Undergraduate Programme in Statistics

Telp   : +62 274 552243
Email   : stat.fmipa@ugm.ac.id; kaprodi-s1-statistika.mipa@ugm.ac.id
            sekprodi-s1-statistika.mipa@ugm.ac.id
Website : http://s1stat.fmipa.ugm.ac.id/

MODULE HANDBOOK

Module name	Advanced Calculus
Module level, if applicable	Bachelor
Code, if applicable	MMM-2111
Subtitle, if applicable	-
Courses, if applicable	Advanced Calculus
Semester(s) in which the module is taught	4th (fourth)
Person responsible for the module	Chair of the Lab. of Analysis
Lecturer	Drs. Yusuf, M.A.
Language	Indonesia
Relation to curriculum	Compulsary course in the second year (4th semester) Bachelor Degree
Type of teaching, contact hours	100 minutes lectures and 120 minutes structured activities (homework and task) 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 Advanced Calculus course (MMM-2111) and have an examination card where the course is stated on.
Recommended prerequisites	Students have taken Calculus II course (MMM-1102) and have participated in the final examination of the course.
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. have ability to investigate the divergence or convergence of real number series. CO 2. have ability to determine the convergence interval of power series. CO 3. have ability to identify the Riemann integrability of a function according to definition and its properties. CO 4. have ability to determine the primitive of Riemann integrable function and its properties. CO 5. have ability to prove some basic properties of the gamma and beta functions.
Content	Series: definition, algebra operation, convergence, series with positive terms, convergence tests, radius of convergence, absolute convergence and conditional convergence, alternating series, rearrangement of series terms. Riemann integral: partition, length of partition, upper and lower Riemann integral, Riemann integral and its properties, Darboux integral, primitive of Riemann integrable function and its properties, integral as upper bound function. Gamma and Beta functions.
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 Projector	
Reading List	1. Angus E. Taylor, 1989, *Advanced Calculus*, Blaisdell. 2. Robert G. Bartle and Donald R. Sherbert, 2011, *Introduction to Real Analysis*, 4th Edition, John Wiley and Sons. 3. William R. Parzynski, and Philip W. Zipse, 1982, *Introduction to Mathematical Analysis*, McGraw-Hill Book Company, New York.	

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1									
CO 2									
CO 3									
CO 4									
CO 5									