JAKARTA INTERNATIONAL UNIVERSITY

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SYLLABUS

Mata Kuliah **(Course)**	: College Math	Semester **(Semester)**	: Even	Program Studi **(Departement)**	: Information Technology
Kode Mata Kuliah **(Course Code)**	: JIU3210	SKS **(Credit)**	: 3	Dosen Pengampu **(Lecturer)**	: Dalyoung Jeong, Ph.D.

Deskripsi Mata Kuliah **(Course Description)**	1. We will study more theories of derivatives and integrations. Also, we study vectors and power series which are important in IT and engineering. The main topics are vectors, power series, partial derivatives, double integrals, parametric functions

Capaian Pembelajaran **(Learning Outcomes)**	1. Learn the applications of the derivatives 2. Learn how to deal with parametric functions and polar equations 3. Learn how to do partial derivation and double integrals 4. Learn how to use power series

Persentase Penilaian **(Grading Percentage)**	With grading percentage: • **Homework & Quiz (20%)** • **Mid Project (40%)** • **Final Exams (40%)**

Minggu **(Weeks)**	Kemampuan akhir yang diharapkan **(Learning Outcomes)**	Bahan Ajar **(Course Material)**	Bentuk Pembelajaran **(Learning Method)**	Kriteria Penilaian **(Grading Indicator)**
(1)	(2)	(3)	(4)	(5)
1	Application of derivatives - tangent lines - Maximum and Minimum	- Textbook	lecture	
2	Application of derivatives - Drawing graphs - Approximation	- Textbook	lecture	
3	Integration - definition of integration - Methods of integration	- Textbook	lecture	
4	Fundamental theorem of Calculus - Areas and Volumes	- Textbook	lecture	
5	More Derivatives and integrations - Implicit functions - Inverse of trigonometric functions - Ideal integration	- Textbook	lecture	
6	Applications of differentiation and Integration - Volumes and Areas	- Textbook	lecture	
7	Infinite series - Convergence tests - Ratio test, Root test - Alternating series	- Textbook	lecture	
8	Power series - Maclaurin series - Taylor series	-		Midterm Exam
9	Applications of power series - power series of trigonometric functions	- Textbook	lecture	

	- Applications			
10	Parametric functions - Derivatives - Length of parametric curves	- Textbook	lecture	
11	Polar coordinate system - Graphs of polar equations - Length of polar equations	- Textbook	lecture	
12	Partial derivatives - Multivariable functions - Limits and continuity - Partial derivation - Total derivation	- Textbook	lecture	
13	Partial derivatives - Chain rule - Directional derivatives - Maximum and minimum	- Textbook	lecture	
14	Double integral - Definitions - Calculation of double integral	- Textbook	lecture	
15	Applications of double integral - Area of surfaces - Volumes	- Textbook	lecture	
16	Review and Exam			Final Exam

Referensi **(Reference(s))**	1. Purcell, Edwin J., and Dale Varberg (1990), The Calculus with Analytic Geomerty, Fourth Edition, Prentice-Hall Inc; 2. Leithold, (1998), The Calculus with Analytic Geometry, Fifth Edition, Pepperdine University;

Acknowledeged by Department Coordinator:

Alfred Tenggono, S.Kom., M.Kom.