



Module Description Calculus

Module designation	Calculus
Module code	23G03110102
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module (lecturers)	Sri Astuti Thamrin, S.Si., M.Stat., Ph. D
Language	Indonesian language
Relation to curriculum	Compulsory
Teaching methods	Lecture
Workload	Total workload (estimated): ❖ 27 hours of lecture ❖ 32 hours of exercise ❖ 32 hours of independent study
Credit points	2 credit points = 3.24 ECTS
Required and recommended prerequisites for joining the module	Basic Mathematics
Module objectives/ Intended Learning Outcomes (ILO)	ILO 5. Applies the principles of food science and technology, statistics, and computer science to implement good manufacturing practices in food industry management (C2)
	CLO 1. Explanation of calculus concepts, including: Introduction to Logic, Permutations and combinations, Transcendent Functions, Derivatives. CLO 2. Use of Derivatives, Integrals, and Use of Integrals, Linear and Nonlinear Equations, Systems of Linear Equations, Optimization
Content	❖ Polynomial Function ❖ Exponential function ❖ Trigonometric Function ❖ linear equation, linear inequality, drawing curves, linear optimization ❖ limit ❖ derivatives ❖ integral



Examination form	Writing (essay)																														
Study and examination requirements	Examination requirements: Attendance above 80% ❖ Individual tasks: 22.5% ❖ Quiz: 7.5% ❖ Midterm exam: 20% ❖ Case study: 50% Grading: <table><tr><th>Numerical range</th><th>Letter grade</th><th>Conversion value</th></tr><tr><td>85 - 100</td><td>A</td><td>4.00</td></tr><tr><td>80 - < 85</td><td>A-</td><td>3.75</td></tr><tr><td>75 - < 80</td><td>B+</td><td>3.50</td></tr><tr><td>70 - < 75</td><td>B</td><td>3.00</td></tr><tr><td>65 - < 70</td><td>B-</td><td>2.75</td></tr><tr><td>60 - < 65</td><td>C+</td><td>2.50</td></tr><tr><td>50 - < 60</td><td>C</td><td>2.00</td></tr><tr><td>40 - < 50</td><td>D</td><td>1.00</td></tr><tr><td>< 40</td><td>E</td><td>0.00</td></tr></table> <i>If student(s) receives(s) a score below 40, student(s) must retake the course</i>	Numerical range	Letter grade	Conversion value	85 - 100	A	4.00	80 - < 85	A-	3.75	75 - < 80	B+	3.50	70 - < 75	B	3.00	65 - < 70	B-	2.75	60 - < 65	C+	2.50	50 - < 60	C	2.00	40 - < 50	D	1.00	< 40	E	0.00
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50 - < 60	C	2.00																													
40 - < 50	D	1.00																													
< 40	E	0.00																													
Reading list	1. Stroud, K., A. 2001. Engineering Mathematics 5th Edition. Industrial Press, Inc., New York 2. Purcell., Varberg., Rigdon. 1997. Calculus. 3. Blank, B., E., Krantz, S., G. 2011. Calculus Single Variable. John Wiley & amp; Sons 4. Kuttler, K. 2011. Calculus, Applications and Theory Volume 1. World Scientific Publishing																														
Date of last amendment	10 August 2025																														