



Module Description

Module name	Basic Mathematics II
Module level, if applicable	Bachelor of Informatics
Code, if applicable	18Y01110303
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	2 nd
Person responsible for the module	Andi Kresna Jaya
Lecturer	<ol style="list-style-type: none"> 1. Andi Muh. Amil Siddik., S.Si., M.Si 2. Ainun Mawaddah Abdal., S.Si., M.Si 3. A. Galsan Mahie., S.Si., M.Si
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a compulsory course and offered in the 2 nd semester.
Type of teaching, contact hours	Teaching methods: [problem-based learning]. Teaching forms: [lecture], [tutorial] CH : 08.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136.00 hours in one semester, which consist of: <ul style="list-style-type: none"> - 40.00 hours for lecture, - 48.00 hours for structured assignments, - 48.00 hours for private study
Credit points	3 credit points (equivalent with 5.1 ECTS)
Requirements	Students have participated in at least 80% of the learning activities



<p>according to the examination regulations</p>	<p>(Academic Regulations, Chapter VII)</p>
<p>Recommended prerequisites</p>	<p>Basic Mathematics I</p>
<p>Module objectives/intended learning outcomes</p>	<p>After completing the course, Students are able:</p> <p>Intended Learning Outcomes (ILO):</p> <p>ILO 1 : Have the knowledge of fundamental in Computing Science that includes basic theory and concepts of computer science, Mathematics and Statistics, Programming Algorithm, Software Engineering, Information Management and Digital Resilience, also the advance topics of either Artificial Intelligence, Data Science, Computer Network, Cloud Computing or Internet of Things.</p> <p>[ILO 1] - K</p> <p>Course Learning Objective (CLO):</p> <p>After attending the Basic Mathematics II Course, students will have the ability to analyze problems and solve them by controlling the results of mathematical calculations involving functions with many variables.</p> <p>Sub CLO :</p> <p>ILO 1 → CLO 1 : Understand the basic concepts of multivariable calculus, stochastic matrix theory and differential equations.</p> <p>ILO 1 → CLO 2 : Solve problems on limits and derivatives of multiple variable functions, double integrals and triple integrals.</p> <p>ILO 1 → CLO 3 : Solve problems on systems of linear equations and first-order differential equations.</p>
<p>Content</p>	<p>Students will learn about :</p> <ol style="list-style-type: none"> 1. Functions of two or more variables 2. Limit and continuity of multiple variable functions 3. Partial Derivatives and Directed Derivatives 4. Taylor Series and Extreme Value of a Function 5. Double Integral and Triple Integral 6. Introduction to Matrix Theory 7. Systems of Linear Equations



	8. Differential Equation
Forms of Assessment	<p>Assessment techniques: [participation], [written test].</p> <p>Assessment forms: [midterm exam], [final term exam], [assignment].</p> <p>ILO 1 CLO 1 → 25% (Midterm Exam: written test) CLO 2 → 25% (assignment1: participation) CLO 2 → 10% (assignment2: participation) CLO 3 → 40% (Final Term Exam: written test)</p>
Study and examination requirements and forms of examination	<p>Study and examination requirements:</p> <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get a final grade. <p>Form of examination: Written exam: Essay</p>
Media employed	Video conference, Slide Presentation, Learning Management System (LMS).
Reading list	<p>Main :</p> <ol style="list-style-type: none"> 1. James Stewart, “Calculus Early Transcendentals”, sixth edition, Thomson Brooks/Cole, 2008. 2. Dale Varberg, Edwin Purcell, and Steve Rigdon, “Calculus”, ninth edition, Pearson, 2006. 3. Howard Anton, Chris Rorres, “Elementary Linear Algebra, Applications version”, eleventh edition, Wiley, 2013. 4. Tim Dosen Matematika, “Matematika Dasar 2”, 2018