UNIVERSITY OF CALGARY

FACULTY OF SCIENCE
Department of Mathematics and Statistics

Mathematics 283 Honours Calculus II

(see Course Descriptions for the applicable academic year: http://www.ucalgary.ca/pubs/calendar/)

Syllabus

Topics	**Number of Hours**
Methods of integration: Integration by parts including reduction formulas, Trigonometric integrals, Inverse trigonometric substitutions, Partial fractions.	6
Improper integrals	2
Applications to length of curves, area, and volume	4
Sequences and convergence: Cauchy sequences, Monotone Convergence Theorem. Completeness	6
Infinite sequences and series: Convergence and convergence tests. Absolute and conditional convergence	6
Power series, Taylor Series and functions defined by series	4
Ordinary differential equations: Solution. Initial value problems, Integration curves	1
Separable equations, First-order homogeneous equations, Exact equations, Integrating factors, First-order linear equations. Second-order linear equations with constant coefficients. Method of undetermined coefficients, variation of parameters	6
Partial derivatives. Existence and uniqueness theorem for first-order ODEs	1
TOTAL HOURS	**36**

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