

University of Guelph, MATH6011, Fall 2021

General Information

Course Title: Dynamical Systems I

Course Description: Basic theorems on existence, uniqueness and differentiability; phase space, flows, dynamical systems; review of linear systems, Floquet theory; Hopf bifurcation; perturbation theory and structural stability; differential equations on manifolds. Applications drawn from the biological, physical, and social sciences.

Credit Weight: 0.5

Academic Department (or campus): Mathematics and Statistics

Campus: Guelph

Semester Offering: Fall

Class Schedule and Location: Mon/Wed/Fri, MACK 304, 8:30-9:20

Instructor Information

Instructor Name: H. Kunze

Instructor Email: hkunze@uoguelph.ca

Office location and office hours: MACN 507, but there will be no office hours there. We can chat in person outside after class, and we can arrange a weekly Zoom meeting for impromptu virtual chats. I am very responsive to email.

Course Content

Specific Learning Outcomes:

1. Numeracy and Quantitative Skills
2. Critical Thinking
3. Application of Knowledge
4. Knowledge of Methodologies
5. Communication
6. Depth of Understanding

Lecture Content:

The instructor will present lectures on the topics listed in the calendar course description. On occasion, the instructor may decide that (emailed in class) handouts and/or computer demonstrations are appropriate. Lectures will be taught “face-to-face,” unless Public Health

requires otherwise. Lecture content is often developed live in class, so if you miss a face-to-face class, you should seek notes from a classmate.

Course Assignments and Tests:

There will be between four and six assignments, of equal weight, handed in and returned by email.

The first assignment is due on October 1, 2021.

Tentatively, subsequent assignments will be due every two weeks. The timing of due dates will be discussed regularly with the class and adjusted, if needed, due to the many other pressures students in the class may be feeling and for the timing of material. Students will always have at least two weeks to work on an assignment.

If a major shift in course delivery occurs due to the pandemic, we may discuss changing this assessment model.

Final examination date and time: There will be no final examination.

Final exam weighting: n/a

Course Resources

Recommended Texts:

The lectures are the primary source of course material.

No text is required, as the lecture notes will contain all required information. The instructor will recommend books for supplementary reading, but the course is self-contained.

Grading Policies

The assignments you hand in are expected to contain your own work. Of course, you can talk about the questions with me and with each other, but please make sure that the bulk of the work you submit is truly your own work. There will be low tolerance for plagiarism or what I deem to be excessive collaboration.

Course Policy regarding use of electronic devices and recording of lectures

Electronic recording of classes is expressly forbidden.

University Policies (Statements from the University Administration)

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. [See the graduate calendar for info on regulations and procedures for Academic Consideration.](#)

Drop date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester (Friday, December 3, 2021). The regulations and procedures for **dropping courses** are available in the Graduate Calendar.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

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 no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. More information: www.uoguelph.ca/sas

Academic Misconduct

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 or faculty advisor. [The Academic Misconduct Policy is detailed in the Graduate Calendar.](#)

Recording of Materials

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

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.

Pandemic Related

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

For information on current safety protocols, follow these links: <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/> and <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Mental Health Services

One out of every five students in Canada experiences some sort of mental health issue at some point in their academic career. If you find yourself facing a mental health crisis, or just need to talk to someone, please consider taking advantage of one of the following resources available to University of Guelph students:

Counselling Services: Visit the Counselling Services website (<https://wellness.uoguelph.ca/counselling>) to get information on resources available to you, both online and in-person. You can also visit them at Health Services (J.T. Powell Building, ext 53244) where they offer individual and group counselling sessions by appointment or walk-in.

Student Support Network: is located in the Wellness & Education Promotion Centre in the J.T. Powell Building and offers confidential, peer-based, drop-in support.

Good2Talk: ([1-866-925-5454](tel:1-866-925-5454)) is a free, 24/7 student hotline that provides professional

counselling and referrals for mental health, addictions and well-being.

Here 24/7: [1-844-437-3247](tel:1-844-437-3247) specializes in assessment, referral and appointment booking and is available 24/7 for crisis support.

You are not alone and you will not be judged for asking for help.