Math 256

Differential Equations

2016W Term 2 (January-April, 2017) Course Outline

Course Description

This course serves as an introduction to differential equations with a focus on solution techniques, transforms and modeling. Topics include linear ordinary differential equations, Laplace transforms, Fourier series and separation of variables for linear partial differential equations.

Instructor information

Instructor:	Eric Cytrynbaum (I-I-C) Section 201
Email:	cytryn@math.ubc.ca
Phone:	604-822-3784
Office:	MATX 1215
Office hours:	Tuesday 11:30 am - 1 pm and Friday 12 pm - 1 pm.

Instructor:	Tom Eaves Section 202
Email:	tse23@math.ubc.ca
Phone:	604-827-3297
Office:	LSK 203C
Office hours:	Tuesdays 10.00am - 11.30am and Fridays 2.15pm - 3.45pm

Marking scheme

- WeBWorK assignments - 10%
- Tutorial worksheets - 5%
- Clicker score - 0/2%
- Midterms (2) - 38/40%
- Final exam - 45%

Note: The midterms and clicker score will add up to 40% with either 38% for the midterms and 2% for clickers OR 40% for midterms and 0% for clickers depending on which total is higher.

Important dates

Date	Event
Jan 3 (Tues)	First day of lectures
Jan 9 (Mon)	First day of tutorials.
Jan 17	Last day for W-free withdrawal from the course.
Feb 13 (Mon)	Family Day. University closed. No tutorial.
Jan 31	**Midterm 1**
Feb 10	Last day for withdrawal from the course with a W.
Feb 20 - Feb 24	Reading break. No lectures. No tutorial.
Mar 14	**Midterm 2**
Apr 6 (Thurs)	Last day of class.
Apr 10 - Apr 28	Exam period.

Homework

All homework for the course will be submitted via WeBWorK. There will be two types of assignments, pre-lecture and post-lecture. Two pre-lecture assignments for each week will open on Friday and will be due in the morning before the associated lecture. Links to supporting videos will be posted on the pre-lecture resources page. Post-lecture assignments will open on Mondays and will be due the following Friday at 5:00 pm.

Not doing homework (yourself) will make it difficult to pass the course. Online tools (e.g. Wolfram Alpha) are capable of giving answers to many of the homework problems but will obviously not be available to you on midterms or exams. If you insist on using such tools, I strongly recommend that you only resort to them after spending at least an hour or two (if not more and spread over a few days) on any particular problem. This is the only way to build the skills that you will need for the midterms and exam.

Tutorials

There are six tutorial sections associated with the course that meet (in parallel) once a week. The first meeting will be in the second week of term. During each tutorial session, you will be given a worksheet to work on, either on your own or in groups. A TA will be on hand to answer questions and guide you through the problems. Solutions to worksheet problems are to be handed in at the end of the tutorial and will be marked by the TAs.

Textbook

Jiří Lebl, Notes on Diffy Qs - Differential Equations for Engineers.

Alternate textbooks

- Paul's Online Math Notes - another free online text that covers much (possibly all) of the material in this course.
- William E. Boyce, Richard C. DiPrima, Elementary Differential Equations and Boundary Value Problems (10th edition, 2012)

Clickers

We will be using clickers for this class (more about Clickers). Register your clicker through Blackboard Connect. Your clicker participation score is twice the number of lectures in which you click for at least 75% of the questions divided by the total number of lectures in which clickers are used (probably all but the midterm days). You do not have to get the answers correct to get the points.

Missing midterms, exams, late homework

If you are unable to attend one of the midterms, you must notify your instructor before (preferred) or within two days after (in the case of emergencies) the exam date. In either of these two cases (and only in these two cases), suitable accommodations will be made. Generally, your final exam mark will be used in place of the missing midterm mark. Undocumented absence from the midterm will be given a score of zero.

No extensions for WeBWorK will be given.

DO NOT make any travel plans for April until the exam schedule is announced (some time in February) as no accommodation will be made for students unable to attend the final exam due to conflicting plans.

Getting help

There are a number of resources available for getting help with course material. These include

- the instructor's office hours,
- the tutorial sections,
- the Math Learning Centre where you can get free tutoring,
- Piazza, the online discussion forum for the course.

Prerequisites

- First year calculus (MATH 100/101 or equivalent)
- Linear algebra (MATH 152, MATH 221 or MATH 223)
- Corequisite: Multivariable calculus (MATH 200, MATH 217, MATH 226, MATH 253 or MATH 263)