

University of Toronto

MAT 137Y1Y: Calculus! Summer 2019 Course Outline

Welcome to MAT137! This course has three objectives:

- First, we want you to become fluent in various concepts in calculus and their applications to math and science.
- Second, there is a logic component to make you comfortable with reading and understanding mathematical statements, with precise definitions, and with rigorous proofs.
- Third, we want to train you in the art of problem solving. In your future career, we would like you to be able to attack new problems that you have never seen before, to figure out by yourself how to adjust old methods to new situations, and to learn how to be confident with your answers. You will achieve this not by memorizing a lot of formulas and methods, but by understanding why they work.

**This is a double-speed course. It is essential that you don't let yourself fall behind.
Please visit our office hours regularly!**

We look forward to getting to know all of you,

Mihai Alboiu
Qin Deng
Kathlyn Dykes
Francisco Guevara Parra

LECTURES AND INSTRUCTORS

The Course is divided into two parts:

Part I: Differential Calculus May 6 - June 14
Part II: Integral Calculus July 02 - August 12

There are two lecture sections and each section meets twice a week.

Part I			
Section	Time	Room	Instructor
L0101	WF 1 - 4	MP 102	Kathlyn Dykes
L5101	TR 6 - 9	MP 137	Francisco <u>Guevara Parra</u>
Part II			
Section	Time	Room	Instructor
L0101	WF 1 - 4	MP 102	Qin Deng
L5101	TR 6 - 9	MP 137	Mihai <u>Alboiu</u>

VIDEOS

We are using a list of youtube videos that contain short summaries of the main concepts throughout the course. Your instructor will tell you which videos to watch before each lecture. We expect you to watch these videos at home before class. Coming to a lecture without having watched the corresponding videos will be a waste of time. You might as well stay at home.

There wont be a lot of actual “lecturing” on the lecture sections. We will expect you to have watched some short videos before coming, and you will spend class time working on difficult, conceptual questions and discussing them with your peers.

CONTACT INFORMATION, OFFICE HOURS AND MATH AID CENTRE

Sometimes tutorials and lectures are not enough to address all your concerns. For this reason, we will hold regular office hours throughout the term. You can find the office hours times below but these times might change during the summer. Any change will be posted on [Quercus](#).

	Instructor	Email	Tentative office Hours
Part I	Kathlyn Dykes	kathlyn.dykes@mail.utoronto.ca	Wed and Fri 4-5pm
	Francisco Guevara Parra	guevara.guevaraparra@mail.utoronto.ca	Tue and Th 4-5pm
Part II	Qin Deng	qin.deng@mail.utoronto.ca	Wed and Fri 4-5pm
	Mihai Alboiu	m.alboiu@mail.utoronto.ca	Tue and Th 4-5pm

You don't need an appointment to come during our regularly scheduled office hours.

In addition to our office hours, some TAs will hold Math Aid Centre hours at various times. The exact schedule for these hours will be posted on [Quercus](#).

TA	Email
Akdemir, Afiny	afiny.akdemir@mail.utoronto.ca
Alie-Lamarache, Lemont	lemonte@math.utoronto.ca
Morgan, Adam	adam.morgan@mail.utoronto.ca
Munasinghe, Dinushi	dinushi.munasinghe@mail.utoronto.ca
Pham, Khoa	khoatd.pham@mail.utoronto.ca
Zimmermann, Jake	jake.zimmermann@mail.utoronto.ca

Please remember to check [Quercus](#) regularly for up-to-date hours.

LOGISTICS

Course website and Communication

- The official course website will be on <http://toolboxrenewal.utoronto.ca/>. All announcements, homework assignments, grades, or any other information will be posted on it. Please check it at least twice per week.
- There is an online forum for this course on Piazza. This group is a resource for students to meet other MAT137 students, ask questions, discuss problems, make study groups, and in general help each other. Past-year students found the online forum a useful resource. Sign up here:

<https://piazza.com/utoronto.ca/summer2019/mat137>.

- Please make sure that you check your University of Toronto email every day so that you don't miss any important announcements.

Very Important: When you email your instructors or one of your TAs, you must always use your official University of Toronto email address, and you must write "MAT137" in the subject line. Emails sent from a non-university address (e.g. Hotmail, Gmail, Yahoo) will be ignored.

Textbook

The textbook for this course is a set of lecture notes written by a former MAT137 instructor:

"Calculus in One Dimension" by Tyler Holden. Volumes 1 and 2. 2018 edition.

It is much cheaper than a regularly published textbook, and it is better suited for us. You may buy it at the UofT bookstore. We will indicate in the course website which sections of the textbook we are studying. Notice that the textbook sometimes may go in more depth, or provide more example, or emphasize different concepts, so it is a great source to complement videos and lectures when you are confused.

Important dates

May 7	First day of classes (Part I begins)
May 12	Last day to enrol or make section changes.
TBD	June examination timetable posted on the Arts & Science website
June 19-26	June examination period (no classes)
July 02	Classes resume (Part II begins)
July 15	Last date to drop the course without academic penalty
TBD	August examination timetable posted on the Arts & Science website
August 12	Last day of classes
August 15-22	August examination period (final exam)

More information can be found at <https://fas.calendar.utoronto.ca/sessional-dates>.

Whom to contact

- For math-related questions about MAT137, you may ask any of the instructors, or the TAs. See our contact information.
- For tutorial changes, contact Kathlyn Dykes/Francisco Guevara Parra (May - June) or Mihai Alboiu/Qin Deng (July - August).
- If you have a conflict with a test date, contact Kathlyn Dykes/Francisco Guevara Parra (May - June) or Mihai Alboiu/Qin Deng (July - August).
- For any other logistical issues or questions about the course, contact your course instructor.
- For questions about which math course is right for you, contact the Undergraduate Administrator Donna Birch (dbirch@math.utoronto.ca, BA6291, 416-978-5082).
- If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom, or course materials, please contact **Accessibility Services**: disability.services@utoronto.ca or <http://www.accessibility.utoronto.ca>

- If you have a personal situation and are concerned about how it will affect your academic performance, please contact your [college registrar](#).

Code of Conduct

We ask that you respect each other's right to learn and fully engage in this course. For more information, please visit this website: [Code of student conduct](#).

Academic Integrity

Your TAs and invigilators will carefully and diligently check for instances of cheating on quizzes and exams. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the [Code of Behaviour on Academic Matters](#).

We know that the vast majority of students are honest and hard-working. But sometimes even honest people make bad decisions and accidents sometimes happen. Even if you think you know the rules, double-check. As a student, you alone are responsible for ensuring the integrity of your work and for understanding what constitutes an academic offence. The consequences of academic misconduct can be severe, and not knowing the University's expectations is not an excuse. Educate yourself! If you have questions or concerns about what constitutes appropriate academic behaviour, please read the University policy on academic misconduct at the following links:

<http://www.artsci.utoronto.ca/newstudents/transition/academic/plagiarism>

<http://www.artsci.utoronto.ca/osai/The-rules>.

<http://www.artsci.utoronto.ca/osai/students>

Use of Calculators: Calculators are neither required nor permitted for the midterm tests, or the final exam. **We do not permit use of any type of calculator or any other electronic device during term tests or the final exam.** Having them with you on your desk or on your person during a term test or final exam is an academic offence.

WHAT WE EXPECT YOU TO KNOW BEFORE THE COURSE STARTS

The single most common reason for failure in this course is a weak background in precalculus. To help you with this, our department has prepared the following website: <http://uoft.me/prec calc>. This website contains a summary of the topics we expect you to have learned in high-school. There are self-diagnostic quizzes you can take, as well as worked examples and practice problems.

“Problem Set 0”: You do not have to turn in any of these exercises. However, we expect you to review all of them by the end of the first week of class. With the exception of the section on Logic and a few things here and there, we will not review this material in class. However, you are always welcome to come and ask us questions during office hours. **Ignoring this material or letting it go past the second week will make it very difficult to succeed in this course.**

TUTORIALS

In addition to lectures, you will have two one-hour tutorials per week. For each tutorial we will select a topic that is particularly important or that we know students struggle with, and you will have the opportunity during the tutorials to get very useful practice and to get help from your TA or your classmates.

Notice that you need to enrol both in a lecture section and in a tutorial section separately. For tutorials, you need to enrol on ACORN to choose a specific tutorial section.

The first tutorial will be on May 13/14.

Tutorials			
Section	Time	Room	TA
T0101	MW 11	BA 2195	TBA
T0201	MW 12	BA 2195	TBA
T0301	MW 4	BA 2195	TBA
T0401	TR 4	BA 2175	TBA
T5101	TR 5	BA 2165	TBA
T5102	TR 5	BA 2155	TBA

PROBLEM SETS

The only way to learn mathematics is to practice and receive feedback. To help you with this, **there will be 8 weekly problem sets (PS) throughout the summer.** The assignments will be posted on [Quercus](#). **Problem sets will be due mostly on Wednesdays at 12:00 PM (noon) with a couple of exceptions (see PSs due dates below).** You will need to scan your completed problem sets (or take a picture) and submit them electronically via Crowdmark. **Your are responsible for your pictures being legible. If they are not clearly legible, you will receive no credit.** For more details see [Quercus](#).

We will mark your problem sets, post the grades on Quercus, and return them to you electronically. For each student, **we will only count the best 6 out of 8 grades for problem sets.** If you need to miss one homework assignment for any reason, justifiable or not, that will be one of the two grades that we will not count for you.

Late Submission Penalties: You are expected to complete assignments on time. We will be posting the Problem Set's solutions two days after the deadline. For this reason **there will be a penalty of 35% deducted the first day late and you will receive no marks from the second day late on.** There will be no exceptions for any reason, justified or otherwise. Remember that we only count the best 6 out of 8 problem sets for each student. If you need to miss a problem set for a valid reason, it is one of the two problem sets we do not count for you. If you leave your submission to the last minute, you are making a gamble. If due to technical reasons, you end up submitting at 12:02pm, you lost your gamble. Take responsibility for it and accept your 35% penalty.

Problem sets will be due on the following dates

Problem Sets Due Dates			
Problem Set	Due Date	Problem Set	Due Date
01	Wed May 15	05	Wed July 10
02	Tu May 21	06	Tu July 16
03	Wed June 05	07	Wed July 31
04	Wed June 12	08	Wed August 07

In addition to the problem sets that you will turn in, we will also post practice problems from each section of the textbook. We encourage you to work through them as we cover the sections in class. You have answers to them at the back of the book, full solutions in the solution manual, and you can always visit us during office hours to ask us questions.

On computations: We will not be including many routine computational questions on your problem sets, since you do not need our feedback to become good at these. We will include them in the practice problems and in some tutorials. You are responsible for getting enough practice so that you can solve such questions on tests quickly and without error.

A note on collaboration: Discussing exercises (including graded homework problems) with your classmates is a useful and mathematically healthy practice. However, when it comes time to write up your solutions for submission, YOU MUST WORK INDEPENDENTLY and PRESENT SOLUTIONS IN YOUR OWN WORDS. To be certain, work together with your classmates in the discovery phase, but do not work together when you are writing your solutions, and never have the solution written by a friend in front of you when you are writing yours. Doing otherwise amounts to academic misconduct, and the penalties are severe. For more information, please read the section on [academic integrity](#).

Last year dozens of students were penalized for improper collaboration and now have a record with OSAI. Please do not be one of them.

TERM TESTS AND FINAL EXAM

Term Tests

There will be three term tests.

	Day	Time	Room
Test 1	Monday, May 27	6:00 - 8:00 pm	TBD
Test 2	June examination period	TBD	TBD
Test 3	Monday, July 22	6:00 - 8:00 pm	TBD

Test 2 will be held during the June examination period (June 19 - 26).

We will post detailed information about each test on [Quercus](#).

If you have an academic conflict for one of the tests (for example, a lecture, a tutorial or an exam for a different course), then we will make arrangements. If you have an academic conflict, you will need to let us know at least one week before the date of the test. We will post more information on [Quercus](#).

If you are unable to write any of the term tests for any other legitimate reason, we will accommodate you, but you must notify us as soon as possible (no more than forty eight hours after the test), and you will have to provide us with appropriate documentation within a week of the date of the test.

If you miss the test due to an illness or injury that prevents you from writing a test, you must see a health care provider right away and notify us as soon as possible (no more than forty eight hours after the test), then you must submit to the appropriate instructor the [University of Toronto Verification of Illness or Injury form](#) [<http://www.illnessverification.utoronto.ca>] within a week of the test date. (You may submit it electronically, if necessary, but you must bring a hard copy at a later time.)

The [University of Toronto Verification of Illness or Injury form](#) is the only form of medical documentation acceptable in the University of Toronto. Note that, by University policy, **only five identified groups of practitioners may sign this form: physicians, surgeons, nurse practitioners, dentists and clinical psychologists**. Documentation on medical matters from anyone not a member of these five groups will not be accepted.

There are other acceptable reasons for missing a midterm test (e.g. family tragedy). In these cases, appropriate documentation must be provided, also within a week of the date of the test. Guidelines for non-medical documentation may be found at <http://www.artsci.utoronto.ca/current/petitions/process#documentation>.

If you miss a test but do not have a reason that is both valid and documented, then you will be assigned a grade of zero (0) on that test.

Final Exam

There will be a three hour cumulative final exam during the August 2019 exam period. The exact date and time will be posted by the [Faculty of Arts & Science](#).

Please note that failure to attend the final exam is an extremely serious matter, and it will be handled by the Faculty of Arts and Science itself (not by the Course Instructors, nor by the Department of Mathematics). For more information, visit the following website

<http://www.artsci.utoronto.ca/current/exams/>

We do not permit use of any type of calculator or any other electronic device during term tests or the final exam. Having them with you on your desk or on your person during a term test or final exam is an academic offence.

MARKING SCHEME

Your final mark for this course will be

$$10\% \cdot PS + 50\% \cdot FE + 16\% \cdot TA + 14\% \cdot TB + 10\% \cdot TC$$

or

$$10\% \cdot PS + 40\% \cdot FE + 20\% \cdot TA + 18\% \cdot TB + 12\% \cdot TC$$

whichever is higher.

In the formulas above:

- PS is the average of your best 6 out of the 8 problem set marks.
- FE is your final exam mark.
- TA is the grade in your best term test.
- TB is the grade in your second best term test.
- TC is the grade in your worst term test.