ENGG*3130 Modelling Complex Systems

01

Winter 2024
Section(s): 01

School of Engineering
Credit Weight: 0.50
Version 2.00 - January 16, 2024

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1 Course Details

1.1 Calendar Description

This course explores the application of systems thinking to complex global issues. Key topics will include: systems theory, complex adaptive systems, systems tools, and systems approaches. The course will emphasize the role of computational modelling and simulation as a central tool for applying systems thinking to real-world settings.

Pre-Requisites:	ENGG*2400, STAT*2120, (1 of CIS*1300, CIS*1500, ENGG*1410)
Restrictions:	This is a Priority Access Course. Enrolment may be restricted to the ESC specialization in the BENG and BENG:C programs. See department for more information. Non-BENG students may take a maximum of 4.00 ENGG credits.

1.2 Course Description

This course aims to introduce the basic principles of systems thinking. We will see how complex patterns and behaviours can emerge from simple structures and rules. We will draw on these insights to develop a deeper understanding of the world around us.

Examples presented in class will be chosen to relate directly to students' experiences and focus on current issues. These may include globalization, climate change, conflict, democracy, cryptocurrency, artificial intelligence, public health, and food security.

1.3 Timetable

Lectures:

Tuesday 17:30–18:50 Virtual (Zoom link posted to CourseLink)
Thursday 17:30–18:50 Virtual (Zoom link posted to CourseLink)

Laboratory

Friday 8:30-10:20 Virtual (Zoom link posted to CourseLink)

1.4 Final Exam

There is no final exam.

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2 Instructional Support

2.1 Instructional Support Team

Instructor: Graham Taylor
Email: gwtaylor@uoguelph.ca
Telephone: +1-519-824-4120 x53644
Office: RICH 3515
Office Hours: Virtual office hours can be booked through Calendly: https://calendly.com/grahamwtaylor/engg-3130-office-hours

Lab Co-ordinator: Haleh Vahedi
Email: hvahedi@uoguelph.ca
Telephone: +1-519-824-4120 x54741
Office: RICH 1509

2.2 Teaching Assistants

Teaching Assistant (GTA): Kevin Kasa
Email: kkasa@uoguelph.ca

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3 Learning Resources

3.1 Required Resources

Course Website (Website)
https://courselink.uoguelph.ca/
Course material, news, announcements, and grades will be regularly posted to the ENGG*3130 CourseLink site. You are responsible for checking the site regularly.

Think Python: How to Think Like a Computer Scientist (Textbook)
https://greenteapress.com/wp/think-python-2e/
Allen B. Downey, 2nd edition, Green Tea Press, 2016

Note that this book is available as a free PDF at the URL above.

Think Complexity: Complexity Science and Computational Modeling (Textbook)
http://greenteapress.com/wp/think-complexity-2e/
Allen B. Downey, 2nd edition, Green Tea Press, 2018

Note that this book is available as a free PDF at the URL above.

The Alignment Problem: Machine Learning and Human Values (Readings)
https://brianchristian.org/the-alignment-problem/
Brian Christian, 1st edition, W.W. Norton & Company, 2020.

There are several options for obtaining this book in either e-book or hardcover formats via the URL above.

3.2 Recommended Resources

Thinking in Systems: A Primer (Textbook)
Donella H. Meadows, 1st edition, Chelsea Green Publishing, 2008.

In previous offerings, this was a required text. We have adapted the course due to the ongoing pandemic and optimized it for a virtual offering. Therefore we are no longer using this text. However, it is a wonderful introduction to Systems Thinking and complements the more technical parts of the course.

3.3 Additional Resources

Lecture Information (Notes)
http://uoguelph-engg3130.github.io
Notes to accompany lectures will be available at http://uoguelph-engg3130.github.io. Because these notes are a collaborative effort, they will be updated as the course progresses (usually at least once per week). Every student is expected to contribute to the development and maintenance of these course notes. Information on how to contribute, as well as how to generate the notes in alternative formats (e.g. PDF) will be provided.

Lab Information (Notes)
http://uoguelph-engg3130.github.io
The directives for all the virtual lab sessions will be provided in the online course notes. Deliverables for the labs will be submitted electronically (via CourseLink Dropbox) and are due one week after the lab session.

Miscellaneous Information (Other)

Other information related to Modelling Complex Systems will be posted on the course website.

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4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Synthesize your own definition of systems thinking.
2. Construct a system study, first identifying the system to be investigated and its important behaviours. Identify the purpose of the study, hierarchy, important processes and structures, elements and their interconnections, feedbacks, and environmental context.
3. Discuss real world systems that demonstrate nonlinear, emergent, self-organizing, and resilient behaviour.
4. Choose from a variety of systems tools given a context, justifying the choice.
5. Model and simulate a complex system in software.
6. Write code that demonstrates good software engineering practices: e.g. modularity, efficiency, use of appropriate data structures and algorithms, readability.
7. Communicate a systems approach to modelling both orally and in written form.

4.2 Engineers Canada - Graduate Attributes (2018)

Successfully completing this course will contribute to the following:

#	Outcome	Learning Outcome
1	Knowledge Base	3
1.1	Recall, describe and apply fundamental mathematical principles and concepts	3
1.2	Recall, describe and apply fundamental principles and concepts in natural science	3
1.3	Recall, describe and apply fundamental engineering principles and concepts	3
1.4	Recall, describe and apply program-specific engineering principles and concepts	3
2	Problem Analysis	2
2.1	Formulate a problem statement in engineering and non-engineering terminology	2

#	Outcome	Learning Outcome
2.2	Identify, organize and justify appropriate information, including assumptions	2
2.3	Construct a conceptual framework and select an appropriate solution approach	2
2.4	Execute an engineering solution	2
2.5	Critique and appraise solution approach and results	2
3	Investigation	3
3.1	Propose a working hypothesis	3
3.2	Design and apply an experimental plan/investigative approach (for example, to characterize, test or troubleshoot a system)	3
3.3	Analyze and interpret experimental data	3
3.4	Assess validity of conclusions within limitations of data and methodologies	3
4	Design	5
4.1	Describe design process used to develop design solution	5
4.2	Construct design-specific problem statements including the definition of criteria and constraints	5
4.3	Create a variety of engineering design solutions	5
4.4	Evaluate alternative design solutions based on problem definition	5
4.5	Develop and refine an engineering design solution, through techniques such as iteration, simulation and/or prototyping	5
5	Use of Engineering Tools	4, 6
5.1	Select appropriate engineering tools from various alternatives	4, 6
5.2	Demonstrate proficiency in the application of selected engineering tools	4, 6
5.3	Recognize limitations of selected engineering tools	4, 6
6	Individual & Teamwork	2, 5
6.1	Describe principles of team dynamics and leadership	2, 5
6.2	Understand all members’ roles and responsibilities within a team	2, 5
6.3	Execute and adapt individual role to promote team success through, for example, timeliness, respect, positive attitude	2, 5

#	Outcome	Learning Outcome
6.4	Apply strategies to mitigate and/or resolve conflicts	2, 5
6.5	Demonstrate leadership through, for example, influencing team vision and process, promoting a positive team culture, and inspiring team members to excel	2, 5
7	Communication Skills	1, 7
7.1	Identify key message(s) and intended audience in verbal or written communication as both sender and receiver	1, 7
7.2	Interpret technical documentation such as device specification sheets, drawings, diagrams, flowcharts, and pseudocode	1, 7
7.3	Construct the finished elements using accepted norms in English, graphical standards, and engineering conventions, as appropriate for the message and audience	1, 7
7.4	Substantiate claims by building evidence-based arguments and integrating effective figures, tables, equations, and/or references	1, 7
7.5	Demonstrate ability to process oral and written communication by following instructions, actively listening, incorporating feedback, and formulating meaningful questions	1, 7
9	Impact of Engineering on Society and the Environment	2, 3
9.1	Analyze the safety, social, environmental, and legal aspects of engineering activity	2, 3
9.2	Evaluate the uncertainties and risks associated with engineering activities	2, 3
9.3	Anticipate the positive and negative impacts of introducing innovative technologies to solve engineering problems	2, 3

4.3 Relationships with other Courses & Labs

Previous and/or Current Courses:

ENGG*1500: Solving systems of linear equations, matrix algebra, multi-variable functions

CIS*1500, CIS*2500, CIS*2430, CIS*2520: Object-oriented programming, data structures, analysis of algorithms

PHYS*1130: Analytic problem solving, physical systems

STAT*2120: Bayes' theorem, probability distributions, probability densities, descriptive statistics

ENGG*2400: Modelling and simulation of linear systems

Follow-on Courses:

ENGG*41x: Interdisciplinary design

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5 Teaching and Learning Activities

5.1 Lecture

Tue, Jan 9

Topics: Introduction and overview

Learning Outcome: 1, 2, 3, 4, 5, 6, 7

Thu, Jan 11

Topics:

- Complexity science
- Introduction to reStructuredText, Git, and GitHub

References: Think Complexity, Chapter 1

Learning Outcome: 1, 3, 4

Tue, Jan 16

Topics: Python 1

- IPython, Jupyter notebook
- Arithmetic operators
- Values and types
- Formal and natural languages
- Variables, expressions and statements
- Functions

References: Think Python, Chapters 1-3

Learning Outcome: 4, 5, 6

Thu, Jan 18

Topics: Python 2

- Conditionals and recursion
- Fruitful functions
- Iteration

References: Think Python, Chapters 5-7

Learning Outcome: 4, 5, 6

Tue, Jan 23

Topics: Python 3

- Strings
- Lists
- Dictionaries
- Tuples

References: Think Python, Chapters 8, 10-12

Learning Outcome: 4, 5, 6

Thu, Jan 25

Topics: Python 4

- Classes and objects
- Classes and functions
- Classes and methods
- Inheritance

References: Think Python, Chapters 15-18

Learning Outcome: 4, 5, 6

Tue, Jan 30

Topics: Graphs

References: Think Complexity, Chapter 2

Learning Outcome: 2, 3, 4, 5, 6

Thu, Feb 1

Topics: Small world graphs

References: Think Complexity, Chapter 3

Learning Outcome: 2, 3, 4, 5, 6

Tue, Feb 6

Topics: Scale-free networks

References: Think Complexity, Chapter 4

Learning Outcome: 2, 3, 4, 5, 6

Thu, Feb 8

Topics: Cellular automatons

References: Think Complexity, Chapter 5

Learning Outcome: 2, 3, 4, 5, 6

Tue, Feb 13

Topics: Game of Life

References: Think Complexity, Chapter 6

Learning Outcome: 2, 3, 4, 5, 6

Thu, Feb 15

Topics: Physical modelling

References: Think Complexity, Chapter 7

Learning Outcome: 2, 3, 4, 5, 6

Tue, Feb 27

Topics: Self-organized criticality

References: Think Complexity, Chapter 8

Learning Outcome: 2, 3, 4, 5, 6

Thu, Feb 29

Topics: Agent-based models

References: Think Complexity, Chapter 9

Learning Outcome: 2, 3, 4, 5, 6

Tue, Mar 5

Topics: Herds, flocks, and traffic jams

References: Think Complexity, Chapter 10

Learning Outcome: 2, 3, 4, 5, 6

Thu, Mar 7

Topics: Evolution

References: Think Complexity, Chapter 11

Learning Outcome: 2, 3, 4, 5, 6

Tue, Mar 12

Topics: Evolution of cooperation

References: Think Complexity, Chapter 12

Learning Outcome: 2, 3, 4, 5, 6

Tue, Mar 14

Topics: Guest lecture

5.2 Seminar

Tue, Mar 19

Topics: AI and Machine Learning / Debates 1

References: The Alignment Problem, Chapters 1–3

Learning Outcome: 3, 7

Thu, Mar 21

Topics: Final Project Pitch 1

Learning Outcome: 1, 7

Tue, Mar 26

Topics: AI and Machine Learning / Debates 2

References: The Alignment Problem, Chapters 4–6

Learning Outcome: 3, 7

Thu, Mar 28

Topics: Final Project Pitch 2

Learning Outcome: 1, 7

Tue, Apr 2

Topics: AI and Machine Learning / Debates 3

References: The Alignment Problem, Chapters 7–9

Learning Outcome: 3, 7

Thu, Apr 4

Topics: Final Project Pitch 3

Learning Outcome: 1, 7

5.3 Other Important Dates

Tuesday January 9, 2024: First day of class (No lab this week)
Monday February 19 – Friday February 23, 2024: Winter Break (No lectures or labs)
Thursday April 4, 2024: Last day of class (No lab this week)
Monday April 8, 2024: Last day to drop W24 one-semester courses

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6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Course Notes Development or In-class Debater	10
Reflections and Participation in Debates	10

Name	Scheme A (%)
Video Presentation	10
Lab Reports	40
Final Project (Teams of 3–4 students)	30
Total	100

6.2 Assessment Details

Course Notes Development or In-class Debater (10%)
Learning Outcome: 4, 6

- Each student is expected to make individual contributions to the course notes
- Students will be assessed on the **quantity and quality** of the contributions, which may include:
  - Being the primary note taker for one lecture session
  - Correcting errors or making additions to existing notes (or labs)
  - Opening issues and participating in discussion where more clarification is needed
  - https://guides.github.com/features/issues/
  - Responding to these issues
- Contributions must be submitted as a GitHub pull request https:/help.github.com/articles/about-pull-requests/
- Since there are not enough spots for every student to be a primary note taker, students will have the opportunity to be an **in-class debater** in lieu of primary note taker
- A spreadsheet will be distributed at the beginning of the term to register to be either a primary note taker or an in-class debater. More details on the expectations of each of these roles will be discussed in the lecture period

Reflections and Participation in Debates (10%)
Date: Tue, Mar 12 - Tue, Apr 2

- Between March 12 - April 2 you will be required to read *The Alignment Problem* and contribute to a series of asynchronous and in-class discussion and debates
- If you start the reading on March 12 you are required to read three chapters each week. You are welcome to begin the readings earlier, before debate topics are posted
- You are required to contribute at least one "reflection" on Microsoft Teams for each set of three chapters (i.e. once per week). The reflection can be as short as a single sentence or as long as an essay. Reflections can be responses to that week's discussion questions or general observations, questions, opinions, facts, or anything

else that you feel like writing that is inspired by the reading. Details will be posted on CourseLink
- The in-class debates will be in the lecture periods on March 19, March 26 and April 2

Video Presentation (10%)
Date: Mon, Mar 18
Learning Outcome: 1, 2, 3, 7

- Each student will research and prepare a 5 minute pre-recorded presentation on a prominent systems thinker of their choice
- The presentations will be submitted through the CourseLink "Video Assignments" tool and made available to the instructor and all students for peer review
- This assessment consists of three components
  Instructor Review (75%)
  Peer Review (Received) (15%)
  Peer Review (Given) (10%)
- The **Instructor Review** component of the grade is made according to a rubric that will be distributed in advance of submission
- The **Peer Review (Received)** component of the grade is the average of the peer review received. Peer reviewers are encouraged to leave comments
- The **Peer Review (Given)** component of the grade is based on the feedback given to others. Students who complete a minimum of 5 peer reviews will receive a baseline mark of 8/10. In cases where students go above and beyond by leaving helpful written feedback and/or complete more than 5 reviews, scores higher than 8/10 can be attained. A grade lower than 8 will only be for unhelpful or insensitive feedback
- Further instruction will be provided in the second half of the term (details about signing up will be posted on CourseLink)

Lab Reports (40%)
Learning Outcome: 2, 3, 4, 5, 6

- Lab reports will be submitted as Jupyter notebooks. They are due (by CourseLink Dropbox) exactly one week from the start of the lab
- There will be 13 labs
- Lab reports will be marked according to a ternary scheme:
  High pass (more than average effort, essentially complete)
  Pass (reasonable effort, may be missing some components)
  Fail (less than average effort, mostly incomplete)
- The three lab reports with the lowest grade will be dropped. However, **reports that are not submitted will not be dropped.**

Collaboration Policy

I expect you to try solving each lab on your own. However, when you are stuck on a problem, I encourage you to collaborate with other students in the class, subject to the following rules:

1. You may discuss a problem with any student in this class, and work together on solving it. This can involve brainstorming and verbally discussing the problem, going together through possible solutions, but should not involve one student telling another a complete solution.
2. Once you solve the problem, you must write up your report on your own, without looking at other people's reports or giving your report to others.
3. In your solution for each problem, you must write down the names of any person with whom you discussed it. This will not affect your grade.
4. Do not consult the official solution notebooks or other people's solutions from similar courses. You are encouraged to make use of open source tools and libraries unless otherwise instructed. Don't reinvent the wheel — just give proper attribution. If unsure, ask the instructor. It is ok to consult solutions once your lab is submitted and final.

Use of Generative AI

Generative AI may not be used for labs. It is too easy to ask for a complete solution to a problem and put yourself at risk of academic misconduct if you hand in someone else's solution, even if this was unintended. If you are stuck, refer to the collaboration policy above.

Generative AI may be used for other assessments.

Final Project (Teams of 3–4 students) (30%)
Date: Sun, Apr 21
Learning Outcome: 2, 3, 4, 5, 6

- The project will focus on a case study of complex system modelling
- See the *Think Complexity* book (version 1) for examples of case studies written by students
- There will be three opportunities to pitch a project topic to the instructor and peers in the lecture period on March 21, March 28 and April 4
- Deliverables (report and associated code) are due April 21rd 2024 at 23:59 via CourseLink Dropbox
- More information on the format and expectation of deliverables will be provided on CourseLink

7 Course Statements

7.1 Course Grading Policies

Missed Assessments

If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please email the course instructor. See the undergraduate calendar for information on regulations and procedures for Academic Consideration: https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/

Accommodation of Religious Obligations

If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Consideration of Religious Obligations: https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-accommodation-religious-obligations/

Passing grade

The passing grade is 50%.

Missed labs

If you miss a lab due to grounds for granting academic consideration or religious accommodation, you are expected to complete the necessary work on your own time and still submit a report. There will be no makeup labs.

Questions concerning grades

If you have questions about the grade you received, please ask your TA within one week of the document being returned. However, all requests for re-marking must be made to the instructor. Any item that is re-marked will be re-marked entirely. Therefore it is strongly suggested that you thoroughly review your entire document **before** making a re-marking request. Re-marking requests will not be honoured more than one week after the document has been returned.

7.2 Communication and Email Policy

Please use lectures and labs as your main opportunity to ask questions about the course. Major announcements and/or changes will be posted to the course website. **It is your responsibility to check the course website regularly.**

Electronic communication should be limited to the course forum, however topics of a personal and confidential nature (e.g. grades) should be emailed to the instructor: gwtaylor@uoguelph.ca. Please note that **all email communication must be made through your University of Guelph email account** (i.e. username@uoguelph.ca).

7.3 Use of Generative AI

With the exception of labs, students may freely use generative AI in this course so long as the use of generative AI is referenced and cited following citation instructions given in the assignment instructions. Use of generative AI outside assessment guidelines or without citation will constitute academic misconduct. It is the student's responsibility to be clear on the expectations for citation and reference and to do so appropriately.

7.4 Turnitin

In this course, your instructor will be using Turnitin, integrated with the CourseLink Dropbox tool, to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph.

All submitted lab reports and projects will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing academic misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.

8 School of Engineering Statements

8.1 Instructor's Role and Responsibility to Students

The instructor's role is to develop and deliver course material in ways that facilitate learning for a variety of students. Selected lecture notes will be made available to students on Courselink but these are not intended to be stand-alone course notes. Some written lecture notes will be presented only in class. During lectures, the instructor will expand and explain the content of notes and provide example problems that supplement posted notes. Scheduled classes will be the principal venue to provide information and feedback for tests and labs.

8.2 Students' Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures and lab sessions. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who do (or may) fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

8.3 Lab Safety

Safety is critically important to the School and is the responsibility of all members of the School: faculty, staff and students. As a student in a lab course you are responsible for taking all reasonable safety precautions and following the lab safety rules specific to the lab you are working in. In addition, you are responsible for reporting all safety issues to the laboratory supervisor, GTA or faculty responsible.

9 University Statements

9.1 Email Communication

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

9.2 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. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml

9.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml

Associate Diploma Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

9.4 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.

9.5 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 make a booking at least 14 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.

For Guelph students, information can be found on the SAS website
https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website
https://www.ridgetownc.com/services/accessibilityservices.cfm

9.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

9.7 Recording of Materials

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

9.8 Resources

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

Academic Calendars
https://www.uoguelph.ca/academics/calendars

9.9 Illness

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).