MAT136H1: Calculus 1(B)

University of Toronto Winter 2019

> *But just as much as it is easy to find the differential of a given quantity, so it is difficult to find the integral of a given differential. Moreover, sometimes we cannot say with certainty whether the integral of a given quantity can be found or not.* – Johann Bernoulli

Paradoxes involving the infinite have intrigued thinkers since ancient times. Greek philosopher Zeno, for example, thought of an arrow aimed at a target. The tip of the arrow must first travel halfway to the target, then halfway again, and so on. This halving process continues indefinitely; thus, he said, the arrow does not reach the target. In another story, a genie lights a candle one minute before midnight. After 30 seconds have passed, the flame is extinguished. Fifteen seconds before midnight, the genie relights the candle, and again, halfway to midnight, the genie puts the flame out again. If this continues as midnight approaches, is the candle lit at midnight? These paradoxes rest on the intuitive idea that the physical properties of distance and time are infinitely divisible; how can we make sense of them?

Calculus gives us tools allow us to come to grips with the infinite, and to resolve paradoxes like these. It also gives us a way to understand a wide range of physical, biological, social, and chemical processes by dealing with the subtle presence of the infinite. In this course we will study definite integrals – objects that describe the infinite – to make sense of and solve philosophical and scientific problems.

Contents

General Course Information

> *The key is not to prioritize what's on your schedule, but to schedule your priorities.* –Stephen Covey

Key Dates and Due Dates

Last day to add or make section changes	January 20
ACT Part 1: Choice of papers	Jan 21–25 (in tutorial)
Remainder of ACT Part 1	Jan 28–Feb 1(in tutorial)
Term Test	February 11, 6:00-8:00pm
Reading Week (no classes)	February 18–22
ACT Part 2	March 11–15
Last day to cancel courses without academic penalty or change credit / no credit option	March 17
Draft of ACT Poster	March 18–22 (in tutorial)
Final ACT Poster	March 25–29 (in tutorial)
Last Day of Classes	April 5

Also see the course website and section syllabus for more due dates.

Website and Email

The course website is located on Quercus, at `q.utoronto.ca`. It will contain information and course resources, including office hours, tutorial information, homework, assessments, test review packages, and important announcements.[1] **You are responsible for checking it daily**. We will also send important announcements via Quercus, and recommend that you update your notification settings so that all announcements are emailed to you.

The University has a policy requiring that students have a U of T email address and that you check it regularly.[2] Administrators and members of the instructional team will only respond to emails sent from your official U of T email address, so be sure to use it when communicating with them. All questions related to course elements common to all sections should be directed to `admin136@math.toronto.edu`.

Textbook and Software

The required textbook for MAT136 is *Calculus: Single Variable*, 7th edition by Hughes-Hallett et al; it is the same textbook that was used in MAT135 in the Fall of 2018. This textbook is available in a package at the U of T Bookstore (214 College Street) in either a physical loose-leaf or enhanced e-text form; either form is acceptable for the course, but you must use the 7th edition.[3] Note that this is a different text than what was used in the 2017-18 academic year.

Graphing will help you check your answers to homework problems and prepare your solutions to the Applied Communication Tasks. The open-source software *Geogebra* is a good free option, and will be used by many instructors for in-class demos. You can download it from `www.geogebra.org/download` for free. The desktop application 'GeoGebra Classic' is the most versatile option, but there is also a graphing calculator app for mobile devices available. Your instructor might ask you to bring a laptop of phone with the app to class.

[1] Quercus is the UofT name for Canvas; if you need help with a topic related to Quercus, you should do a search for Canvas.

[2] If you do not have an official UofT email address and student card activated, your WeBWorK grades will not be recorded by the system.

[3] We recommend the physical, loose-leaf copy but know that many students prefer to have an electronic copy.

Finally, all lecture sections will be using the classroom response system Top Hat to record votes to in-class questions. If you are taking MAT136 next semester or other courses that use Top Hat, you should sign-up for a year-long subscription as it is more cost effective than purchasing it term-by-term. For sign-up instructions and codes, see the Top Hat instructions posted on the course website.

What you will learn in MAT136H1

> *All sorts of things can happen when youre open to new ideas and playing around with things.* –Stephanie Kwolek

Learning Goals

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

- understand, use, and translate between multiple representations of integrals, differential equations, and series
- solve complex and novel problems using tools from differential and integral calculus
- build a mental framework of calculus that serves as a foundation for future learning
- see yourself as a confident and capable user and communicator of mathematics
- develop skills and habits for effectively learning mathematics

More specific Learning Objectives are included on each homework set.

Course Topics

We will work to answer the following questions.

1. Integrals: What is the relationship between rates of change and the areas of curved shapes? §5.1–5.4, §6.1–6.4
2. Computing Integrals: How can we efficiently compute integrals? §7.1–7.2; supplementary CAS section; §7.5–7.7
3. Differential Equations: How can we understand relationships described using rates of change? §11.1–11.7
4. Series of Numbers and Functions: How can we describe arbitrary functions as infinite polynomials? §9.1–9.5; §10.1–10.3
5. Applications of Integrals: How can we use integrals to solve geometric and scientific problems? §8.1, 8.2, 8.4, 8.7, 8.8

Assessment

> *Courage is like – its a habitus, a habit, a virtue: you get it by courageous acts. It's like you learn to swim by swimming. You learn courage by couraging.* – Marie M. Daly

Grading

Your final grade will be calculated according to one of the following grading schemes, depending on which one results in a higher grade

Scheme 1	Scheme 2	Assessment
8%	8%	WeBWorK Homework
12%	12%	Applied Communication Task
8%	8%	In-Class Responses (Top Hat)
2%	2%	Post-Class Homework
30%	20%	Term Test
40%	50%	Final Exam

For information about how the percentage grade translates into letter grades and grade point values, see the grading scale available at
`http://www.artsci.utoronto.ca/newstudents/transition/academic/grading`

WeBWorK Homework

In order to learn math, you must do math. For each lecture, you will be assigned a homework set with pre-class reading and problems (to be completed **before** the lecture), and after-class problems (to be completed **as soon as possible** after the lecture).

The pre-class portion of the homework problems will be completed through the online homework system WeBWorK. It will provide you with instant feedback on how well you have met pre-class learning goals. Here is some information about using the system:

- The WeBWorK homework problems will be available on Quercus.
- You will have eight attempts for each problem.[4]
- WeBWorK sets for your lecture section will be due according to deadlines set by your instructor; see Quercus for details.
- To account for sickness, late course additions, technical problems, or other circumstances that may prevent you from completing WeBWorK, 20% will be added to your WeBWorK grade at the end of the term, to a maximum of 100%.
- See *How to Enter Answers into WeBWorK*, posted on the course website, for additional information about how to type mathematics notation

[4] if you haven't figured out the question after 8 attempts, it is a good indication you are not understanding the problem and should seek help from office hours or a study group. Part of the point WeBWorK is to help you find where your understanding is weak.

- Do not click the 'Email Instructor' button on WeBWorK; these emails will automatically be filtered into our junk mail and not receive a reply.
- The WeBWorK due dates are on your section syllabus. They may not be the same as those that appear on the WeBWorK website, due to some complications in using the system in a large multi-section course.

In-Class Responses (Top Hat)

Peer Instruction is one of the activities that we will be doing during lecture. You will be presented with a conceptual problem – often one that is known to be an area of common confusion or misunderstanding – and asked to vote on your answer to the question individually. After voting, the class will either discuss (if a clear majority of students gets the correct answer) or will take a few minutes to discuss the answer with a partner until you arrive at a consensus.

Research has demonstrated that this technique increases students' conceptual understanding in calculus, supports better retention of knowledge, increases course satisfaction, makes students more likely to complete a course, and increases student engagement.

Your participation and responses to questions will be recorded using the classroom response system Top Hat. 8% of your final course grade will come from your responses to questions in-class, as recorded in Top Hat. You must attend the section you are enrolled in for your participation and responses to count; therefore **you should ensure that you are registered in a section that you can attend**.

Since you may have legitimate circumstances that prevent you from attending class or days when you forget to bring technology to class, your participation grade will be rounded up to 100% for the purposes of your final course grade as long as you participate in more than 80% of classes. (If your grade is between 0% and 80%, it will remain unchanged in the final grade). This generous rounding is meant to account for all excused absences and technological problems you may have; no other documentation will be accepted. This also applies to students who register in the course after the start of the semester; no additional grades will be dropped for missed classes.

Post-Class Homework

You are also required to complete the post-class homework questions for the class. To help you track your progress on the post-class homework sets, you will indicate when you have complete the post-class homework on Quercus. You must indicate that you have completed each of the Post-Class homework by the Wednesday *following* the homework due date in order to receive credit for completing the homework. The Post-Class homework will not be submitted.

Applied Communication Task

This semester, there will be one Applied Communication Task (ACT). You will work on and present its components in tutorials.

In this ACT, you will have the opportunity to research a topic that you personally find interesting by reading scientific literature, and analyze a quantitative scientific paper describ-

ing a phenomenon in which the authors use a differential or integral equation in order to describe the results. You will develop your visual and oral presentation skills by presenting the mathematical model used in a graphical format on a poster to your peers and TAs.

This project will enable you to:

- approach calculus concepts appearing within current scientific literature
- understand the formats of scientific papers and posters
- choose appropriate visual representations of quantitative information
- be attentive to your audience when communicating information
- become more confident and capable mathematical communicators, by communicating quantitative information both orally and in writing

This ACT will have multiple parts in order to help you develop a meaningful final Poster Presentation.

In Part 1, you will brainstorm topics that catch your interest, and then undertake a search of scientific literature to identify 3 papers which you are potentially interested in presenting. You will take notes on these papers, and then pick one of them to write a short introduction and conclusion about, and present this summary to your peers.

In Part 2, you will work with a partner to develop a graphical representation of the mathematics used in a scientific paper of your choice, and present this to your peers.

Finally, you will work with a partner to put together the previous components into a short scientific poster summarizing the use of mathematics in a paper of your choice. More in depth descriptions of each part are found below.

Detailed instructions and grading guidelines will be posted on the course website and distributed in tutorials.

Term Test and Exam

The Term Test and the Exam are common to all sections of MAT136 and will primarily consist of problems. Your solutions to these problems will be graded for both correctness and clarity. For many problems, it will not be enough to simply produce a correct final answer: you will need to show how you arrived at your answer by providing a complete solution. Likewise, you may still receive partial marks even if you do not arrive at a correct final answer but demonstrate an understanding of the key ideas or progress towards the correct answer. Not all questions will be of equal difficulty or be worth the same number of points. There will also be some questions that do not require an explanation, such as true/false or multiple choice questions. When an explanation is *not* required, it will be clearly marked in the problem.

The questions on the Term Test and Exam will be based on the Learning Goals and Objectives given on each homework set. In this course, you will be assessed based on your mastery of these learning objectives, not against other students in the class. Therefore your grades will not be 'curved' up or down: as instructors, we would be delighted if the average was "high" and a large portion of our students displayed mastery of the content! Since we are measuring your performance against these set criteria, we will not be releasing average grades or other information about how the class as a whole performs. According to Dr. Jay

Parkes, an renowned expert in college assessment "releasing class-level performance data is not only irrelevant but it draws students' focus away from their individual mastery of learning objectives to how their mastery compares to others."

Term Test and Exam cover sheets and sample problems will be posted prior to the test so that you can familiarize yourself with the specific instructions and style of problems. The sample problems posted will be more indicative of what you can expect on the Term Test and the Exam than MAT136 exams prior to Winter 2018. Further details on the administration of these assessments will be given in the weekly administrative announcements and posted on the course website.

Academic Integrity

Academic integrity is fundamental to learning and scholarship at the University of Toronto and beyond. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves. Violating standards of academic integrity will prevent you from learning material, refining your problem-solving skills, and developing self-sufficiency and self-esteem.

The MAT136 instructors and TAs are strongly committed to assigning grades based on our students' honest efforts to demonstrate learning in this course. Academic dishonesty in any form will thus not be tolerated in this course.

Students are expected to know what constitutes academic integrity: familiarize yourself with the information available at (`http://www.artsci.utoronto.ca/osai/students`). It is the rule book for academic behaviour at the U of T. Potential offences include, but are not limited to:

- Bringing notes or hints into a term test or exam, including notes on your hand or on a piece of paper
- Having another student write a term test or exam for you, or impersonating someone else in writing one of these assessments
- Allowing someone else to complete your WeBWorK homework problems, or completing it for someone else
- Falsifying Applied Communication Task records or taking unattributed text from somewhere else
- Replying to Top Hat questions remotely
- Looking at someone else's answers on a test or exam
- Communicating with another student during a term test, or exam
- Submitting fraudulent medical notes
- Misrepresenting reasons for being late or absent for a term test or exam
- Submitting an altered test or assignment for re-grading

- Violating test or exam procedures

The following actions are *not* offences in this class.

- Discussing questions from homework with classmates, building off of each others' ideas
- Using online resources to help you understand the content of the course or homework problems

In accordance with the University's Code of Behaviour on Academic Matters, we will actively investigate any suspected cheating, plagiarism, misrepresentation or other dishonest practices. The consequences for academic misconduct can be severe, including a failure in the course, a notation on your transcript, suspension, and expulsion.

If you have any questions about what is or is not permitted in this course, please do not hesitate to contact your instructor or TA. Students are usually reluctant to report incidents of academic dishonesty. As we are working together to preserve the fairness of this course, we encourage you to let us know (anonymously, if necessary) if you observe behaviour that you feel might be unethical. Your name will be held in confidence.

Grading

We will be using the platform CrowdMark for grading in MAT136. Using this platform helps increase fairness and efficiency. When an assignment has been graded you will receive a URL via email where you can view your original assignment and the grader's comments and grades. All grading is done by TAs and instructors in MAT136.

Course Activities

> *If I have seen further, it is by standing on the shoulders of giants.* - Isaac Newton

Preparing for Class

The homework for each class will consist of readings and several problems.

Your personal notes on the assigned readings and problems should contain enough detail to be easily understood by you at a later time. For example, you will want to refer to these problems when preparing for the Term Test, and the Final Exam. While you do not need to write your solutions in complete sentences, they should be easy to follow and clear.

Reading

You will be assigned readings to prepare for each lecture. Lectures will help to clarify important or confusing parts of the reading, but will not recap every aspect of the reading. Completing the reading before each lecture is important to fully benefit from lectures.

Why should you read *before* class rather than after class or when you are studying for an exam? It leaves room during the lecture for the most important learning activities. 36 hours is not enough time to cover all of calculus in depth. By coming to a lecture with a basic understanding of the material, you will be able to focus on the big questions that are difficult

to learn on your own, such as how the content fits into the broader narrative of calculus, points that students typically find confusing, and common misconceptions.

The ability to understand mathematical texts is an important skill for *any* future mathematical study. This skill is vital for at least three reasons.

1. **Future Learning**. When you need to learn a mathematical concept on your own, your main resources will be written.

2. **Efficiency**. In an ideal world we might try to discover mathematics itself, but this would be impractical. Calculus, for example, took hundreds of years to develop and another 200 years to gain a firm footing. The great abundance of mathematical writing available allows us to learn from the experts.

3. **Learning to Communicate**. Just as reading many stories makes you a better storyteller, reading a lot of mathematics makes you a better mathematical communicator.

Problems

Problem solving is at the heart of mathematics, and allows us to apply our knowledge of math to science, social science, and beyond. Developing problem solving skills is just as important as the content that we will be covering, and can be used as you work through courses in any major or pursue any profession. Throughout this course, you can expect to encounter many unfamiliar problems from math and beyond, and it won't always be clear right away how to apply the course content to solve these problems.

The problems on homework will be of varying difficulty: some will be easy warm-ups to the reading or simple computations, while others will involve complex situations and require problem solving skills. The pre-class portion of the homework will be completed and submitted via WeBWorK; you will track your progress on the post-class homework by indicating when you have completed a homework on Quercus (they are not submitted). Solutions to the post-class problems will be available approximately one week after the assignment is due for all sections.

Lectures

You will attend three hours of "lecture" ("class") each week of the course. Each lecture is taught by a course instructor.

The lectures of this course will support your learning of calculus in a number of ways. During lectures, we will motivate new material, clarify difficult concepts, test your understanding of calculus prior to the major assessments, and give you the opportunity to meet with fellow students. You should come prepared to not only hear about math during lectures, but to think and engage with math. While your instructor will use some of the lecture time to explain the material, you may also be expected to actively engage in learning by working on problems, discussing ideas with your fellow students, and sharing your thinking with the class.

The more you prepare for and engage in class, the more you will get out of it. The following are basic guidelines for ensuring that you and your classmates get the most out of class.

- Be sure not to speak when someone else is speaking during class. While it might seem as though no one notices, even one person whispering in the back of the classroom can be a significant distraction for the entire class, and can side-track learning. If you have a question about the class, pose the question to the entire class - not just to your neighbour.
- Please be on time to class. Coming in late means that you may miss important information and it disrupts the learning of other students.
- Likewise, do not leave early at the end of class or pack up before class has ended. If you *must* leave one class early for an appointment or other special commitment, sit near the door to minimize disruptions.
- Bring pencils, paper, textbook, a scientific calculator, and a device to connect to Top Hat to every class.
- If you use technology during class, make sure that it is always for an in-course use. While it may seem harmless to check your email or a game update, it can be distracting for students around you; research has demonstrated that the learning of students who can see the laptop of another person engaging in off-task behaviour is damaged.

Tutorials

Each week, you will attend one tutorial, a class of about 30 students from across MAT136H1 lecture sections. The purpose of tutorials is to improve your problem-solving and communication skills, and to provide you opportunities to collaborate with other students. You will also be submitting and working on components of Applied Communication Tasks during tutorials.

Each tutorial is 50 minutes, starting at 10 minutes past the hour and ending on the hour. **Tutorials will begin on Tuesday, January 14.** Be aware that tutorials take priority over other tests, so you should not skip your tutorial to attend a test in another course. If you need to miss a tutorial due to illness or another emergency, you do *not* need to notify your Teaching Assistant. If you miss a tutorial where you are supposed to submit a component of an Applied Communication Task, you must attach official documentation verifying your absence to your assignment submission in the next tutorial.

If you are more than 20 minutes late for a tutorial, you will not be permitted to submit assignments due in tutorials.

Instructors and Teaching Assistants

> *Let us choose for ourselves our path in life, and let us try to strew that path with flowers.* – Emilie du Chatelet

Instructors

The instructors for MAT136 are shown below. Before emailing us, be sure to check the guidelines for asking questions at the end of this syllabus. In particular, note that instruc-

tors and TAs will **not** answer questions about course content or questions that can be answered by reading the syllabus via email; such inquiries will be deleted without response. Also, any questions related to the common course components should be submitted to admin136@math.toronto.edu.

You are expected to treat all members of the instructional team with respect. Examples of disrespectful behaviour are speaking over someone, using inappropriate language, leaving a tutorial early, or arriving late.

Instructor	**Email**	**Section(s)**
Prof. Iseppi	roberta@math.utoronto.ca	LEC0101
Prof. Esentepe	ozgur.esentepe@mail.utoronto.ca	LEC0301
Prof. Mayes-Tang	mayes-tang@math.toronto.edu	LEC0401
Prof. Richards	larissa.richards@mail.utoronto.ca	LEC0501
Prof. Dykes	kathlyn.dykes@mail.utoronto.ca	LEC0601
Prof. Zhu	ren.zhu@mail.utoronto.ca	LEC0701
Prof. Tolmachov	tolmak@math.utoronto.ca	LEC0801
Prof. Kundu	dkundu@math.utoronto.ca	LEC0901
Prof. Pushkar	ppushkar@math.utoronto.ca	LEC1001
Prof. Pike	jpike@math.utoronto.ca	LEC1101
Prof. Liu	sliu@math.utoronto.ca	LEC5101

Teaching Assistants

Teaching Assistants ('TAs' for short) are an important part of the teaching team for MAT136H1. TAs are advanced undergraduate or graduate students who are experienced in calculus. They play a number of roles, including:

- leading tutorials (each tutorial will have a dedicated TA)
- grading assessments
- answering questions in the Math Aide Centre

How to Succeed in MAT136

A ship in port is safe, but that's not what ships are built for. –Grace Hopper

Top 10 Tips for Success in MAT136

1. Work with other students and talk about calculus with them
2. Do many problems, and focus on *why* a solution works rather than the final answer
3. After every lecture or tutorial, take 30 seconds to summarize what you have learned
4. Read the assigned textbook reading *before* coming to class and keep up on the assigned problems

5. Instead of re-reading, test yourself on the material by solving additional problems and by explaining it to someone else
6. Use examples as a road map: rather than focusing on the individual steps, think about how they are connected to the overall goal of the problem
7. 'Interleave' your practice: mix up the types of problems, solutions, and approaches as you review rather than only reviewing one section at a time.
8. Do not 'cram': complete reading and homework when they are assigned
9. Think in class: don't be a passive listener
10. Use the free resources available to you as a student of University of Toronto (see the Resources section of this syllabus)

How to improve your problem-solving skills

The key to improving your problem solving skills is to work through many problems. When faced with a new problem, resist the temptation to immediately search the textbook or the web for a similar problem. Instead, start by asking yourself what you know and identifying what the goal of solving the problem is. Problem-solving is all about finding a path between what you know and what you want to know, and developing strategies to build this path is a key to success. You will be discussing specific problem solving strategies during many tutorials.

Working with your classmates can be very valuable in getting past roadblocks and improving your problem-solving skills. Simply discussing a problem with someone else can help you better understand the problem and a solution. Remember that the process of solving the problem is more important than the answer.

How to get the most from lectures

During classes, you may be asked to participate in tasks like thinking about problems, talking to other students, writing a solution, or explaining a concept to the class. By approaching these activities with enthusiasm and doing your best, you will not only help your own learning but also the learning of those around you. In a large class, it is easy to feel as though you are just one in a crowd and that what you do is not noticed by anyone else. However, if you change perspectives and think about how you have been influenced by others in large groups you'll see this isn't true: you notice your neighbour browsing the internet on their laptops, are distracted by loud coughing fit or cellphone reminder, wonder what a whispering group of people across the room is talking about, or look over when you hear someone packing their bags up. You've probably also experienced the effect of small behaviours spreading in a crowd. When you return to thinking about your own behaviour, you should be able to see why what you do matters to others.

Creating a positive learning environment requires the participation of everyone involved. Your instructor will set a structure and activities to help you learn calculus well. By actively engaging in course activities and working with your classmates, you will not only help your own learning but theirs' as well.

How to use assessments for learning

The Term Test and the Final Exam will help to accomplish the Learning Goals of this course in several ways. For example, they will:

- Encourage you to push yourself to understand difficult concepts and to complete *many* challenging problems
- Help you identify areas where your knowledge and problem solving skills are already strong, and where you still have room to grow
- Work with others to deepen your understanding
- Ensure that you have the necessary foundation for building on your knowledge in MAT135, MAT136, and in courses that require calculus as a prerequisite

There are 3 important phases of the test-learning cycle. They apply to any assessment.

1. **Preparation**: *All* learning activities that you engage in prior to the assessment fall into this category, including reading, completing problems, preparing for and attending lectures and tutorials, working with other students, and reviewing past assessments. It also includes ways of preparing yourself to take a test, such as getting a good night's sleep, scheduling meals and snacks so that you aren't hungry during the test, and exercising so that you have the energy that you need.
2. **Performance**: This is what comes to mind when we think of 'taking a test' or 'completing an assignment'. Make sure that you think about what the test-taking environment will be like and incorporate that into your practice. For example, if you usually study while lying down or with music in the background try to do some practice in a silent environment in a chair similar to that you will be in during the test.
3. **Reflection**: An assessment isn't over when you hand it in! Write some quick notes to yourself about what went well, what didn't go well, and what topics you need to review. Once you receive your test back, review your solutions along with the feedback you received and sample solutions and develop a strategy for better learning the material. There is always room for improvement.

Where to find support

There are several free sources of support available to help you learn calculus.

Working with Peers

One of the best ways to learn math is to work with other students. This will give you the opportunity to explain and talk about mathematical concepts, check your own understanding and avoid overconfidence, and get different perspectives on the course material. To make group study sessions effective, be sure that you discuss how problems are solved or why a solution makes sense, rather than just trading final answers.

It is useful to develop a network of different students to work with: don't be afraid to introduce yourself to others in your class or tutorial sessions and ask if you can trade contact

information. It might take several tries to find a study group that works for you, and you might find a variety of study groups successful.

Recognized Study Groups

The Recognized Study Groups Program can help you join or start a study group. It provides a regular study time, gives you the opportunity to meet people from across the University, and you can even receive a co-curricular credit for participating.

Instructor Office Hours

An 'office hour' refers to a period of time (usually 50 minutes or one hour) that an instructor is available to discuss course content and answer questions. In MAT136, these will be 'drop-in hours'.

You may attend the office hours of any instructor in the course. If they are speaking with another student, feel free to come in and listen. You do not need to make an appointment, but please come to office hours prepared with questions, your notes, textbook, and any other materials you might need.

See the course website for office hour locations and times.

Math Aid Centres

The main Math Aid Centre is located in the Physical Geography building (PG), Room 101. During times listed on the Office Hour Calendar, TAs for MAT136 will hold office hours there. We encourage you to also use the Math Aid Centre to work with other students in the course and to meet new classmates. When you come to the Math Aid Centre, please bring specific questions, your textbook, homework assignments, and any other material you may want to refer to. If the TA is speaking with another student, please join them at the table and listen to the discussion.

College-specific Math Aid centres are also available at several Colleges. See `http://www.math.utoronto.ca/cms/math-aid-centres/` for more information.

The schedule for Math Aid Centre office hours will be posted online, with the other office hours of the course.

Academic Success Centre

The Academic Success Centre offers a wide variety of services and programming to help students meet their academic and personal goals at the University. Individualized learning skills consultations are available by appointment, or on a first-come, first-served basis for drop-in visitors. You can reserve private study space, attend workshops and lectures related to academic success, or consult their library of helpful publications about best learning practices. More information can be found on their website, `https://www.studentlife.utoronto.ca/asc`.

Additional Support Services

Other free support services, such as English Language Learning programs and College-Specific Resources can be found at `uoft.me/freeresources`.

Additional Questions & Answers

If you want to know, you ask the question. There's no such thing as a dumb question. It's dumb if you don't ask it. –Katherine Johnson

What should I do if I require an academic accommodation?

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the Universitys courses and programs.

If you have a learning need requiring an accommodation, immediately register at Accessibility Services at `http://www.accessibility.utoronto.ca/Home.htm`. You can also register online at `https://www.studentlife.utoronto.ca/as/new-registration`.

Can I record the lectures that I attend or share course materials?

Course materials are provided for the use of enrolled students only and that registered students are not allowed to post, share, or sell course materials without written permission of both the Instructor and the Course Coordinator.

If a student wishes to tape-record, photograph, video-record, take pictures of, or otherwise reproduce lecture presentations, course notes or other similar materials provided by instructors, he or she must obtain the instructor's written consent beforehand. Otherwise all such reproduction is an infringement of copyright and is absolutely prohibited. In the case of private use by students with disabilities, the instructors consent will not be unreasonably withheld.

For more information on copyright and the University of Toronto, please visit the copyright page at `https://onesearch.library.utoronto.ca/copyright/copyright`.

What if I have a scheduling conflict with the Term Test, or I get sick?

Instructions will be posted on the course website prior to the Term Test; do not inquire before these are posted.

If I have a question about the course, who should I ask?

First, make sure that your question has not been answered in this syllabus, on the course website, or in class. You should start by asking your classmates to ensure that your question has not yet been answered. **Instructors and TAs will not answer questions about the content of the course ('math questions') via email**. If you have a math question for an instructor or TA, you should attend an office hour, or take advantage of other resources for learning on campus.

If you send an email about the course, you must use your U of T email address, as your instructors will not communicate information about the course to other addresses.

- Questions specific to your section should be sent to your instructor.

- Questions related to MAT136 as a whole (including tutorials and assessments) may be directed to admin136@math.toronto.edu. This address will be checked 2-3 times a week, and inquiries directed to it will be forwarded to the appropriate contact. Note that:
  - Inquiries about registration in lecture sections or tutorial sections cannot be answered by the MAT136 instructional team (registration is done centrally through the Registrar's Office).
  - Initial regrading requests for the midterm must be submitted through the process announced following the Term Test; appeals of regrading decisions may be sent to the administrative email.
  - We will not answer questions addressed in the Syllabus or on the course website.
- Teaching Assistants do not answer any inquiries via email.

You do *not* need to email your TA or instructor if you miss a tutorial or lecture.

Remember that you should always be respectful in your speaking and actions. When in doubt about how you should speak, write, or act, always err on the side of formality. You will never offend or annoy someone by being overly formal or polite. The University is a professional environment, and that when you send emails you must be professional. For example, you must be polite and use proper grammar and should begin an email with "Dear Professor _____" rather than "Hi".