

MCV 4U Calculus and Vectors

Outcome Achieved	Essential Outcome
Unit 1: Rates of Change(Text : McGraw Hill Ryerson – Calculus and Adv. Func.)	
	<ul style="list-style-type: none"> - Rates of change in real life - Limits - Secants and Tangents - Applications
Unit 2: Derivatives (Text : McGraw Hill Ryerson – Calculus and Adv. Func. Ch.4 +5)	
	<ul style="list-style-type: none"> - Derivatives – Power Rule, Quotient Rule, Chain Rule + Applications - Higher Order Derivatives , Implicit (Extension) - Velocity and Acceleration
Unit 3: Applying Properties of Derivatives (Ch. 6)	
	<ul style="list-style-type: none"> - The second derivative – key properties (local max / min, etc) - Curve Sketching - Problem solving with curve sketching
Unit 4: Rate of Change Problems (Ch. 3, 4, 6)	
	<ul style="list-style-type: none"> - Related Rates (+ Social sciences) - Optimization Problems - Collect data
Unit 5: Representing Vectors (Text: Harcourt – Ch. 4 , 5)	
	<ul style="list-style-type: none"> - Vector concepts - Vector Laws - Force and Velocity as a Vector - Algebraic Vectors and it's operations - Cross and Dot product of 2 vectors and applications
Unit 6: Lines and Planes (Text: Ch. 7 , 8)	
	<ul style="list-style-type: none"> - Parametric and Vector Equations of a Line in a Plane - Scalar Equation of a Line in a plane - Equations of a Line in 3 – Space - The intersection of 2 lines - The Vector Equation of a Plane in Space - The Scalar Equation of a Plane in Space - The intersection of a Line and a Plane - The intersection of Two and Three Planes