

MTE3141 Multiple Integrals and Differential Equations

Weekly units/topics	Intended unit learning outcomes	Activity where students engage with this unit outcome	Where and how is this unit outcome assessed	Learning Resources
Unit 1 Functions of several variables, limits and continuity	1. Define the concepts of limit and continuity of multivariable functions	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	Notes on UNIT 1 posted in MTE3141
	2. Discuss the existence of and determine limit of multivariable functions	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
	3. Find domain of continuity of a multivariable functions	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
Unit 2 Partial differential derivatives and applications	1. Define the concept of partial differentiation of multivariable function	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	Notes on UNIT 2 posted in MTE3141
	2. Differentiate a multivariable function	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
	3. Apply partial differentiation to solve problems involving optimisation	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
Unit 3 Multiple integrals and applications	1. Explain concept multiple integral	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	Notes on UNIT 3 posted in MTE3141

	2. Compute double integrals	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
	3. Apply double integral to find volumes of solids	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
Unit 4 Ordinary Differential Equations	Explain the concept of ordinary differential equations	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	Notes on UNIT 4 posted in MTE3141
	2. Solve ODE	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
	3. Apply ODE to solve a wide variety of problems from various domains (physical, chemistry, biological, economical, etc.)	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
Unit 5 Introduction to PDE	1. Explain the concept of partial differential equation	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	Notes on UNIT 4 posted in MTE3141
	2. Classify PDEs and Solve PDEs	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	
	3. Apply PDEs to solve a wide variety of problems from various domains (physical, chemistry, biological, economical, etc.)	Read provided notes, participate to forum, workout quiz and assignment	In forum quiz and assignment	