

Module Handbook (Description of Course Unit)

Course designation	Multivariable Calculus
Semester(s) in which the Course is taught	3rd (third)
Person responsible for the Course	Lisanul Uswah Sadieda
Language	Indonesian Language
Relation to curriculum	Compulsory
Teaching methods	Lecture (L), Group Discussion (GD), Tutorials (T)
Workload (incl. contact hours, self-study hours)	Total workload: 119 Hours in Class, specified in hours: 35 (Lecture) Private study including examination preparation, specified in hours: 84
Credit points	3 CP / 4.8 ECTS
Required and recommended prerequisites for joining the Course	1. Differential Calculus 2. Integral Calculus
Course objectives/intended learning outcomes	The students demonstrate the ability to think logically, critically, systematically, be innovative in finding solutions related to multivariable functions, and be honest and responsible for problem solving. The students are able to independently reflect on their mastery of the basic concepts of multivariable functions and to use the concepts of function of two variables, vector function, fold integral and calculus vector to solve problems.

Content	<p>Multivariable Calculus discusses and facilitates the development of students' knowledge and skills in using:</p> <ul style="list-style-type: none"> ● multivariable functions: limit and continuity, partial derivatives, chain rule, directional derivatives, gradient vector, maximum and minimum values, ● vector function: vector function and space curves, integral of vector function, velocity and acceleration, ● fold integral: double integral, repeated integration, double integral in polar coordinate, three-fold integral with cylindrical and ball coordinate, ● vector calculus: vector field, line integral, Green, Curl, Stokes, and divergence theorems and surface integral.
Examination forms	<ul style="list-style-type: none"> ● Final examination: Paper Based Exam (120 min) ● Mid-term examination: (Paper Based Exam (120 min) ● Assignment : Paper Based Exam (1 week).
Study and examination requirements	<p>Requirements for successfully passing the Course:</p> <ul style="list-style-type: none"> ● Performance 10% ● Assignments 30% ● Mid-term examination 20% ● Final examination 40% <p>The minimum grade to pass the course is C (61).</p>
Reading list	<ol style="list-style-type: none"> 1. Budhi, W.S. 2001. <i>Kalkulus Peubah Banyak dan Penggunaannya</i>. Bandung: ITB. 2. Handali, D. & Pamuntjak, R.J. 2004. <i>Kalkulus Perubah Banyak</i>. Bandung: ITB. 3. Gunawan, G. & Fajar, M.Y. 2015. <i>Kalkulus Peubah Banyak</i>. Yogyakarta: Graha Ilmu. 4. Stewart, J. 2001. <i>Kalkulus</i>. Jilid 2. Jakarta: Erlangga.