Book: THOMAS' CALCULUS Early Transcendentals, 15th edition, By: Hass – Heil – Bogacki – Weier.

Chapter 4 and 5: Applications of Derivatives and Integrals: 9 Lectures (3 weeks)

- 5.2: Sigma Notation and Limits of Finite Sums.
- 5.3: Definite Integral.
- 4.8: Antiderivatives
- 5.4: The Fundamental Theorem of Calculus
- 5.5: Indefinite Integrals and the Substitution Method (Be aware that a few examples include logarithmic and exponential functions, which should be disregarded).
- 5.6: Definite Integral Substitutions and the Area Between Curves (We need only the first subsection 'The Substitution Formula').

Chapter 3, 7 and 8: Derivatives and Integrals and Transcendental Functions: 6 Lectures (2 weeks)

- 7.1: The Logarithm Defined as an Integral.
- 3.9: Inverse Trigonometric Functions.
- 8.1: Using Basic Integration Formulas
- 7.3: Hyperbolic Functions.

Chapter 8: Techniques of Integration: 9 lectures (3 weeks)

- 8.2: Integration by Parts.
- 8.3: Trigonometric Integrals.
- 8.4: Trigonometric Substitutions.
- 8.5: Integration of Rational Functions by Partial Fractions.

Chapter 4 and 8: Applications of Derivatives and Techniques of Integration: 6 lectures (2 weeks)

- 4.5: Indeterminate Forms and l 'Hospital's Rule
- 8.8: Improper Integrals

Chapter 5 and 6: Integrals and Applications of Definite Integrals: 6 lectures (2 weeks)

- 5.6: Definite Integral Substitutions and the Area Between Curves (We need only the third subsection 'Areas Between Curves').
- 6.1: Volumes Using Cross-Sections.
- 6.2: Volumes Using Cylindrical Shells
- 6.3: Arc Length
- 6.4: Areas of Surfaces of Revolution.

Chapter 10: Parametric Equations and Polar Coordinates: 6 lectures (2 weeks)

- 10.3: Polar Coordinates.
- 10.4: Graphing Polar Coordinate Equations.
- 10.5: Areas and Lengths in Polar Coordinates.