<table>
<tr><td>Module designation</td><td>Differential Calculus
Indonesian title: Kalkulus Diferensial
Course code: 8420203004</td></tr>
<tr><td>Semester(s) in which the module is taught</td><td>Semester 1 (First year)</td></tr>
<tr><td>Person responsible for the module</td><td>Coordinator: Dr. Abdul Haris Rosyidi, M.Pd
Teaching staff: Prof. Dr. Masriyah, M.Pd; Dr. Abdul Haris Rosyidi, M.Pd; Rudianto Artiono, S.Pd, M.Si; Ika Kurniasari, M.Pd; Novita Vindri Harini, M.Pd; Dr. Sugihartono, M.Pd</td></tr>
<tr><td>Language</td><td>Indonesian</td></tr>
<tr><td>Relation to curriculum</td><td>Compulsory</td></tr>
<tr><td>Teaching methods</td><td>Lectures, tutorial assignments, and individual study
Media and tools: Slides and LCD projectors, whiteboard</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>(Estimated) total workload: 3 CU × 170 minutes × 16 weeks = 8,160 minutes = 136.00 hours (≈ 4.77 ECTS)
Contact hours: lectures, 3 × 50 minutes per week × 16 weeks = 40.00 hours (class hours per week: 510 minutes = 8.50 hours, including structured activities)
Private study including examination preparation: structured assignments, 3 × 60 minutes per week × 16 weeks = 48.00 hours; independent study, 3 × 60 minutes per week × 16 weeks = 48.00 hours (total 96.00 hours)</td></tr>
<tr><td>Credit points</td><td>3 CU (4.77 ECTS)
1 CU = 170 minutes per week × 16 weeks = 45.3 hours; 1 ECTS = 28.48 hours (144 CU = 229 ECTS), so 1 CU = 1.59 ECTS (UNESA Rector's Decree No. 736/HK/KM/2023).</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>None</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>Programme learning outcomes (PLO) addressed:
PLO-5: Apply the basic principles of mathematics to solve simple mathematical problems.
PLO-6: Demonstrate mathematical knowledge and insight.</td></tr>
<tr><td>Content</td><td>Studying the real number system, real functions, limits and continuity, derivatives of a real function and their uses, transcendent functions and their derivatives, limits of improper forms, Taylor and Maclaurin series, applying these concepts to the problem of determining the asymptotes of function graphs, optimization problems and determining the approximation of a function at a point</td></tr>
<tr><td>Examination forms</td><td>Final score is calculated from the weekly assessment scheme below (CLO/PLO addressed and weight of each assessment):
<table>
<tr><th>Week</th><th>CLO</th><th>PLO</th><th>Weight (%)</th></tr>
<tr><td>1</td><td>CLO-1</td><td>PLO-6</td><td>5</td></tr>
<tr><td>2</td><td>CLO-2</td><td>PLO-5</td><td>5</td></tr>
<tr><td>3</td><td>CLO-2</td><td>PLO-5</td><td>3</td></tr>
<tr><td>4</td><td>CLO-3</td><td>PLO-5</td><td>10</td></tr>
<tr><td>5</td><td>CLO-4</td><td>PLO-5</td><td>5</td></tr>
<tr><td>6</td><td>CLO-4</td><td>PLO-5</td><td>5</td></tr>
</table></td></tr>
</table>

	7	CLO-5	PLO-6	10
	8	CLO-6	PLO-6	5
	9	CLO-6	PLO-6	5
	10	CLO-6	PLO-6	10
	11	CLO-7	PLO-6	5
	12	CLO-7	PLO-6	5
	13	CLO-7	PLO-6	10
	14	CLO-10	PLO-5	5
	15	CLO-8	PLO-5	10
	16	CLO-9	PLO-5	2

Study and examination requirements

Students are considered competent and pass if the final score is at least 55 or C.

Final index (grade conversion):

Index	Converted score	Score range (A = final score)
A	4.00	85 ≤ A ≤ 100
A-	3.75	80 ≤ A < 85
B+	3.50	75 ≤ A < 80
B	3.00	70 ≤ A < 75
B-	2.75	65 ≤ A < 70
C+	2.50	60 ≤ A < 65
C	2.00	55 ≤ A < 60
D	1.00	40 ≤ A < 55
E	0.00	0 ≤ A < 40

Reading list

1. Thomas Jr., G. B., Hass, J., Heil C., & Weir, M.D., et.al. 2018. Thomas, Calculus 14th Edition (Revised) . Boston: Pearson
2. Purcell, E.J., Varberg, D., and Rigdon, S.E. 2007 . Calculus 9th Edition . Ontario: Pearson, Prentice Hall
3. Stewart, J. 2020. Calculus: Early Transcendental 9th Edition. Boston: Cengage Learning
4. Adams, R. A. 2017. Calculus: A Complete Course, 9th Edition. Ontario: Pearson
5. Abadi & Wintarti, A. 2014 (in press). Kalkulus, Buku 1. Surabaya
6. Moesono, D. 1994. Kalkulus I (Edisi Revisi). Surabaya: University Press Surabaya