

# Course Syllabus

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## MATH 215 / Math 255 Elementary Differential Equations I / Ordinary Differential Equations

This is the common Canvas site for MATH 215 / MATH 255 and is the source of all central course information, including the course outline, course policies, course study materials, access to online homework, course grades, and general announcements.

**Purpose:** This course is an introduction to ordinary differential equations (ODEs) and models that involve ODEs in several areas of application including physics, chemistry, biology, ecology, and engineering.

**Instructor-in-Charge:** Professor Tai-Peng Tsai.

### List of Math 215 / MATH 255 Sections:

Section	Instructor	Location	Time	Section Page
101	Dr. Aaron Palmer	Buchanan A103	8-9am MWF	<a href="#">Section 101</a>
102	Dr. Arthur Ghigo	Chemistry D200	9-10am MWF	<a href="#">Section 102</a>
103	Prof. Tai-Peng Tsai	LSK 200	1-2pm MWF	<a href="#">Section 103</a>
104	Dr. Aaron Palmer	Buchanan A101	1-2pm MWF	<a href="#">Section 104</a>

**Textbook:** [Notes on Diffy Qs: Differential Equations for Engineers](https://www.jirka.org/diffyqs/)  (<https://www.jirka.org/diffyqs/>), by Jiri Lebl, (online and free, there is a link to affordable paperback)

**Course Topics:** See [Topics](#) for a list of topics in the order (roughly) that they will be covered.

### Pre-reqs and Co-reqs:

- Pre-reqs: Calculus II: (one of MATH 101, MATH 103, MATH 105, MATH 121, SCIE 001) and Linear Algebra: (one of MATH 152, MATH 221, MATH 223).
- Co-reqs: Multivariable Calculus: (one of MATH 200, MATH 217, MATH 226, MATH 253, MATH 263).

### Important Dates:

- First day of class: Wednesday, Sept. 4
- Midterm 1: Wednesday, Oct. 2
- Midterm 2: Wednesday, Nov. 6
- Last day to withdraw: Tuesday, Sept. 17

- Last day of classes: Friday, Nov. 29
- Final exam: TBD

### Course Evaluation:

- Homework: 14% (Homework will be due Wednesdays at 6pm beginning September 18 and skipping the weeks with a midterm. The lowest grade will be dropped.)
- Midterm 1: 18% (October 2, 50-minute exam to be taken in class)
- Midterm 2: 18% (November 6, 50-minute exam to be taken in class)
- Final exam: 50% (150-minute exam, date and location TBD)

### Homework:

Homework will have written components as well as Matlab, both of which should be submitted electronically. Please follow carefully the submission instructions for each assignment. Homework solutions will be posted in Canvas.

### Policies on homework and midterms:

1. No calculators or notes are allowed in the midterm and final exams.
2. Homework assignments are due 6pm at Canvas on Wednesdays. Solutions will be posted on Canvas. A selection of the problems will be graded. If you submit homework late, a 25% penalty will be applied for each day late.
3. Permission to shift the weight of your missed midterms to other exams, or to ignore missed assignments, may be granted only in the following circumstances: (a) prior notice of a valid, documented absence (e.g. out-of-town varsity athletic commitment with a letter from a coach) on the scheduled date; or (b) notification to the instructor of absence due to a medical condition with a doctor's note. Otherwise, a score of 0 will be given for the missed midterms/assignments. However, the Senate had recently changed its policy to allow students to request academic concession without documentations ONCE per course. For such request please fill the [form \(http://www.math.ubc.ca/Ugrad/ugradForm/Student Declaration Academic Concession MATH.pdf\)](http://www.math.ubc.ca/Ugrad/ugradForm/Student%20Declaration%20Academic%20Concession%20MATH.pdf)
4. The period for final exams is December 3--18, 2019 inclusive. The exact time will be announced by the University in the middle of the term. Students should not make early travel plans that overlap with the scheduled exam period.

### MATLAB:

- The homework and exams contain problems using MatLab.
- Students can use MatLab Online for free. See [MATLAB for UBC Students](#) in the Modules. (<https://matlab.mathworks.com/>)
- Examples using MatLab will be given in class. Instructions and videos are posted on Canvas. Checkout the [MATLAB for MATH 215/255](#) section to get started with MATLAB.
- TAs are available for open office hours to answer MatLab questions. Se the [MATLAB Help Center Schedule](#).

### Piazza:

We will have a forum at Piazza for all sections of MATH 215/255 (see link on the sidebar). You can ask and answer questions there. Instructors and TAs will occasionally check if there are questions unanswered.

### Additional Resources:

Math Learning Centre (MLC) Teaching Assistants are available to answer MATH215/255 related questions at the [Math Learning Center \(https://www.math.ubc.ca/~MLC/\)](https://www.math.ubc.ca/~MLC/) located in LSK 301/302.

Other textbooks and resources Physical textbooks such as Boyce and DiPrima (any recent edition) or Edwards and Penney. Or [Pauls Online Notes](http://tutorial.math.lamar.edu/Classes/DE/DE.aspx) [↗ \(http://tutorial.math.lamar.edu/Classes/DE/DE.aspx\)](http://tutorial.math.lamar.edu/Classes/DE/DE.aspx)

**British Columbia law requires the use of a helmet while riding a bicycle.**

### Statement on UBC's Policies and Resources to Support Student Success:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available [here \(https://senate.ubc.ca/policies-resources-support-student-success\)](https://senate.ubc.ca/policies-resources-support-student-success).

## Course Summary:

Date	Details
Wed Sep 18, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391362">Homework 1 (https://canvas.ubc.ca/courses/45799/assignments/391362)</a> due by 6pm
Wed Sep 25, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391370">Homework 2 (https://canvas.ubc.ca/courses/45799/assignments/391370)</a> due by 6pm
Wed Oct 2, 2019	 <a href="https://canvas.ubc.ca/calendar?event_id=153785&amp;include_contexts=course_45799">Midterm I (in class) (https://canvas.ubc.ca/calendar?event_id=153785&amp;include_contexts=course_45799)</a> 12am
Wed Oct 9, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391369">Homework 3 (https://canvas.ubc.ca/courses/45799/assignments/391369)</a> due by 6pm
Wed Oct 16, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391368">Homework 4 (https://canvas.ubc.ca/courses/45799/assignments/391368)</a> due by 6pm
Wed Oct 23, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391367">Homework 5 (https://canvas.ubc.ca/courses/45799/assignments/391367)</a> due by 6pm
Wed Oct 30, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391365">Homework 6 (https://canvas.ubc.ca/courses/45799/assignments/391365)</a> due by 6pm
Wed Nov 6, 2019	 <a href="https://canvas.ubc.ca/calendar?event_id=153786&amp;include_contexts=course_45799">Midterm II (in class) (https://canvas.ubc.ca/calendar?event_id=153786&amp;include_contexts=course_45799)</a> 12am

Date	Details
Wed Nov 13, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391366">Homework 7 (https://canvas.ubc.ca/courses/45799/assignments/391366)</a> due by 6pm
Wed Nov 20, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391364">Homework 8 (https://canvas.ubc.ca/courses/45799/assignments/391364)</a> due by 6pm
Wed Nov 27, 2019	 <a href="https://canvas.ubc.ca/courses/45799/assignments/391363">Homework 9 (https://canvas.ubc.ca/courses/45799/assignments/391363)</a> due by 6pm