



UNIVERSITAS MATARAM
(University of Mataram)
FAKULTAS TEKNIK
(Faculty of Engineering)
PROGRAM STUDI TEKNIK INFORMATIKA
(Department of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Calculus (W22U11)

Module designation	Calculus
Semester(s) in which the module is taught	<i>1 / First year</i>
Person responsible for the module	<i>Lecturer from UNIVERSITY</i>
Language	<i>Indonesian</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>Lectures and Discussions</i>
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation <ul style="list-style-type: none"> ● 3 x 50 minutes lecturer/week ● 3 x 60 minutes class exercise/week ● Self Study hours = 180 minutes/week Total workload 510 minutes/week
Credit points	<i>3 (~ 4,8 ECTS)</i>
Required and recommended prerequisites for joining the module	-

<p>Module objectives/intended learning outcomes</p>	<p>Students gain knowledge and learning experiences to increase understanding of calculus, which aims to provide knowledge related to the basics of calculus required at the undergraduate level of the Informatics Engineering study program. With this course, students are generally expected to understand the concept of derivative and integral functions of one variable and their application in problems related to the field of Informatics Engineering. intended learning outcomes of the calculus are Students are able to:</p> <ol style="list-style-type: none"> 1. explain and solve real number systems, equations, inequalities, and absolute values. 2. to solve problems about composition and inverse functions. 3. explain the exact concept of the limit and continuity of a function, as well as the relationship between the two 4. explain the meaning of derivative as a limit function, derivative relationship and continuity, as well as various derivative functions 5. understand the meaning of indefinite integral and definite integral and solve different kinds of integral problems, both indeterminate and definite.
<p>Content</p>	<p>This course provides students with knowledge learning experiences on:</p> <ol style="list-style-type: none"> 1. Real number system, Equation, Inequality, Value 2. Absolute, Compositional and Inverse Functions 3. Function Limits (Formally, Infinite Limit, Limit 4. Trigonometry, and Exponential Limits) 5. Continuity 6. Derivative 7. Mid-Semester Evaluation (MSE) 8. Function Derivatives and Application of Derivatives 9. Indeterminate Integral and Integration Technique 10. The definite integral and its application 11. Quiz and Material Evaluation 12. Final Semester Evaluation (FSE)
<p>Examination forms</p>	<p><i>Assignments, Quiz, Report and Oral Presentation</i></p>
<p>Study and examination requirements</p>	<p><i>Assignments 15%, Quiz 25%, MSE 30%, FSE 30%</i></p>

Reading list	<ol style="list-style-type: none">1. Ayres, Frank Jr. (1972), Theory and Problem of Differential and Integral Calculus. New York: Mc Graw Hill.2. Purcell, Edwin J., dan Varberg, Dale, (Terjemahan), (1994). Kalkulus dan Geometri Analitis, Edisi Kelima, Jakarta: Penerbit Erlangga3. Thomas, G.B dan Ross L. Finney (1996). Calculus and Analytic Geometry (9th ed.). USA: Addison-Wesley Publishing Company.4. Thomas, George B. Jr. (1977), Calculus and Analytic Geometry. USA: Addison-Wesley Publishers Company.5. Varberg, D., Purcell, E., and Rigdon, S. (2007). Calculus. (Ninth Edition). USA : Pearson.
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