

MATH*3100
Differential Equations II
Winter 2021



(Revision 1: January 8, 2021)

DISCLAIMER:

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website <https://news.uoguelph.ca/2019-novel-coronavirus-information/> and circulated by email.

1 INSTRUCTIONAL SUPPORT

1.1 Instructor

Kimberly M. Levere, Ph.D.

Office: MacN 539, ext. 56908

Email: klevere@uoguelph.ca

Office hours: Mondays 1:30pm-2:30pm via Office Hours Zoom Link:

<https://zoom.us/j/92616844567> (Meeting ID: 926 1684 4567)

Due to large class size, office hours are held in a group setting. I have found this to be a very productive and supportive learning environment in the past. Should you require an individual, private appointment with me, please contact me by email to set up a meeting.

1.2 Teaching Assistants (and their Office Hours)

John Dewhurst Thursdays, 2:30pm-4:00pm

Connor Gregor Wednesdays 2:00pm-3:30pm

I am working on getting a Zoom Pro account for the TAs to deliver their office hours. As such, their office hours will begin in Week 2, while I will be available in Week 1 via the above Zoom link.

2 LEARNING RESOURCES

2.1 Course Website

Course material, news, announcements, and grades will be regularly posted to the MATH*3100 Courselink website. You are responsible for keeping up-to-date on this site.

2.2 Required Resources

1. The course manual MATH*3100 – *Differential Equations II - Course Manual 3rd Edition*), is available at the MacNaughton Bookstore. This is the primary resource for the course and functions both as the textbook, and as a notebook that we will complete together in class as the course progresses. It can be purchased as a printed copy, or as a pdf. Please be sure that you have the current version, the 3rd edition, (only available in the MacNaughton bookstore) as a few changes have been made to last year's manual. Remember that this resource is protected by copyright and is not to be sold or redistributed in any form.
2. *Elementary Differential Equations and Boundary Value Problems* by Boyce, DiPrima & Meade. Any edition is fine; the newest is the 11th.

2.3 Recommended Resources

none

Lecture Information:

It is strongly recommended that you attend every class. We will complete the course manual together during lectures so please bring it to every class.

2.4 Communication & Email Policy

Please use office hours and Courselink discussion forums as your main opportunity to ask questions about the course. Major announcements will be posted to the course website. **It is your responsibility to check the course website regularly.** As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

2.5 Getting Help

My number one priority is to ensure that you are supported and have lots of opportunities to ask questions and get help! Here are some options for getting help in this course:

- Come office hours (either mine or one of the TAs). Don't ever hesitate to drop in, even if you think you are behind in your studying. Getting you caught up is ****exactly**** what those opportunities are there for!
- Post to the discussion board on Courselink. This is a great place to post your questions! I will check this often and respond as soon as I am able. I have even given you the option

to post anonymously in case you are shy 😊 It is also a great way for you to help others if you see a question that someone else posts that you can help out with! This is one of the best ways to master a concept: by explaining it to someone else!

- Send me an email (klevere@uoguelph.ca). Since there are 85 of you and only ONE of me, I would prefer to answer questions in a group forum (so that I can help more of you at once), but certainly for more personal queries, this is a great option. If you ask questions by email (or even in Courselink!), it would be extremely helpful for you to attach a picture of your work, so I can easily see where you might be stuck and be able to help you more quickly. I usually try to respond within a few hours. However, I get a lot of email from students and I need to make sure that I have the chance to help as many people as I can in the time I have! So be warned that if you send me many emails with various questions, it may take a day or two to get back to you.

3 ASSESSMENT

3.1 Dates and Distribution

Your grade will be determined using the following grading scheme:

	Scheme #1	Scheme #2	Scheme #3
Academic Misconduct Quiz	1%	1%	1%
Assignments** (total of 8)	24% (3% each)	24% (3% each)	24% (3% each)
Homework Check-ins** (total of 8)	14% (2% each, best 7 of 8)	14% (2% each, best 7 of 8)	14% (2% each, best 7 of 8)
Term Test 1	15%	5%	15%
Term Test 2	15%	15%	5%
Final Exam	31%	41%	41%

**You must receive at least 50% of the marks available, in total, on term tests and final exam that are used to calculate your final grade. That is,

$$\frac{(\text{Total marks earned on term tests and exam})}{(\text{Total marks available on term tests and exam})} \geq 50\%$$

If you do not achieve this, your maximum possible final grade will be 48%, *no matter what grade you receive on the Assignment or Homework Check-in component*. Provided that you satisfy the above equation, your final grade will be calculated using the more favourable of the above two grading schemes. Considerations may be made according to the policies listed in Section 3.2.

Academic Misconduct Quiz: One of my biggest concerns with the virtual delivery of courses is academic integrity. I expect that you are taking this course because you are interested in the content and/or to meet a requirement of your degree. Hopefully, that alone is motivation enough to do things honestly! To ensure that everyone fully understands what academic misconduct is, I ask that you read the documentation on this subject on the University of Guelph website found here:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Be sure to read all of the sections listed on the right:

The screenshot shows the University of Guelph's 2020-2021 Undergraduate Calendar. The main heading is 'VIII. Undergraduate Degree Regulations and Procedures'. Below this, there is a section for 'Academic Misconduct'. To the right, there is a navigation menu with 'INDEXES' and 'SECTIONS'. The 'SECTIONS' menu is circled in red and lists the following items: Education and Remediation, Offences, Penalties, Procedures, Appeals, Record of Academic Misconduct, and Guidelines for Penalties for Academic Misconduct.

After reading about Academic misconduct, you'll be required to complete a quiz that tests your understanding. This quiz will be completed in Courselink and you will have unlimited attempts (your highest score will count as your mark). You must complete this quiz with a grade of 80% or higher before any assessments are submitted for grading (that is, prior to January 19th). Failure to do so will result in a grade of 0 on any assessments that occur prior to you mastering this quiz.

Staged Penalty System

Having clearly outlined what constitutes academic misconduct, I will be taking this extremely seriously in this course. Certainly I want the degree that you are working so hard for to be valuable when you finish it, so I have to ensure that you are only receiving marks for work that you have completed on your own and not with unauthorized assistance. Unfortunately, many cases of academic misconduct were reported in the fall semester as the result of unauthorized collaboration with other students and the use of “tutoring” websites in which “experts” post complete answers to questions in as little as 15 minutes. Such an environment makes assessment incredibly challenging. To be clear, this sort of behavior is indeed academic misconduct and will absolutely NOT be tolerated in this class.

In response to this, my intention is to respond to cases of academic misconduct by making adjustments to assessment delivery for the class as a whole. I hate it that these penalties will apply to everyone, but at the end of the day, it is impossible for me to know how far the

misconduct stretches and who has talked to who. The objective is to devalue the use of such unauthorized behavior so that there is no benefit to it. Since the penalties impact future assessments, hopefully this will act as a deterrent. Here is how it works:

I will begin this semester with a positive and trusting outlook, expecting that each of you will complete this course with academic integrity. I will initially allow for assignments to be done in groups of up to 2 students (but you can only work with the same person on ONE assignment). Term Tests will be done individually. All questions on assessments will be released simultaneously allowing you to work in whatever order you choose, or to come back to questions that you struggle on initially. Responses on assignments, term tests and the exam will require your written solutions and part marks will be readily available for partially correct responses and work. No proctoring (Respondus Lockdown, Zoom, etc.) will be used while assessments are being completed.

If at any time, it comes to my attention that unauthorized collaboration or the use of unauthorized websites or materials (like Chegg, OneClass, Online Integral Calculators, Desmos, or any other websites that list answers to questions) have been used by ANY student in this course then I reserve the right to

- Weight the current assessment at 0%, shifting the weight to the final exam.
- Revoke group work privileges for weekly assignments.
- Release assignment and/or test questions one at a time rather than simultaneously.
- Reduce the amount of time given to complete assessments thus limiting the ability to use outside resources.
- Change the format of tests and the exam to multiple choice rather than written answer thus eliminating the possibility for part marks.
- Instituting the use of proctoring software (Zoom, Respondus Lockdown, etc.)

In addition to the above provisions, any person caught committing academic misconduct will be submitted for academic review by the Dean's office and will face additional penalties.

Please be honest. No one asked for the semester to be run this way, so please work with me to make the best of this situation and conduct yourself maturely and responsibly.

Scheduled Assessments

Assignments: Every week (aside from week 1 and weeks in which there are term tests) you will be given a short assignment to complete for marks. The content will correspond to the previous week's lessons. These questions are meant to ensure that you are following along and understanding the course content. These are **closed-book**, **closed-resource** assessments. You may not access any websites of any kind (including any other person or peer beyond your group, online websites that may list answers to exact or similar questions, or paid websites like Chegg or anything similar to this) or use your notes to complete these assignments.

In order to facilitate interaction and perhaps alleviate some stress, I will allow you to **work alone or in groups of at most 2** (this privilege may be revoked if academic misconduct is committed by

anyone in the course). You may only work with the same partner for one group assessment. You are not permitted to discuss the assignment with anyone else until after the due date. Assignments will be distributed at 10:00am EST on Tuesdays and will be due that same day at 10:00pm EST to the Crowdmark system. You will write out your complete and detailed solution to the problem(s) on the assignment and upload your answers to the Crowdmark system (a demo video of how to do this is already posted on Courselink to help you with this!). It is at the moment of uploading that you can identify your group members (if you've chosen to work in a pair) and only ONE submission will be required for the group. Note that should academic misconduct be committed by any student at any time, all future assignments will be completed individually (as outlined by the staged penalty system). Please refer to the table listed below for dates and content of these assignments.

Assignment #1	Tuesday, January 19, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 1-3; power series about ordinary points, definition of singular point
Assignment #2	Tuesday, January 26, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 4-6; Cauchy-Euler, Frobenius with roots not differing by an integer
Term Test #1	Friday, February 5, 2021 6:05pm-7:35pm EST (followed by upload to Crowdmark)	Chapter 1: Power Series
Assignment #3	Tuesday, February 9, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 9-12; basics of eigenbasis problems, drawing pictures in 2D in eigenbasis, Linear Algebra review
Assignment #4	Tuesday, February 23, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 13-15; Transforming to and from the eigenbasis and standard basis, real distinct case with phase portrait, complex case, no phase
Assignment #5	Tuesday, March 2, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 16-18; Complex Phase, Repeated Eigenvalues with Phase
Term Test #2	Friday, March 12, 2021 6:05pm-7:35pm EST (followed by upload to Crowdmark)	Chapter 2: Linear Systems
Assignment #6	Tuesday, March 16, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 22-23; Linearizing, Stability with non-zero real part eigenvalues
Assignment #7	Tuesday, March 23, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 24-26; Lyapunov's Second Method
Assignment #8	Tuesday, March 30, 2021 Available at 10:00am Due at 10:00pm EST	Lectures 27-29; Periodic Solutions

**Note that the duration and delivery of assignments is subject to change should academic misconduct by any student in the course be discovered at any time.

Homework Check-ins: In an effort to ensure that you are adequately practicing the course material (beyond just graded assignments) I have designed “Homework Check-ins”. These will be due throughout the term (see the schedule below) and require you to upload any practice homework questions you’ve done for the course (relevant to the current material) to the Crowdmark system. These questions will not be graded thoroughly for correctness, but instead will be used to gauge the level of effort that you are putting into the course. Since I know that some weeks can be busy, I will take your best 7 of 8 homework check-in marks (at 2% each) to contribute to your final grade.

Homework Check-in #1	Friday, January 22, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #1
Homework Check-in #2	Friday, January 29, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #2
Homework Check-in #3	Friday, February 12, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #4
Homework Check-in #4	Friday, February 26, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #5
Homework Check-in #5	Friday, March 5, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #6
Homework Check-in #6	Friday, March 19, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #8
Homework Check-in #7	Friday, March 26, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #9
Homework Check-in #8	Friday, April 9, 2021 Due to the Crowdmark system by 5:00pm EST	For You To Try #10

Term Tests: There will be 2 term tests this semester both of which will be completed individually (regardless of what penalty stage we are in). They are closed-book and closed-resource. That is, you are not to use any websites, books, peers, etc. to complete your term test solutions. Tests will take place according to the schedule above, on Friday evenings beginning at 6:05pm and ending at 7:35pm. Following this, you will be expected to upload your responses to the Crowdmark system in a timely manner. The dates and content are listed in the table above. I have posted term tests from previous offerings of the course that you may use for studying. Since you are not able to use your notes or resources here, it is important that you are studying effectively to ensure that you are able to produce solutions on your own. It is very different to “follow along” with an example from class to complete a practice question than it is to fully come up with the steps on your own. To ensure that you understand the content well enough to complete these assessments effectively, I recommend practicing *without* your notes and resources as much as possible to prepare for these assessments.

Final Exam: The final exam for this course will take place on Monday, April 26th, 2021 from 8:30am-10:30am. Like the term tests for this course, this will be a **closed-book, closed-resource** assessment that is to be **completed individually**. The format will depend on what penalty stage we are in (either written answers submitted to Crowdmark, or a fully multiple choice exam on Courselink using Respondus Lockdown (I hope not!)). This will be a cumulative assessment covering all chapters of the course. Past final exams are available on Courselink for you to practice with.

Best Practices for Writing Virtual Tests and Exams

- Be aware that there may be announcements for me to make, especially if I catch a small error or edit on a test or assignment, or if I want to clarify a problem. In those cases, I will send a class email to communicate this information. Therefore, you should absolutely keep your U of G email open while you are writing your assessments in case I do make an announcement; I am assuming that you are reading these announcements as I make them, as though I made them in person, and you are responsible for observing any edits that I point out! I totally welcome you to communicate with each other if these come up, in order to keep one another informed. At any time, you are welcome to send me an email and I will do my best to immediately reply to you during any test, assignment or the exam.
- When it comes to submitting via Crowdmark: in an environment of virtual delivery, there is the risk that occasionally, you could run into technical difficulties during submission. I strongly advise you to have a contingency plan for these sorts of situations. For example:
 - Have a friend's or family member's backup phone ready to go in case your own phone, camera, or scanner unexpectedly fails.
 - Submit your work while you know that your internet, Wi-Fi, etc, are strong. If you are working on solutions to a test or assignment, submit your solutions as you complete each problem, rather than waiting to submit all solutions at the end of the exam time. If your Wi-Fi goes down, that could leave you without enough time at the end to submit.
 - If you have continued internet trouble and you are worried that you will not be able to submit your test, contact me through email at [klevere@uoguelph.ca](mailto:klever@uoguelph.ca) and include pictures of your work. While I would ideally receive this sort of information BEFORE the due date of the assessment, I can understand that without a stable connection, even an email may be difficult! If possible, have a friend contact me by email to let me know that you are experiencing technical difficulties so that I at least have some proof that you are doing things honestly but are facing some technical challenges.
 - From a practical standpoint, it should be clear that there is no way for me to verify that any claim a student may make about a test or assignment submission issue is valid and true. Following the above pointers will help to mitigate the potential for trouble and will let me be confident that your issues are valid. It is important that I follow these guidelines strictly, out of fairness to the vast majority of students who will submit correctly and within the allotted time. I need to make sure that everyone has the same fair chance to complete these assessments and that no one

is given more time to write than anyone else. We'll work together on this and I'm sure we'll sort out anything that arises. We have to be flexible, I think.

- Do your best to make sure that ALL of your work is submitted correctly and on time! For example, if you accidentally upload the same solution for multiple questions, there will not be anything that I can do to verify that the unsubmitted question was done within the time limit – and that will be disappointing for both you and myself. Make sure you leave yourself enough time to double-check your submissions.
- When it comes to cheating: There may be times when you feel pressured, stressed, or unprepared. In these cases (or ever), it is not a good idea to cheat. Sites dedicated to quick math help (such as Chegg, CourseHero, Stack Exchange and others) will be monitored – and their use is strictly prohibited for tests assignments and the exam! It is never worth risking your academic record and potential credit in the course, just to obtain a couple of extra marks on one assessment. This is especially true when these assessments are worth as little as 3% of your mark in the first place. I strongly advise you not to fall into this trap.

3.2 Course Grading Policies

Academic Consideration: When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, ID number, and e-mail contact. See the academic calendar for information on regulations and procedures for Academic Consideration:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor at the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-accomrelig.shtml>

Missed midterm tests or assignments: Missed assignments and tests will receive a grade of 0%, unless you miss an assessment due to any of the above reasons and **bring it to the attention of the course instructor within 1 week of the assessment date in a written email**, in which case the weight of the missed assessment will be added to the final exam. There will be no makeup tests or assignments.

Illness: The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

Passing grade: In order to pass the course, you must receive a final grade of at least 50%. Additionally, in order to pass this course, you must receive at least 50% of the marks available, in total, on the term tests and final exam that are used to calculate your final grade. If you do not achieve this, your maximum possible final grade will be 48%.

Group Work: You are encouraged to work together to learn the course material and complete For You to Try exercises. Provided that academic misconduct is not detected, you may also complete assignments in groups of up to 2 (and you can only work with the same partner once). All term tests and the final exam are individual assessments and must be completed on your own and NOT in a group.

4 AIMS, OBJECTIVES & GRADUATE ATTRIBUTES

4.1 Calendar Description

This course continues the study of differential equations. Power series solutions around regular singular points including Bessel equations are presented. First order linear systems and their general solution by matrix methods are thoroughly covered. Nonlinear systems are introduced along with the concepts of linearization, stability of equilibria, phase plane analysis, Lyapunov's method, periodic solutions and limit cycles. Two-point boundary value problems are discussed and an introduction to linear partial differential equations and their solution by separation of variables and Fourier series is given.

Credit Weight: 0.5 **Department:** Mathematics & Statistics **College:** CEPS **Campus:** Guelph

Prerequisite: (1 of MATH*1160, MATH*2150, MATH*2160), (MATH*2170 or MATH*2270)

4.2 Course Aims

This course utilizes the concepts from your first differential equations course in order to extend these concepts. The main goals of the course are (1) the extension of power series solutions to discuss irregular singular points, (2) the extension of single differential equations to systems of linear differential equations and phase portraits, (3) a study of nonlinear differential equations, linearization, and Lyapunov functions, (4) the possibility of periodic solutions and limit cycles and (5) an introduction to partial differential equations. The objective of the course is to give you a strong background in ordinary differential equations that you will require as you progress through your degree (and beyond), as well as to introduce you to partial differential equations and their role in mathematics.

4.3 Learning Objectives

At the successful completion of this course, the student will have demonstrated the ability to:

1. Identify ordinary, regular and irregular singular points and find power series solutions where possible.
2. Solve linear homogeneous systems of ODEs, draw their phase portraits, and analyze their stability.

3. Solve linear non-homogeneous systems of ODEs.
4. Solve first-order autonomous nonlinear systems of ODEs via linearization, draw local and global phase portraits and classify local stability.
5. Utilize Lyapunov functions to classify global stability of equilibria.
6. Identify the existence or non-existence of periodic solutions and limit cycles.
7. Solve the heat equation via separation of variables.
8. Present small theoretical proofs regarding existence and uniqueness and other relevant properties.
9. Have a strong understanding not only of HOW to solve a problem, but why the technique works and how it was developed.

4.4 Instructor's Role and Responsibility to Students

As your instructor, I must:

1. Develop and deliver course material in a professional way that facilitates learning for a variety of students and learning styles;
2. Attend all lectures, filling in the course notes as we proceed in each lecture.
3. Respond to you. This includes, as time permits, questions in lectures, after classes, during office hours, or through email (where I reserve the right to reply within a timeframe of 1-2 days). You are more than welcome to contact me at any time through these means if you have questions or concerns about the course or the course material.
4. Evaluate you fairly, and fairly as compared to your peers, providing prompt feedback on your performance and justification for your grade. I must provide academic consideration, where appropriate, as described in Section 3.

4.5 Students' Learning Responsibilities

As a member of this class, you are expected to:

1. Take advantage of the learning opportunities provided during lectures and on assignments;
2. Treat others with respect and dignity whenever you address them, in-class or online.
3. Genuinely attempt assignment questions, and complete an appropriate number of practice problems from the textbook in a timely manner, including assignments, on your own time;
4. Seek help if you have tried the assignment questions and/or textbook exercises and are still having difficulty with the course content. This means contacting me (*not* just at the last minute!) and possibly considering other resources as I recommend them to you;

5. Check all grades against tests that have been returned to you, once they are posted to the Course website, to verify that the correct mark has been recorded.
6. Notify me, as described in Section 3, in the case that there are missed tests or academic conflicts that are known in advance. If illness, work, or extra-curricular activities are causing you to struggle, you are advised to keep me up-to-date on your progress, so that I can be more helpful to you.

5 TEACHING AND LEARNING ACTIVITIES

5.1 Timetable

Asynchronous, Recorded Lectures:

Video lectures will be recorded and delivered asynchronously. In order to keep you on task, I will ensure that I organize these videos according to the week that I intend them to be viewed. It is your responsibility to watch these videos on your own time as this content will not be delivered in any other format. . My suggestion is that you choose 3 hours per week within your own schedule and commit to always working on video lectures. Additional time should be scheduled for completing practice problems for MATH*3100 and reviewing concepts. This is especially important if you tend to be a procrastinator...I don't want you to fall behind so please set up some regular, disciplined MATH*3100 time. Depending on the concept, videos will vary in length (and therefore quantity) each week. For instance, it may take 5 shorter videos to effectively complete one week of material, while another week of material may be doable in just 2 slightly longer videos.

5.2 Lab Schedule

Lab content will be delivered asynchronously either by myself or one of the TAs. This material will either help you to practice a concept we are working on in lecture or look at a related problem or concept that will push your understanding to the next level. Any content presented in lab can be tested or asked of you on an assignment.

Online Behaviour:

Inappropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students
- Using obscene or offensive language online
- Disrupting a class/office hour by discussing entirely unrelated content to that of MATH*1210.
- Copying or presenting someone else's work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments
- Posting or selling course materials to course notes websites
- Having someone else complete your quiz or completing a quiz for/with another student
- Making false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student or instructor online

- Discriminating against fellow students, instructors or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your username and password
- Recording lectures without the permission of the instructor

Any student that does not conduct themselves in an appropriate manner in any online lecture or office hour session will be issued a penalty of a 0.5% deduction on their final grade. This will apply each time inappropriate online conduct occurs. Please be kind to each other and conduct yourself with maturity and professionalism.

5.3 Lecture Schedule

(schedule is approximate and subject to change depending on time constraints)

Lecture Topics	References
Power Series Solutions	Chapter 1
Systems of First-Order Linear ODEs	Chapter 2
Systems of First-Order Autonomous Nonlinear ODEs	Chapter 3
Periodic Solutions and Limit Cycles	Chapter 4
Introduction to Partial Differential Equations	Chapter 5

5.4 Other Important Dates

First day of classes: Monday, January 11th, 2021.

Reading Week: Monday, February 15th, 2021-Friday, February 19th, 2021. (no classes)

Good Friday: Friday, April 2nd, 2021. (no classes)

Last day of classes: Monday, April 12th, 2021.

Note that Monday, April 12th, 2021 runs as a Friday in lieu of Good Friday.

Drop Date: Courses that are one semester long must be dropped by the end of the last day of classes (**Monday, April 12th, 2021**); two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Course Evaluation Information: Near the end of the term, you will be given the opportunity to evaluate your instructor and provide comments regarding your experience. The evaluations for this class will be done in-class. Your instructor will inform you of when these are to take place.

6 ACADEMIC MISCONDUCT

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member.

6.1 Resources

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

A tutorial on Academic Misconduct produced by the Learning Commons can be found at:

<http://www.academicintegrity.uoguelph.ca/>

7 ACCESSIBILITY

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

8 RECORDING OF MATERIALS

Presentations which are made in relation of course work – including lectures – cannot be recorded or copied without the permission of the presenter, whether the instructor, classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Posted online videos and course notes are the property of the instructor and are not to be otherwise disseminated beyond this course.

9 RESOURCES

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

<http://www.uoguelph.ca/registrar/calendars/index.cfm?index>