

**University of Northern British Columbia**  
**Fall 2009**  
**Math 336 – Intermediate Differential Equations**

**Instructor:** Dr Edward Dobrowolski  
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**Lectures:** TR 1:00 pm – 2:20 pm Lib. 5-155  
**Office Hours:** MWF 1:00 pm – 2:00 pm in MACE, or by appointment

**Text:** Nagle, Saff, Snider, Fundamentals of Differential equations and Boundary Value Problems, 5<sup>th</sup> Edition, Pearson 2008

**Calendar Description:**

This course is a continuation of MATH 230-3 and is designed to increase the depth and breadth of students' knowledge pertaining to differential equations. Topics include existence and uniqueness theory for ordinary differential equations, series solutions of differential equations, linear system theory, phase plane analysis and stability, boundary value problems and Green's Functions, general introduction to the theory of Fourier Series with an application to boundary value problems for the Heat Equation, Wave Equation and Laplace's Equation.

**Student evaluation:**

Assignments	25%
Midterm 1	20%
Midterm 2	20%
Final Exam	35%

**Midterm Dates:** Thursday October 8, Thursday November 12

**Course Content:**

Existence and Uniqueness:	1.2, 13.1, 13.2
Series Solution to Differential Equations	Chapter 8
PDF and Fourier Series	Chapter 10
Boundary Value Problems	11.1 – 11.7
Introduction to Phase Plane Analysis	5.1, 5.2, 5.4
Introduction to Linear Systems	Chapter 9

The material may be slightly altered as time progresses.