Undergraduate Programme in Mathematics

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MODULE HANDBOOK

Module name	Function of Complex Variables II
Module level, if applicable	Bachelor
Code, if applicable	MMM-3106
Subtitle, if applicable	-
Courses, if applicable	Function of Complex Variables II
Semester(s) in which the module is taught	5th (fifth)
Person responsible for the module	Chair of the Lab. of Analysis
Lecturer(s)	Prof. Dr. Supama, M.Si. Drs. Yusuf, M.A.
Language	Bahasa Indonesia
Relation to curriculum	Compulsory course in the third year (5th semester) Bachelor Degree
Type of teaching, contact hours	100 minutes lectures and 120 minutes structured activities per week.
Workload	Total workload is 90.67 hours per semester, which consists of 100 minutes lectures per week for 14 weeks, 120 minutes structured activities per week, 120 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points	2
Requirements according to the examination regulations	Students have taken Function of Complex Variables II course (MMM-3106) and have an examination card where the course is stated on.
Recommended prerequisites	Students have taken Function of Complex Variables I (MMM-2112) and have participated in the final examination of the course.
Module objectives/intended learning outcomes	After completing this course, the students have ability to: CO 1. generalize the concept of integral in complex system. CO 2. generalize the concept of series in complex system. CO 3. Apply the theorem of residue.
Content	• Complex integral: definition of antiderivative, formula of Cauchy integral, maximum modulus principle, Liouville's theorem. • Series: convergence of sequences and series, Taylor and Mac Laurin series, Laurent series, absolute and uniform convergence, integration and differentiation of power series, singularity of representation of series, multiplication and division of power series. • Residues and poles: residue, theorem of residue, main part of function, residue at pole, zeros and poles level m, improper integral, definite integrals involving sines and cosines function, integration along a branch cut, inverse Laplace Transforms, logarithmic residue, Rouche's theorem.
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	White-board, Laptop, LCD Projeector
Reading List	James Ward Brown and Ruel V. Churchill, R, 2004, *Complex Variable and Applications,* 8th Edition, McGraw-Hill.

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	v
CO 3			v			v	v	v	v