

BACHELOR PROGRAM : COMPULSORY COURSES

MA1101 Mathematics IA

Module designation	Mathematics IA
Semester(s) in which the module is taught	1 st Semester (first year of undergraduate program)
Person responsible for the module	Rizal Afgani, S.Si., M.Si., Ph.D.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	Lecture and Tutorial
Workload (incl. contact hours, self-study hours)	Total workload: around 12 hours per week x 16 weeks = 192 hours • Contact hours: 4 hours x 16 weeks = 64 hours • Tutorial: 4 hours x 16 weeks = 64 hours • Self-study hours: 4 hours x 16 weeks = 64 hours
Credit points	4 CU/6.67 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	- Fundamental technical skills with appropriate concepts, formulas, methods, and reasoning - Critical, logical, and systematic thinking patterns and creativity in solving problems related to Mathematics - Ability to communicate the results of his thoughts and work both orally and in writing - Ability to study other subjects, which require mathematics as a prerequisite independently
Content	- Calculus primarily for students in the School of Architecture, Planning, and Policy Development - Illustrate a great deal of the mathematics in the course with urban planning and design and regional planning problems. - Introduction to the notion of functions and limit - Derivatives and integrals - Transcendental functions, and technique of integrations - Ideas, techniques, and applications of calculus to urban planning and design, as well as regional planning
Examination forms	Quiz, Midterm Exam 1, Midterm Exam 2, Final Exam, and assignment
Study and examination requirements	Quiz and assignment(s): 10% Midterms exam 1: 20% Midterms exam 2: 25% Final Exam: 45%
Reading list	1. Thomas, Calculus, Pearson Education, 2010, 12th ed. (Pustaka Utama) 2. James Stewart, Calculus, Brooks/Cole Publishing Company, 1999, 4th ed. 3. Dale Varberg, Edwin Purcel and Steve Rigdon, Calculus, Prentice Hall, 2007, 9th ed.