



UNIVERSITAS NEGERI PADANG
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 MATHEMATICS DEPARTMENT, MATHEMATICS EDUCATION STUDY PROGRAM
 Main Campus Universitas Negeri Padang.
 Jalan Prof. Dr. Hamka Air Tawar Padang, Sumatera Barat
 Phone: +62 751 7053902, Fax: +62 751 7055628
 Email: matematika@fmipa.unp.ac.id

Bachelor of Mathematics Education

MODULE HANDBOOK

Module name:	Vector Calculus
Module level, if applicable:	Bachelor
Code:	MAT1.61.4303
Sub-heading, if applicable:	-
Classes, if applicable:	Vector Calculus
Semester:	4 th (Fourth)
Module coordinator:	Dr. Yerizon, M.Si.
Lecturer(s):	Dr. Yerizon, M.Si., and Team
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Study Program Compulsory Course
Teaching format / class hours per week during the semester:	<p>Teaching format:</p> <ul style="list-style-type: none"> ● Lectures by Problem Based Learning with method such as Explanation, Group and Class Discussion. ● Structured Assignment, ● Independent Activities. <p>4 x 170 minutes = 680 minutes = 11.33 hours.</p>
Workload:	<p>16 weeks per semester include Midterm Exam and final exam which consist of:</p> <ul style="list-style-type: none"> ● 3.33 hours lectures (4 x 50 minutes) per week, ● 4 hours structured assignments (4x 60 minutes) per week, ● 4 hours Independent activities (4 x 60 minutes) per week <p>16 x 170 x 4 = 10880 minute = 181.33 hours = 6.04 ECTS</p>
Credit points:	4 SKS (6.04 ECTS)
Prerequisites course(s):	-
Course outcomes:	<p>After taking this course the students have ability to:</p> <p>CO 1 : Explain the concept of vector in plane and space and mentioning the types of vectors and their properties</p>

	<p>CO 2 :Apply the concept of vector in plane and space and mention the types of vectors and their properties</p> <p>CO 3: Analyze the problems that connect to the concept of vector in plane and spaces and mention the types of vectors and their properties</p> <p>CO 4: Show responsibility attitude towards works by self and by team works.</p>
Content:	<p>This course discusses:</p> <ol style="list-style-type: none"> 1. Vectors in plane and space, 2. Vector-valued functions, 3. Vectors in three-dimensional space, 4. Surfaces in three-dimensional space, 5. Functions with two or more variables, 6. Partial derivatives, 7. Limits and continuity, 8. Directed derivatives and gradients, chain rules, the Lagrange method, integral, vector field, line integral, Green's theorem of plane, surface integral, Gauss divergence theorem, Stokes's theorem.
Study/exam achievements:	<p>Total score = (25% x Midterm Exam Score) + (25% x Final Exam Score) + (20% x Assignments) + (20% x project score) + (10% x Affective (Responsibility, class attendance) Score)</p> <p>The initial cut - off points for grades A, A-, B+, B, B-, C+, C, C-, and D should not be less than 85, 80, 75, 70, 65, 60, 55, 50, and 40 out of 100 respectively.</p> <p>Explanation:</p> <p>1. Midterm Exam</p> <ul style="list-style-type: none"> ✓ Midterm Exam is held at the 9th meeting in the form of an essay test. ✓ Midterm Exam is carried out in the classroom with an implementation time of 120 minutes according to the module schedule <p>2. Final Exam</p> <ul style="list-style-type: none"> ✓ Final Exam is held at the 16th meeting in the form of an essay test ✓ Final Exam is carried out in the classroom with an implementation time of 120 minutes which follows the Final Exam implementation schedule of the department <p>3. Assignment</p> <ul style="list-style-type: none"> ✓ Assignments are given as exercise before Midterm Exam and before Final Exam ✓ Assignments are about analyzing problem in daily life and solve it with the concept of the content in vector calculus. ✓ Assignments are given as individual task and it is submitted in limited time. <p>4. Project Assignment</p> <ul style="list-style-type: none"> ✓ Project is given one time in one semester, in week thirteen while the explanation about the project

