MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCE
UNDERGRADUATE PROGRAM OF MATHEMATICS
Ketintang Campus, C8-C9 Buildings of FMIPA, Surabaya
Email: s1-mat@unesa.ac.id

Module Handbook

Module Name :	*Kalkulus Diferensial* Differential Calculus
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420104051
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	1st/ first year
Module coordinator(s)	M. Jakfar, M.Si
Lecturer(s):	Prof. Manuharawati, M.Si Dr. Abadi, M.Sc Dimas Avian Maulana, M.Si
Language:	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum:	Compulsory/ ~~Elective~~
Teaching format/class hours per week during the semester:	4 contact hours of lectures (*sks* or credit unit*)
Workload :	4 x 50 minutes lectures, 4 x 60 minutes structured activity, and 4 x 60 minutes individual activity per week, 14 weeks per semester 158.66 total hours per semester ~ 6.36 ECTS**
Credit Unit:	4 credit unit (6.36 ECTS)
Requirements:	None

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Learning goals/competencies:	**Knowledge (KNO-1:** Demonstrating mathematical knowledge and mathematical insight.**)**
	CLO-1: Able to demonstrate mastery of concepts related to the real number system, real functions, limits and continuity, derivatives of a real function, transcendent functions and their derivatives, limits of indefinite forms, Taylor series and Maclaurin series
	Skill (SKI-1: Formulating and solving fundamental mathematical problems**)**
	CLO-2: 2. Able to formulate and solve fundamental mathematical problems related to the real number system, real functions, limits and continuity, derivatives of a real function, transcendent functions and their derivatives, limits of indefinite forms, Taylor series and Maclaurin series
	Skill (SKI-2: Applying the basic principles of mathematics to solve simple* mathematical problems**)**
	CLO-3: 3. Able to use the solution method in solving mathematical problems related to the real number system, real functions, limits and continuity, derivatives of a real function, transcendent functions and their derivatives, limits of indefinite form, Taylor series and Maclaurin series
	Competences (COM-2: Generating ideas used for completing mathematical tasks and to communicate them either in writing or orally, in accordance with scientific principles)
	CLO-4: Generalizes the ideas used for solving tasks related to the concept of the real number system, real functions, limits and continuity, derivatives of a real function, transcendent functions and their derivatives, limits of indefinite forms, Taylor series and Maclaurin series and is able to communicate orally or in writing
Content	This course discusses about Real number systems, real functions, limits and continuities, derivatives of real functions, transcendent functions and their derivatives, limits of indefinite form, Taylor and MacLaurin series, minimum-maximum problem

Attribute Soft skill:	Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class

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Study/exam achievements:	The final grade (*NA*) is calculated based on the following ratio:

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Assessment Components	Percentage of contribution
Participation	20%
Assignment	30%
Mid-semester test	20%
Final semester test	30%

Grade conversion of 0-100 scale into 0-4 scale is set as below:

Letter	Number	Grade Interval
A	4,00	$85 \leq A \leq 100$
A-	3,75	$80 \leq A- < 85$
B+	3,50	$75 \leq B+ < 80$
B	3,00	$70 \leq B < 75$
B-	2,75	$65 \leq B- < 70$
C+	2,50	$60 \leq C+ < 65$
C	2,00	$55 \leq C < 60$
D	1,00	$40 \leq D < 55$
E	0,00	$0 \leq E < 40$

Learning Methods :	Student-centered approach; project-based learning; lecturer and discussion; and presentations (structured activities). Skills or competence learning outcomes can be achieved by practicum activity
Form of Media:	Power point slides; video; worksheets, and textbooks

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Literature (primary references):	1. Thomas Jr., G., et. al. 2018. Thomas' Calculus 14th Edition. Boston: Addison-Wesley 2. Stewart, J. 2016. Calculus: Early Transcendental 8th Edition. Belmont: Brooks/Cole 3. Purcell, E. J. et al. 2010. Kalkulus Jilid 1 Edisi Kedelapan (Terjemahan). Jakarta: Erlangga 4. Abadi, & Wintarti, A. 2014 (in press). Kalkulus, Buku 1. Surabaya 5. Moesono, D. 1994. Kalkulus I (Edisi Revisi). Surabaya: University Press Surabaya. 6. Tim Dosen Kalkulus Diferensial. 2015. Modul Praktikum Kalkulus Diferensial (in press). Surabaya
Notes:	*1 credit unit or *sks* in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.
	**1 credit unit or *sks* = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019