

Textbook: Calculus 8th Edition Metric Version by James Stewart

References:

1. Calculus One and Several Variables 10th Edition by Satunino L. Salas
2. The Elements of real Analysis 2nd Edition by Robert G. Bartle

Chapter 1 Functions and Limits	第一週 9/10, 9/12	1.4	The Tangent and Velocity Problems	
		1.5	The Limit of a Function	
		1.7	The Precise Definition of a Limit	
		1.6	Calculating Limits Using the Limit Laws	
	第二週 9/17, 9/20	1.8	Continuity	
		3.4	Limits at Infinity; Horizontal Asymptotes	
Chapter 2 Derivatives	第三週 9/24, 9/26	2.1	Derivatives and Rates of Change	
		2.2	The Derivative as a Function	
		9/24 中秋節放假		
		2.3	Differentiation Formulas	
	第五週 10/8, 10/10	2.4	Derivatives of Trigonometric Functions	
		2.5	The Chain Rule	
		6.1	Inverse Functions	
		2.6	Implicit Differentiation	
	Chapter 3 Applications of Differentiation	第六週 10/15, 10/17	2.8	Related Rates
			10/10 放假	
第七週 10/22, 10/24		2.9	Linear Approximations and Differentials	
		3.1	Maximum and Minimum Values	
		3.2	The Mean Value Theorem	
		6.8	Indeterminate Forms and l'Hopital's Rule	
Chapter 4 Integrals		第八週 10/29, 10/31	3.3	How Derivatives Affect the Shape of a Graph
			3.5	Summary of Curve Sketching
	第九週 11/5, 11/7	3.7	Optimization Problems	
		3.9	Antiderivatives	
	Chapter 5 Applications of		4.1	Areas and Distances
			4.2	The Definite Integral
		4.3	The Fundamental Theorem of Calculus	
		Review		
		Midterm Exam 10/31 (Wednesday) 18:00-20:30, 考試範圍 Sec 1.4-3.7		
		4.4	Indefinite Integrals and the Net Change Theorem	
		4.5	The Substitution Rule	
		5.1	Areas Between Curves	
		5.2	Volume	

Integration	第十週 11/12, 11/14	5.3	Volumes by Cylindrical Shells
		5.5	Average Value of a Function
Chapter 6 Inverse Functions	第十一週 11/19, 11/21	6.2*	The Natural Logarithmic Function
		6.3*	The Natural Exponential Function
		6.4*	General Logarithmic and Exponential Functions
		6.5	Exponential Growth and Decay
		6.6	Inverse Trigonometric Functions
Chapter 7 Techniques of Integration	第十二週 11/26, 11/28	6.7	Hyperbolic Functions
		7.1	Integration by Parts
		7.2	Trigonometric Integrals
		7.3	Trigonometric Substitution
	第十三週 12/3, 12/5	7.4	Integration of Rational Functions by Partial Fractions
		7.5	Strategy for Integration
		7.8	Improper Integrals
	L1	Laplace Transform	
		Laplace Transform	
Chapter 8 Further Applications of Integration	第十四週 12/10, 12/12	8.1	Arc Length
Chapter 10 Parametric Equations and Polar Coordinates		10.1	Curves Defined by Parametric Equations
		10.2	Calculus with Parametric Curves
		10.3	Polar Coordinates
	第十五週 12/17, 12/19	10.4	Areas and Lengths in Polar Coordinates
Chapter 9 Differential Equations		9.1	Modeling with Differential Equations
		9.3	Separable Equations
		9.4	Models for Population Growth
	第十六週 12/24, 12/26	9.5	Linear Equations
Chapter 17 Second-Order Differential Equations		17.1	Second-Order Linear Equations
		17.2	Nonhomogeneous Linear Equations
	第十七週 12/31, 1/2	12/31 放假	
		Review	
	第十八週 1/7, 1/9	Final Exam 1/7 (Monday) 8:30-11:00, 考試範圍 Sec 3.9-17.2	