MATHEMATICS 1001 (Calculus II) — Winter 2025
Course Outline

Unit 1: Indefinite Integrals (approx. 3 weeks)
- 1.1: Indefinite Integration (§4.9, 5.4)
- 1.2: Integration by Substitution (§5.5)
- 1.3: Integrals Involving Inverse Trigonometric Functions
- 1.4: Integration by Parts (§7.1)

Unit 2: Definite Integrals (approx. 4 weeks)
- 2.1: Area Under a Curve (§5.1)
- 2.2: Definite Integration (§5.2)
- 2.3: The Fundamental Theorem of Calculus (§5.3)
- 2.4: Area Between Curves (§6.1)

Unit 3: Techniques of Integration (approx. 2 weeks)
- 3.1: The Method of Partial Fractions (§7.4)
- 3.2: Trigonometric Integrals (§7.2)
- 3.3: Trigonometric Substitution (§7.3)
- 3.4: Improper Integrals (§7.8)

Unit 4: Differential Equations and Other Applications (approx. 3 weeks)
- 4.1: Modelling with Differential Equations (§9.1)
- 4.2: Separable Equations (§9.3)
- 4.3: Models for Population Growth (§9.4)
- 4.4: Predator-Prey Systems (§9.6)
- 4.5: Probability (§8.5)
- 4.6: Volumes of Solids of Revolution (§6.2)

Section numbers (§) are given for Stewart, Clegg & Watson, 9th edition.