MAP 4305/5304 - INTERMEDIATE DIFFERENTIAL EQUATIONS SYLLABUS

INSTRUCTOR: Paul Robinson
CLASS TIME: MWF period 3 (09:35-10:25)
CLASS ROOM: LIT 219
OFFICE HOURS: To be determined
TEXT: Nagle, Saff and Snider, *Fundamentals of Differential Equations and Boundary Value Problems*, Edition 9 (or 8 or 7)

This course builds on the foundation provided by the course on 'Elementary Differential Equations'. Most of our time will be spent on chapters 8, 9 and 10 of the adopted text. In Chapter 8 we seek solutions to differential equations in the form of power series; many differential equations of importance in applications may (and shall) be solved in this way. In Chapter 9 we consider systems of differential equations (usually linear systems): in theory, these may involve n equations in n unknowns; in practice, n will be 2 or 3 and familiarity with 2×2 and 3×3 matrices will be assumed. In Chapter 10 we are introduced to PDEs - partial differential equations - which involve functions of two or more variables and their partial derivatives; our approach to solving such equations will put us in touch with Fourier series and boundary value problems, and will be applied to some classical PDEs of importance throughout the physical sciences.

There will be four in-class tests and at least five quizzes during the semester. Grades will be assigned on the basis of *either* (i) all four tests *or* (ii) three tests and four quizzes. The grading scale will be the 'standard' 90% for A, 80% for B, 70% for C, and so on, with +4% for + grades and −3% for − grades; for example, 77% is the B- threshhold and 84% is the B+ threshhold.