

Textbook:

Calculus: Early Transcendentals, Metric Edition, 9th Edition by James Stewart, Daniel Clegg, Saleem Watson

數位學習平台 <http://Cengage.com>

References:

1. Calculus: One and Several Variables 10th Edition by Saturnino Salas, Einar Hille, Garrett Etgen
2. Calculus: A Complete Course by Robert A. Adams

Eligibility: 機械系(丙班)、化工系(丙班)學生選讀

Prerequisite: 高中數學

Course Website: <http://www.math.ncku.edu.tw/~rchen/>

Chapter 10 Parametric Equations and Polar Coordinates	第一週 2/23, 2/25	10.1	Curves Defined by Parametric Equations
		10.2	Calculus with Parametric Curves
		10.3	Polar Coordinates
Chapter 11 Sequences, Series, and Power Series	第二週 3/2, 3/4	10.4	Calculus in Polar Coordinates
		11.2	Series
		11.3	The Integral Test and Estimates of Sums
	第三週 3/9, 3/11	11.4	The Comparison Tests
		11.5	Alternating Series and Absolute Convergence
		11.6	The Ratio and Root Tests
	第四週 3/16, 3/18	11.7	Strategy for Testing Series
		11.8	Power Series
		11.9	Representations of Functions as Power Series
	第五週 3/23, 3/25	11.10	Taylor and Maclaurin Series
11.11		Applications of Taylor Polynomials	
Chapter 17 Second-Order Differential Equations	第六週 3/30, 4/1	17.1	Second-Order Linear Equations
		17.1	Second-Order Linear Equations
		No class on Thursday	
	第七週 4/6, 4/8	No class on Tuesday	
		17.2	Nonhomogeneous Linear Equations
Chapter 13 The Geometry of Space and Vector Functions	第八週 4/13, 4/15	17.2	Nonhomogeneous Linear Equations
		13.1	Vector Functions and Space Curves
	13.2	Derivatives and Integrals of Vector Functions	
	第九週 4/20, 4/22	13.3	Arc Length and Curvature
		14.1	Functions of Several Variables

Chapter 14 Partial Derivatives		14.2	Limits and Continuity
	第十週 4/27, 4/29	14.3	Partial Derivatives
		14.4	Tangent Planes and Linear Approximation
		14.5	The Chain Rule
		14.6	Directional Derivatives and the Gradient Vector
		Midterm Exam 4/29 (Thursday) 19:10-21:00 pm, 範圍 Sec 10.1-11.11, 17.1-17.2, 13.1-13.3; 地點 數學系 3172, 3173, 3174 教室	
第十一週 5/4, 5/6	14.7	Maximum and Minimum Values	
	14.8	Lagrange Multipliers	
Chapter 15 Multiple Integrals	第十二週 5/11, 5/13	15.1	Double Integrals over Rectangles
		15.2	Double Integrals over General Regions
		15.3	Double Integrals in Polar Coordinates
	第十三週 5/18, 5/20	15.4	Applications of Double Integrals (skipped)
		15.5	Surface Area
		15.6	Triple Integrals
	第十四週 5/25, 5/27	15.7	Triple Integrals in Cylindrical Coordinates
15.8		Triple Integrals in Spherical Coordinates	
Chapter 16 Vector Calculus	第十五週 6/1, 6/3	15.9	Change of Variables in Multiple Integrals
		16.1	Vector Fields
		16.2	Line Integrals
	第十六週 6/8, 6/10	16.3	The Fundamental Theorem for Line Integrals
		16.4	Green's Theorem
		16.5	Curl and Divergence
	第十七週 6/15, 6/17	16.6	Parametric Surfaces and Their Areas
		16.7	Surface Integrals
16.8		Stokes' Theorem	
		16.9	The Divergence Theorem
	第十八週 6/22, 6/24	Final Exam 6/22 (Tuesday) 10:10-12:00, 範圍 Sec 14.1-16.9 (暫定); 地點 A1306, A1307 教室	

Grading

期中考	40%
作業	10%
小考及平時表現	10%
期末考	40%

Course Hours

1. Lecture : Tuesday 10:10-12:00; Thursday 9:10-10:00 in 三系館 A1307
2. Tutorial : Thursday 8:10-9:00 in 化工系館 93252, 93223, 93356

Contact with Teacher

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Contact with Tutors

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