

Birzeit University
Mathematics Department
SYLLABUS
Second Semester 2024/2025
Course Code: MATH1321
Title: Calculus II
Coordinator: Dr. Ala Talahmeh

Textbook: Thomas G., M. Weir and J. Hass, Thomas' Calculus. Twelfth Edition, Addison-Wesley

Course Material-Chapters:

Chapter	Topics	Sections
Ch.10	Infinite Sequences and Series	1-10
Ch.11	Parametric Equations and Polar Coordinates	1-5
Ch.12	Vectors and the Geometry of Space	1-6

Grading Policy:

Quizzes	15%
Midterm Exam	40%
Final Exam	45%

Course Material-Sections:

Section	Section Title
	Chapter 10
10.1	Sequences
10.2	Infinite Series
10.3	Integral test
10.4	Comparison tests
10.5	Ratio, nth root test
10.6	Alternating series
10.7	Power series
10.8	Taylor series
10.9	Convergence of Taylor series
10.10	Binomial Series
	Chapter 11
11.1	Parameterization of Plane Curves
11.2	Calculus with Parametric Curves
11.3	Polar Coordinates
11.4	Graphing on Polar Coordinates
11.5	Area and Lengths in Polar Coordinates
	Chapter 12
12.1	Three Dimensional Coordinate System
12.2	Vectors
12.3	The Dot Product
12.4	The Cross Product
12.5	Lines and Planes in Space
12.6	Cylinders and Quadratic Surfaces in Space

Problems

Section	Lecture Problems	Discussion Problems
Chapter 10: Infinite Sequences and Series		
10.1	46, 59, 68, 84	6, 10, 22, 26, 31, 35, 36, 41, 44, 48, 50, 54, 58, 60, 63, 70, 72, 76, 82, 86, 92, 111
10.2	37, 51, 64, 75	6, 14, 18, 24, 32, 38, 44, 54, 62, 63, 78, 90
10.3	8, 26, 34	6, 13, 20, 22, 28, 32, 38, 40, 42
10.4	10, 22, 36, 46	8, 15, 18, 27, 28, 32, 40, 43, 52
10.5	6, 15, 20, 30	7, 12, 16, 20, 28, 38, 43, 46, 60
10.6	14, 19, 29	8, 13, 20, 25, 30, 39, 42, 50, 54
10.7	11, 24, 41	4, 12, 14, 23, 29, 32, 40, 46, 49
10.8	19, 30	3, 14, 20, 22, 27, 32, 37
10.9	22, 40	10, 12, 18, 28, 35, 37, 41
10.10	2, 25	10, 16, 26, 30, 33
Chapter 11: Parametric Equations and Polar Coordinates		
11.1	7, 13, 16	2, 6, 10, 14, 15, 18, 20, 22, 26
11.2	9, 15, 23	7, 14, 20, 22, 25, 27
11.3	24, 37, 60	1, 6, 7, 14, 16, 22, 26, 32, 38, 42, 52, 62
11.4	4, 7	1, 6, 8, 14, 19, 21, 28
11.5	5, 18	6, 9, 13, 16, 21, 23
Chapter 12: Vectors and the Geometry of Space		
12.1	13, 32, 34	8, 12, 14, 20, 26, 30, 36, 43, 56, 64, 65
12.2	14, 41	7, 10, 15, 18, 22, 25, 33, 40, 42
12.3	32, 37	5, 10, 17, 20, 31, 33, 45
12.4	17, 33	3, 16, 20, 23, 27, 34, 40, 45
12.5	10, 31, 45	2, 6, 9, 20, 22, 25, 28, 32, 35, 44, 46, 48, 54, 60, 62, 70
12.6		1-12