



## 2. Instructor Information

Instructors	Email	Office	Office Hours
Dr. Mohsen Mollahajiaghahi	<a href="mailto:mmollaha@uwo.ca">mmollaha@uwo.ca</a>	MC 128	Wednesday 11 am-1pm

\***Office hours:** Extra office hours may be arranged by appointment.

- Solve a variety of first order ODE's and second order linear ODE's.
- Apply differential equations to model deterministic dynamical systems.
- Calculate the Laplace transform and moment generating function.
- Use Laplace transform to solve ODE's.
- Solve basic systems of linear equations.
- Apply Markov chains to model stochastic dynamical systems.

## 4. Course Materials

The first part of the course (Differential equations) is based on the following textbook:

- *Differential Equations with Boundary Value Problems*, 2nd Edition by John Polking, Albert Bogges, and David Arnold, Pearson (ISBN: 9780134689500).

The material for the second part of the course (Markov chains) will be uploaded to OWL.

### Course Content Schedule (Tentative)

Week	Dates	Topic
1	January 9 – 13	First order equations
2	January 16 – 20	First order equations
3	January 23 – 27	First order equations, Applications
4	Jan 30 – Feb 3	Second order equations
5	February 6 – 10	Second order equations
6	February 13 – 17	Second order equations
7	February 18 – 26	Reading Week
8	Feb 27 – Mar 3	Laplace transform
9	March 6 – 10	Laplace transform
10	March 13 – 17	Linear Systems
11	March 20 – 24	Moment generating functions, Markov chains
12	March 27 – 31	Markov chains
13	April 3 – 6, 10	Markov chains

## Course Design and Expectations

Students are expected to “attend” lectures by completing various activities (reading prescribed sections of the text, for example). A list of suggested exercises from the text will be provided to supplement the weekly lessons. The evaluations (assignments, test, and exam) are based on the course material distributed in this manner.

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. Any changes will be indicated on the OWL site and discussed with the class.

If you need assistance, seek support on the [OWL Help page](#). Alternatively, you can contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#).

## Technical Requirements for the Course

- Laptop or computer
- Stable internet connection
- Working microphone
- Working webcam
- Device for scanning (either a scanner or an application that can be used in conjunction with your device’s camera).

## 5. Methods of Evaluation

Below is the summary of graded assessment. Any deviations from this schedule will be communicated and the schedule should be considered tentative until confirmed.

Assessment	Format	Weighting	Date
Assignments	Online	4 Equally weighted assessments totaling 16% of the course grade	TBA
Midterm Test 1	In-person	22%	Saturday, Feb 11, 1 – 3 PM
Midterm Test 2	In-person	22%	Saturday, March 18, 1 – 3 PM
Final Exam	In-person, synchronous	40%	TBA (during the exam period)

**Other Information About Tests and Examinations:**

- The midterm tests and final exam will be in-person. Virtual proctoring will be employed on the midterm test and the final exam if the course will be run online, otherwise, the test and final exam will be held in classrooms.

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When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

### **Accommodation Policies**

Students with disabilities are encouraged to contact Accessibility Services to contact

technical requirements for this service. More information about this remote proctoring service, including tec