

### Introduction to Ordinary Differential Equations

The subject of differential equations represents one of the primary foundations of the mathematical sciences. The most elementary forms are *ordinary* differential equations (ODEs), the basis of which relies extensively on a background of the single-variable calculus. This class is thus a gateway to the more general subject of *partial* differential equations, which is the natural extension based upon the multi-variable calculus.

The core aims of this class are: understanding the classification of ODEs, learning to apply the basic solution techniques, and developing an intuition for solution properties. Computing and graphical visualization will be an important accompaniment to the lectures and assigned work. The rudiments of symbolic computing, numerical computing and computer graphics will be introduced through the use and modification of downloadable Maple and Matlab scripts. Finally, examples of the use of differential equations in quantitative mathematical models will be frequently presented during the course.

---

<b>Professor:</b>	David Muraki, office K10538, phone 604.291.4814
<b>Lectures:</b>	monday/wednesday/friday 12:30-1:20pm in B9201
<b>Office Hours:</b>	wednesday 3:00-5:00pm
<b>TAs:</b>	Mohamed Sulman Austin Roche
<b>Textbook:</b>	<i>Elementary Differential Equations &amp; Boundary Value Problems</i> Boyce/DiPrima, Wiley (7 <sup>th</sup> ed, 2001)
<b>Webpage:</b>	visit <a href="http://www.math.sfu.ca/~muraki">www.math.sfu.ca/~muraki</a> & follow class link updated after lectures: assignments, computing demos & announcements link to online notes from main library
<b>E-Mail:</b>	channel for class communications webct-based e-mail: class e-mail & discussion group (set-up in progress) <a href="mailto:muraki@fraser.sfu.ca">muraki@fraser.sfu.ca</a> : private class-related e-mail correspondence <a href="mailto:muraki@math.sfu.ca">muraki@math.sfu.ca</a> : urgent correspondence only please
<b>Computing:</b>	Maple & Matlab are the course computing environments lecture demos & homework scripts will be posted on class webpage Maple & Matlab are accessible from the computer lab in AQ3144
<b>Responsibilities:</b>	weekly assignments, due in friday lecture ( $\approx 25\%$ ) assignments will involve use of computing tools midterm ( $\approx 30\%$ , mid-october) & final exam ( $\approx 45\%$ , 05 december)