



UNIVERSITAS NEGERI PADANG
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 MATHEMATICS DEPARTMENT, MATHEMATICS EDUCATION STUDY PROGRAM
 Main Campus Universitas Negeri Padang.
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Bachelor of Mathematics Education

MODULE HANDBOOK

Module name:	Calculus
Module level, if applicable:	Bachelor
Code:	FMA1.60.1302
Subheading, if applicable:	-
Classes, if applicable:	Calculus
Semester:	1 st (first)
Module coordinator:	Drs. Mukhni, M. Pd.
Lecturer(s):	Drs. Mukhni, M. Pd., and Team
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Faculty Compulsory Course
Teaching format / class hours per week during the semester:	Teaching format: <ul style="list-style-type: none"> ● Lectures (face to face activities): Problem Based Learning with Explanation, Group and Class Discussion method. ● Structured assignment ● Independent activities 4 x 170 minutes = 680 minutes = 11.33 hours
Workload:	16 weeks per semester include Midterm Exam and Final Exam which consist of: <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 16 x 170 x 4 = 10880 minutes = 181.33 hours = 6.04 ECTS
Credit points:	4 SKS (6.04 ECTS)
Prerequisites course(s):	-
Course outcomes:	After taking this course, the students have ability to: <ul style="list-style-type: none"> CO1 : Interpret inequality, function, limit, derivative and integral concepts CO2 : Apply inequality, function, limit, derivative and integral concepts in solving mathematical problems CO 3 : Analyze problems related to the concept of functions, limits, derivatives and integrals. CO 4 : Show a responsible attitude towards work by self and by team work.
Content:	This course discusses: <ol style="list-style-type: none"> 1. real number system

	<ol style="list-style-type: none"> 2. absolute inequality and inequality 3. function 4. function operation 5. largest integer function, absolute value function, limit and continuity 6. the definition of derivative, the rule specifies the derivative, high-level derivative, implicit derivative 7. the rate relates and matters the maximum and minimum values, to draw a graph 8. the Riemann integral, the transcendent function, is defined as calculating the integral value using the basic theorem of calculus 9. determine the integral of the function with the integration technique 10. determine the limit with the L'hospital's rule and the integral is fair and the application of the integral in real problems
Study/exam achievements:	<p>Total Score = (30% x Midterm Exam Score) + (35% x Final Exam Score) + (25% x Assignment: project, HOTS exercise, Maple software simulations) + (10% x Affective Score: Responsibility, class attendance)</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> <ol style="list-style-type: none"> 1. Midterm Exam <ul style="list-style-type: none"> ✓ Midterm Exam will be conducted in the 9th meeting ✓ Midterm Exam is in the form of a written test (essay) and will be conducted in the classroom ✓ The time allocation is 120 minutes according to the module schedule 2. Final Exam <ul style="list-style-type: none"> ✓ Final Exam will be conducted in the 16th meeting. ✓ Final Exam is in the form of a written test (essay) and will be conducted in the classroom. ✓ The time allocation is 120 minutes which follows the Final Exam schedule provided by the Department. 3. Assignments <ul style="list-style-type: none"> ✓ Assignments are given as exercise before Midterm Exam and before Final Exam ✓ Assignments are about analyzing problems in daily life and solving them with the concept of the content in advance calculus. ✓ Assignments are given as individual tasks and it is submitted in a limited time. 4. Affective Assessment <ul style="list-style-type: none"> ✓ Affective assessment is held in every meeting by observing students' attitude in the classroom and daily interaction at campus such as punctuality, responsibility etc. ✓ The assessment is based on an observation sheet and it is given a score by affective rubric assessment.
Forms of media:	Board and LCD Projector
	1. Thomas. (2017). Calculus 14th ed., Pearson.

Literature:	<ol style="list-style-type: none"> 2. Stewart, J. (2015). <i>Calculus</i>. Cengage Learning. 3. Varberg, D., Rigdon, S., Purcell, E. (2013). <i>Calculus: Pearson New International Edition PDF EBook</i>. United Kingdom: Pearson Education. 4. Larson, R., & Edwards, B. H. (2013). <i>Calculus</i>. Cengage Learning. 5. Boyer, C. B. (2012). <i>The History of Calculus and Its Conceptual Development</i>. United States: Dover Publications. 6. Courant, R., & John, F. (2012). <i>Introduction to calculus and analysis I</i>. Springer Science & Business Media.
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PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11
CO1	✓										
CO2	✓										
CO3	✓										
CO4										✓	