
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No	CO	Objek Penilaian	Teknik Penilaian	Bobot
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	1	CO 2 and 4	a. Presentation b. Individual Assignment c. Quiz	Observation Written Written	10% 10% 20%
	2	CO 3 and 5	a. Group Assignment b. Mid test c. Final test	Written	10% 20% 30%
Total					100%
Forms of media:	Board, LCD Projector, Laptop/Computer				
Literature:	<ol style="list-style-type: none"> 1. Brown, J.W. and Churchill, R.V. 2004. <i>Complex variables and Applications. Eighth edition.</i> New York: The Mc Graw-Hill Companies, Inc. 2. Paliouras, D. 1987. <i>Peubah Kompleks untuk Ilmuwan dan Insinyur</i> (terjemahan Wibisono Gunawan). Jakarta: Erlangga. 3. Murray R. Spiegel. 1988. <i>Complex Variables.</i> Schaum's Outline series. Mc Graw-Hill Company. 				

PLO and CO mapping

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