



# MICR\*2420 Introduction to Microbiology

Winter 2018

Sections(s): C01

Department of Molecular and Cellular Biology

Credit Weight: 0.50

Version 1.00 - January 02, 2018

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## 1 Course Details

### 1.1 Calendar Description

This course will introduce students to the diversity of microorganisms, including, bacteria, viruses, and fungi, and the impact of microbes on everyday life. The interactions of microorganisms with the biotic and abiotic worlds will be discussed. Topics will include the roles of microorganisms in host-pathogen interactions in disease, the beneficial aspects of microorganisms in bioremediation and food production, and their application in biotechnology.

**Pre-Requisite(s):** 4.00 credits including (1 of BIOL\*1070, BIOL\*1080, BIOL\*1090, CHEM\*1040)

**Restriction(s):** This is a Priority Access Course. Enrolment may be restricted to particular programs, specializations or semester levels during certain periods. Please see the departmental website for more information.

### 1.2 Timetable

- Lectures: Tuesdays and Thursdays TIME: 10 am - 11.20 am Room: ROZH 103
- Labs: Monday and Tuesday TIME: 2.30 pm – 4.20 pm. Room: SCIE4102
- Lab Cycle One:
  - Monday - Section 0101 - Starts January 15
  - Tuesday - Section 0103 - Starts January 16
- Lab Cycle Two:
  - Monday - Section 0102 - Starts February 26
  - Tuesday - Section 0104 - Starts February 27

### 1.3 Final Exam

Exam time: **April 12, 2018 at 14:30-16:30 (i.e. 2.30 pm – 4.30 pm)**

Location: Please see WebAdvisor for the latest information.

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## 2 Instructional Support

### 2.1 Instructor(s)

**Dr. Lucy Mutharia**

**Email:** lmuthari@uoguelph.ca

**Office:** SC1 3253

**Office Hours:** 11:00 am - 12:00 pm on every Tuesday from January 9, 2018 to April 12, 2018, inclusive.

In order to meet with the instructors outside of office hours, students must make an appointment with the instructor by e-mail or in person. Likewise, you must e-mail your lab TA to make an appointment to see them outside of the set lab hours.

### 2.2 Instructional Support Team

**Lab Co-ordinator:** Rohan Van Twest

**Email:** rvantwes@uoguelph.ca

**Office:** SC1 4113

**Office Hours:** In order to meet with the instructors outside of class hours, students must make an appointment with the instructor by e-mail or in person. Likewise, you must e-mail your lab TA to make an appointment to see them outside of the set lab hours.

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## 3 Learning Resources

### 3.1 Required Resources(s)

#### Microbiology - An Evolving Science (Textbook)

- Microbiology – An evolving Science, 4th edition by J L Slonczewski and JW Foster (WW Norton Inc, ISBN: 978-0-393-61527-2).
- You can also purchase access to the E-book if you prefer this format: The eBook can be purchased through the publisher's website (<http://books.wwnorton.com/nortonebooks/>) or directly through the Bookstore.
- A copy of the book will be available on Library Course Reserve.
- Note: this textbook will also be used in MICR\*2430 Methods in Microbial Culture and Physiology.

#### Laboratory Manual (Lab Manual)

The Lab Manual will be available for purchase at the start of the semester & it may not be on sale later.

**ALL Students - those in Cycle 1 and Cycle 2 - must purchase the lab manual at the start of the semester.**

#### Lab Coat (Equipment)

Students without lab coats will not be allowed in the lab.

### **Courselink (Website)**

<https://courselink.uoguelph.ca>

There is a CourseLink website set up for this course. Students can access course materials including animations from the textbook, lecture slides, check grades, write on-line quizzes, post questions, and see other students' replies. Students are encouraged to post links to news items on microbes relevant to the course. *Note:* instructors *may* post lecture slides on CourseLink. These slides provide *basic outlines* (are NOT notes) of the topic and selected diagrams from the text. Many important points & concepts that are not on the slides will be discussed during the lectures. Instructors will not post summaries of in-class discussions, so it is in your interest to be present in class (or obtain notes from other students if you are absent for any reason).

## **3.2 Recommended Resources(s)**

### **Safety Glasses (Equipment)**

REQUIRED for contact lens wearers and highly recommended to all others.

## **3.3 Shoes**

Students wearing open shoes (exposing skin on tops of feet, soles, toes or heel) will not be allowed in the lab.

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# **4 Learning Outcomes**

## **4.1 Course Learning Outcomes**

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

### **1. ENERGY IN BIOLOGICAL SYSTEMS; METABOLIC PATHWAYS**

- Metabolic diversity exists among eukaryotes, prokaryotes and archaea.
- Describe the metabolic diversity of the microorganisms, in particular, the distinction between lithotrophy, heterotrophy, phototrophy and autotrophy, and the prevalence of extremophiles
- Recognize how the metabolic activities of the bacteria and archaea compare to that of the eukaryotic microbes, including their dominant roles in biogeochemical cycling (e.g. nitrogen fixation)
- Explain why viruses are obligate intracellular parasites
- Relate the inhibitory function of various antimicrobials with their unique metabolic processes (e.g. protein synthesis)

### **2. STRUCTURE-FUNCTION RELATIONSHIPS IN BIOLOGICAL SYSTEMS**

- Macromolecular interactions, structure and function
  - Describe the basic structure and function of various microbial cellular components: e.g. organelles and what they do (this includes recognizing how the prokaryotic plasma membrane fulfills many of the functions of eukaryotic membrane-bound organelles)
  - Describe the inhibitory activities of various antimicrobials on unique microbial

- structures
  - Describe the different classes of viruses and the molecular interactions involved in different viral life cycles, including lysogenic and lytic
  - Demonstrate a basic understanding of the molecular interactions and processes in the innate and acquired immune responses
- The properties of cells are a function of the chemical structures of their constituent macromolecules
  - Identify the distinguishing features of microorganisms, focusing on bacteria, fungi and viruses.
  - Describe the basic principles of bacterial and viral pathogenesis
  - Demonstrate an understanding of how microbial structures and processes are used for diagnostics
  - Demonstrate a basic understanding of the roles of microbial structures in vaccines
  - Describe the differences between the various types of cells of the human immune system
  - Describe how various microbial structures help elude the human immune response
  - Describe the processes of quorum sensing and biofilm formation, and the physiological results
  - Provide some examples of how microbes, their structures or processes have been exploited for biotechnology and food processing
- Cells are the fundamental unit of life
  - Compare and contrast cellular microorganisms with viruses
  - Describe how various microscopic techniques have revealed the structure and function of microorganisms
- Cells, organelles and all major metabolic pathways evolved from early prokaryotic cells
  - Relate the cell structures, metabolic diversity and distribution of bacteria, archaea and eukaryotes to their evolutionary history (including a discussion of the endosymbiont theory)
- Communication within and between cells and their environment
  - Demonstrate an understanding of the essential roles of microbes in the environment & agriculture
  - Discuss the environmental niches to which microbes adapt and how this is done.
  - Describe, with examples, the principles, and different forms, of microbial associations (including parasitism)
- Intracellular trafficking, cellular motility
  - Describe the role of flagella in bacterial motility

### 3. EVOLUTION AND THE FLOW OF GENETIC INFORMATION

- Mutations, recombination and horizontal gene transfer have selected for a huge diversity of organisms
  - Describe the mechanisms of acquisition and spread of antibiotic resistance
  - Describe, at a basic level, the various mechanisms of horizontal gene transfer among bacteria and archaea

- Related organisms have a common ancestor
  - Demonstrate an understanding of the basic information in the Tree of Life, including the positions of chloroplasts and mitochondria in the bacterial domain.
- Different factors affect the frequency of genotypes and phenotypes in a population over time
  - Demonstrate an understanding of how human behavior has impacted the evolution of microbes (including antibiotic resistance and emerging diseases)

#### 4. SCIENTIFIC METHOD

- Experiments: isolation and characterization techniques
  - Understand and appreciate the need for laboratory safety.
  - Be competent with aseptic technique.
  - Understand and be competent in basic axenic cultivation techniques.
  - Understand the various microbiological cultivation and enumeration techniques
- Interpret and communicate scientific data
  - By the end of the course, students should have further developed this ability through performing and reporting the results of laboratory experiments

## 5 Teaching and Learning Activities

This course is designed to capture students' attention and interest; as such classroom teaching will be interactive wherever possible, and centered on microbiology as it pertains to everyday life, current affairs and news items. The lab component consists of five 2-hour labs and will provide hands-on experience as well as demonstrations.

### 5.1 Lectures

Note that the sequence and nature of topics within each section may be subject to minor modifications. Reading material & video links supplementary to the textbook will be provided. Please check CourseLink.

Date	Topic	Lecturer	Chapter/sections
Tuesday January 9	First day of class bits & pieces. Introduction. Test-your-knowledge quiz (don't worry: for fun only!). Description of course outline & independent assignment.  Milestones in microbiology – a discussion of some of the more important historical foundations of microbiology research.	Mutharia	1.1-1.3

Thursday January 11, Tuesday January 16, Thursday January 18, Tuesday January 23	The tree of life and the microbes.  Bacteria, archaea, viruses, fungi and protists - size/structure, unique properties, how they grow, other basic characteristics	Mutharia	1.4-1.5; 3.1 & 3.2 (parts), 3.3, 3.4 (parts); 3.6, 6.1-6.4; 19.1, 20.1-20.6 (parts)
Thursday January 25	Microbial associations 1: introduction to microbial ecology	Mutharia	21.1-21.3
Tuesday January 30	Microbial associations 2: Biofilms and quorum sensing	Mutharia	4.5; 10.5
Thursday February 1, Tuesday February 6, Thursday February 8	Microbes in different niches: water, soil, humans and extreme environments  -factors that shape and define these communities	Mutharia	21.5-21.6; 19.2-19.3 (parts); 23.1-23.2
Tuesday February 13	Observing microbes: light, electron and atomic force microscopy	Mutharia	Chapter 2 (selected sections)
Thursday Feb 15	MIDTERM	MIDTERM	MIDTERM
Tuesday Feb 19-22	Reading Week - No Classes	Reading Week - No Classes	Reading Week - No Classes
Tuesday Feb 27, Thursday March 1st	Microbes in Health and Disease part 1: introducing the immune system  Innate immunity and acquired immunity	Mutharia	23.3-23.6 (parts); 24.1-24.2
Tuesday March 6, Thursday March 8	Microbes in Health and Disease part 2: Example bacteria pathogens  E.coli O157:H7, Vibrio	Mutharia	25.1-25.4 (parts)

	Cholerae, Tuberculosis		
Tuesday March 13, Thursday March 15	Microbes in health and disease part 3: Example viral pathogens Influenza A, HIV	Mutharia	11.2-11.3
Tuesday March 20	Infection Control	Dr. Devon Metcalfe, Guelph General Hospital	27.1-27.2 (parts)
Thursday March 22	Biotechnological applications of microorganisms 1: biocontrol	Mutharia	Reading material will be provided
Tuesday March 27	Biotechnological applications of micro-organisms 2: microbes as medicine	Mutharia	Reading material will be provided
Thursday March 29	Biotechnological applications of microorganisms 3: bioremediation	Mr. P Dennis (SiREM)	Reading material will be provided
Tuesday April 3	Biotechnological applications of microorganisms 4: food and beverage industry	Mutharia	16.1-16.5 (parts)
Thursday April 5	Last day of class: review/catch up	Mutharia	NA

## 5.2 Laboratory Objectives

- In order to complete the course, you must have a passing grade on the laboratory component. Attendance at all scheduled laboratories is compulsory, and will be checked at each laboratory session.
- The laboratory component of MICR\*2420 will introduce some basic microbiological techniques that are important for proper handling and growth of microorganisms. These techniques include bright field microscopy, asepsis, Gram staining, viable counting, selective and differential growth media, and isolation from natural sources. Moreover, concept of microbial communities and communication will also be introduced. Mastering of these concepts and techniques will be essential for future participation in the microbiology program (e.g. MICR\*2430). It is important to come prepared for each lab session by reading and understanding the concepts as this will save much time and also reduce frustration.

## 5.3 Laboratory Content

- Introduction & Laboratory Safety
  - General rules and regulations; standard operating procedures

- Handling cultures of live microbes. Avoiding creating aerosols. Cleaning and disposal of biohazards.
- Hands on: Microscopy. Observation of live organisms
- Microscopy, preparation of specimens and staining of bacteria
  - Handling, Use and Care of a microscope
  - Hands on: use of simple stains & observations of microorganisms.
  - Morphological features of microbes
- Cultivation techniques & concepts of colonial growth & selection
  - Hands on: Culture Media preparation; Aseptic Transfer
  - Streak plate techniques for isolation of Pure Cultures
  - Enumeration
  - Introduction to concepts of diagnostic microbiology
- A survey of the microbial world
  - Viruses and Bacteriophages & Halophiles
  - Hands on: Plaque isolation
- Microbial sensing and communication strategies
  - Hands on: Motility, Quorum-sensing and bioluminescence

## 5.4 Important Dates

- Tuesday January 9th - First day of class
- Monday February 19<sup>th</sup> to Friday February 23<sup>th</sup> – (Winter break - no class)
- Thursday February 15<sup>th</sup> Course midterm exam (during the regular class time)
- Friday March 9<sup>th</sup> – 40<sup>th</sup> day of class; last day to drop courses
- Final Exam TBA (during the period of April 9-14)

## 6 Assessments

### 6.1 Marking Schemes & Distributions

Name	Scheme A (%)	Scheme B (%)
Midterm	25.00	0.00
Lab	20.00	20.00
TopHat Polling	10.00	10.00
Final Exam	45.00	70.00
Total	100.00	100.00

### 6.2 Assessment Details

#### Midterm (25.00%)

**Date:** Thu, Feb 15, During Class

- Writing this exam is highly recommended but it is optional. No penalties if missed.



- Students may view their exam after grades are released but *may not keep the exam*. If you wish to view your midterm exam post-grading, please check D2L/CourseLink for posted details of viewing dates/times.

### Lab (20.00%)

See lab manual for report due dates

### Top Hat Polling (10.00%)

Recorded use of Top Hat polling in the classroom

### Final Exam (45.00%)

**Date:** Thu, Apr 12, 2:30 PM - 4:30 PM, TBA

## 6.3 Independent Assignment

Each student will be required to complete an independent study assignment on a specific microorganism; students will 'adopt' a microbe from a list of choices. Instructions on the assignment will be available to download from the course CourseLink site in the first week of the semester. This assignment will allow students to develop independent thinking skills; it will be graded as a component of the final exam.

## 6.4 Midterm

- The midterm exam is set during regular class time on February 15<sup>th</sup> 2017, as shown on the course schedule.
- The midterm is worth 25% of the final course grade
- No alternate date or time will be set for any reason. Conflicts (e.g. due to pre-scheduled UoG related academic trips) must be reported to the instructor **before or on Jan 12, 2017**. Please submit a note from the responsible instructor /coach indicating the dates the student is away and the nature of the event.
- Midterms / assignments in other courses are NOT considered conflicts!

## 6.5 Top Hat Learning tool

- This course will be using a platform called Top Hat which is an educational technology tool for real time polling, answering questions and evaluating comprehension of the subject matter. It is also a chat tool for discussion during the class hour. You can use your laptop or access the mobile interface using a tablet or cell phone. There is the option to purchase a one-semester subscriptions at Canadian \$26 (once subscribed, you can use the tool for all classes using Top Hat).
- Participation in the online chats is (required) and will account for up to 10% of your final mark. Students in other classes have reported that participation has increased their engagement in class, while also contributing to their understanding of key concepts.
- Respectful communication is expected when participating in the lecture chats. While you are able to choose an alias and remain anonymous to your classmates, your user information will be available to course instructors and administrators. Please be thoughtful and courteous and ensure that your contributions are appropriate. Foul language, trolling or other unacceptable behaviour will result in a ban from Top Hat, and you will be

identified by the system for the purposes of reporting academic misconduct.

- Use of Top Hat learning tool helps to increase engagement and thus understanding in the classroom and hence the focus will not be placed on answers that are right or wrong, but on *participation in class*. If you do not come to class, you will be unable to respond to the questions posed in class. Questions will be posed an average of 2-3 times per class, but not necessarily in all classes. Recorded responses will be graded thus:
  - 0-25% of Top Hat polling response throughout course = 0% of final grade
  - 25-50% of Top Hat polling response throughout course = 4% of final grade
  - 50-75% of Top Hat polling response throughout course = 7% of final grade
  - 75-100% of Top Hat polling response throughout course = 10% of final grade
- Note that signing into class for a friend to record participation in their absence will result in forfeit of all Top Hat polling grades for the course for all parties involved, and may result in sanctions under the university's policy on academic misconduct

## 6.6 Evaluation of Laboratory Work

- The laboratory experience will constitute 20% of the final course mark, and it is comprised of:
  - Pre-lab participation on CourseLink: 5%
  - Laboratory quizzes: 5%
  - Lab exercises: 10%
- The results you obtained from each laboratory exercise must be recorded in your manual. You will hand in your laboratory manual for marking at the end of your Week 5 laboratory session.

## 6.7 Pre-Laboratory Quizzes Hosted by CourseLink

- These are done online, through the course CourseLink site and must be attempted prior to the commencement of the laboratory (i.e. before 2:30 p.m. on lab day). Each question is assigned a number of points and the range of points accumulated will be assigned a mark (out of 5%) at the end of the Week 5 according to the following point distribution:
  - 5% for 90-100 points accumulated
  - 4% for 80-89 points accumulated
  - 3% for 70-69 points accumulated
  - 2% for 50-59 points accumulated
  - 0% for less than 50 points accumulated
- Four quizzes, 5 minutes in duration will be conducted at the beginning of the lab period on Week 2 through Week 5. Therefore, attempt the pre-lab questions on CourseLink and carefully read through the exercises before each laboratory session.

## 6.8 Final Exam

The Final examination is compulsory and will be comprehensive, i.e. the exam will cover ALL lecture materials and readings BEFORE & AFTER the midterms; the final exam will also include questions based on the lab exercises, lab content & information presented in the lab manual and questions pertaining to the independent study assignment (5% of final exam grade).

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# 7 Course Statements

## 7.1 Re-grading of Exams

For each question on the exam paper, you will be asked to mark the answer/response on both the Scantron sheet and the examination paper. Scantron sheets should be marked with pencil, however please note that exam papers marked with pencil cannot be re-graded.

## 7.2 Student ID

You MUST bring your valid student ID card to EVERY exam, and present it to an invigilator when handing in your paper.

## 7.3 Absence & Illness

- Students who miss lectures are expected to obtain the materials through reading or discussion with colleagues. Where requested, Academic Consideration can only be given for missed labs or lecture questions, providing appropriate supporting / written (and signed) documentation is submitted as soon as possible following the event/circumstance for which consideration is requested.
- In the case of a missed final exam, the student must fill out a "Request for Academic Consideration" form, available in the BSc academic advising office. Consideration is only granted by the Academic Review Subcommittee, as described in section VIII of the U of G Undergraduate Calendar, Undergraduate degree regulations & procedures: <https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>.
- In addition to providing information on the university academic policies and procedures, the section (<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>) describes what constitutes Academic misconduct, plagiarism & associated penalties. Students are strongly encouraged to become familiar (and understand) this information as ignorance of the rules is not an accepted defense for committing academic misconduct.
- Electronic recording of lectures is expressly forbidden except with prior consent of the instructor. When permitted, the recordings are to be used solely for the use of the authorized student and may not be reproduced or transmitted to others without the express written permission of the instructor. Please do not use electronic media in the class except for the sole purpose of the material covered (e.g. following the lecture slides, participating in REEF polling, or taking lecture notes)

## 7.4 Laboratory Responsibilities

- Working in the lab - You will share an equipment locker with a fellow student, and carry out experimental work cooperatively. It is important that both you and your partner fully participate in all laboratory experiments in order to obtain the maximum benefit. You should always monitor your partner's work to ensure that you do not miss any important experimental techniques and observations.
- Attendance – Laboratories form an essential and integral part of this course. In order to pass the course, you must attend the scheduled labs. Attendance at the scheduled

laboratories will be checked at each laboratory session.

- If you are ill, or have an unexpected reason to miss a lab, please try to e-mail Rohan to let him know that you will not be present that day. Documentation to support your absence may be requested and failure to provide documentation will result in a grade of zero for that lab. In the event of an unavoidable absence, we also strongly encourage you to enquire about making up that material another day and time.

## 7.5 Laboratory Attendance

- Laboratories form an essential and integral part of this course. In order to complete the course, you must have a passing grade on the laboratory component. Attendance at all scheduled laboratories is thus compulsory, and will be checked at each laboratory session.
- Undocumented absences from the lab: Absence from the lab for other than legitimate, fully documented reasons (illness, compassionate reasons, etc.), or unless previously arranged with the Lab Demonstrator, will result in your being given a zero grade for that lab. If you miss more than one lab without documentation, you cannot be given credit for the lab component of the course.
- Documented absences from the lab: If you are ill, or have an unexpected compassionate reason for missing a lab, please e-mail your Lab Demonstrator [rvantwes@uoguelph.ca](mailto:rvantwes@uoguelph.ca) to inform him of your absence. However, even if you have a fully documented medical or compassionate reason for missing a lab, we strongly encourage you to complete the lab by contacting the Lab Demonstrator as soon as possible to re-schedule in another lab section or during lab cycle 2. Those students that miss more than one lab in Lab Cycle 2 may be able to repeat the lab work in the following semester if academic consideration is granted. The alternative course of action is to drop the course (after the 40<sup>th</sup> class day, this can be done via the B.Sc. Academic Advising office, SCIE 1329).
- Academic conflicts with the lab: If you have a known legitimate academic activity scheduled at the same time as your lab (e.g. a midterm in another course, a co-op job interview), you should contact the Lab Demonstrator well ahead of time and request that your lab be re-scheduled.

## 7.6 Technology in the Classroom

Feel free to bring your laptop to lectures, but only use it in a manner that will not disturb those around you. Please do not use your laptop for anything other than activities related to this course. Turn your cell phones off, or put them on silent, and do not text-message during class.

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# 8 Department of Molecular and Cellular Biology

## Statements

### 8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

## 8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.  
<http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

## 8.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.  
<https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.uoguelph.ca/~ksomers/>

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# 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 regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

## 9.3 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. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate

Calendar.

## 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 book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: [www.uoguelph.ca/sas](http://www.uoguelph.ca/sas)

## 9.6 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 or faculty advisor.

The [Academic Misconduct Policy](#) is detailed in the Undergraduate Calendar.

## 9.7 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.

## 9.8 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.

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