



EFFECTIVE: MAY 2006
CURRICULUM GUIDELINES

- A.** Division: Instructional Effective Date: May 2006
- B.** Department / Program Area: Mathematics/ Faculty of Science & Technology Revision X

3. Inverse Functions: Exponential, Logarithmic and Inverse Trigonometric Functions
 - definitions, properties, and graphs
 - differentiation of logarithmic and exponential functions (any base)
 - logarithmic differentiation
 - differentiation of inverse trigonometric functions
 - applications to related rates
 - limits involving combinations of exponential, logarithmic, trigonometric, and inverse trigonometric functions
 - L'Hôpital's rule
4. Graphing and Algebraic Functions
 - increasing and decreasing functions
 - local extrema
 - Rolle's Theorem and Mean Value Theorem
 - curve sketching
 - concavity; inflection points
 - asymptotic behaviour; limits at infinity; infinite limits
 - applied maximum and minimum problems
 - antidifferentiation
 - rectilinear motion
5. Parametric Equations and Polar Coordinates
 - parametric representation of curves in \mathbb{R}^2
 - derivatives and tangent lines of functions in parametric form
 - tangent lines to graphs in polar form
 - definitions and relationships between polar and Cartesian coordinates
 - graphing of $r = f(\theta)$
6. Optional Topics (included at the discretion of the instructor).
 - a formal limit proof (using epsilonics)
 - application of the absolute value and greatest integer functions
 - proofs of the rules of differentiation (differentiation formulas) for algebraic functions
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R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR

Not open for PLAR

Course Designer(s) Susan Oesterle

Education Council / Curriculum Committee Representative

Dean / Director Des Wilson

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