

**University of Toronto at Scarborough**  
**Department of Computer & Mathematical Sciences**  
**MATA35H3: Calculus II for Biological Sciences**  
**Syllabus**  
(2016 May-August)

**General Information**

Instructor: Shuangjian Zhang

Email: shuangjian.zhang@mail.utoronto.ca

Lecture time: Wednesday 10-12pm (IC220)  
Friday 1-2pm (IC230)

Office hours: Wednesday 1-3pm (IC404)

**Tutorials:**

Tutorials begin in the week of May 9th.

TA's office hours: TUESDAY 11:00-12:00; 13:00-14:00; 16:00-17:00.

Location: IC404.

Feel free to come any of them.

Tut 0001            TUESDAY 10:00-11:00            IC 204            Justin Ko  
justinp.ko@mail.utoronto.ca            Office hour: TUESDAY 11:00-12:00 (IC404)

Tut 0002            TUESDAY 14:00-15:00            SW 309            Loise Perruchoud  
loise.perruchoud@mail.utoronto.ca            Office hour: TUESDAY 13:00-14:00 (IC404)

Tut 0003            TUESDAY 15:00-16:00            SW 128            Kunihiro Ito  
kunihiro.ito@mail.utoronto.ca            Office hour: TUESDAY 16:00-17:00 (IC404)

**Course Description:**

A calculus course emphasizing examples and applications in the biological and environmental sciences. Discrete probability; basic statistics: hypothesis testing, distribution analysis. Basic calculus: extrema, growth rates, diffusion rates; techniques of integration; differential equations; population dynamics; vectors and matrices in 2 and 3 dimensions; genetics applications.

Note: This course will not satisfy the Mathematics requirements for any Program in Computer and Mathematical Sciences, nor will it normally serve as a prerequisite for further courses in Mathematics. Students who are not sure which Calculus II course they should choose are encouraged to consult with the supervisor(s) of Programs in their area(s) of interest.

**Prerequisites:**

MATA30H3 or MATA31H3

## Exclusion

(MATA21H3), MATA33H3, MATA36H3, MATA37H3, MAT123H, MAT124H, MAT125H, MAT126H, MAT133Y, MAT135Y, MAT137Y, MAT157Y, JMB170Y, (MATA27H3)

## Textbook:

Calculus for the Life Sciences, Bittinger, Brand, Quintanilla; Third Custom Edition for University of Toronto Scarborough

(optional) *Students Solution Manual* for the above textbook

## Lectures:

Our first lecture is on May 4, 2016 and our last lecture is on August 2, 2016, inclusive.

## Email Policy:

- Please send email for *administrative/marking purposes* only. For math questions, ask your instructor or TAs in person during class/tutorial or office hours.
- You must use your \*\*\*\*@mail.utoronto.ca email account when sending us emails. Otherwise, they may be filtered as spam and deleted automatically.

## Blackboard:

All announcements, grades, assignments, problem sets, lecture summary and other course materials will be posted on Blackboard ([portal.utoronto.ca](http://portal.utoronto.ca)). Please check it regularly.

## Quizzes:

There will be a total of 5 quizzes to be held in the last 15-20 minutes of tutorial. Only 4 of the 5 best quizzes will be counted towards your grade. You must write the quiz in your assigned tutorial; otherwise, you will receive a zero for that quiz. There will be no make-up quizzes (see *Missing Term Work* for details on missing a quiz).

The dates of the quizzes are: May 17, 31; June 28; July 12, 26.

## Assignments:

Assignments will be available on Blackboard about one week in advance. Usually it will be uploaded on Wednesday, and due at the beginning of next Tuesday tutorial. There are 10 assignments in total, 5 of them will be handed in and graded. The due dates of handed in assignments are: Assignment 2 on May 24, Assignment 4 on June 21, Assignment 6 on July 5, Assignment 8 on July 19, and Assignment 10 on August 2. Only 4 of the 5 best quizzes will be counted towards your grade. To succeed in this course, you are recommended to regularly complete the problem sets, even if it need not be handed in.

## Problem sets

Problem sets will be provided Blackboard each week, and you are encouraged to try them before you go to tutorials. See "Tutorials" for details. Don't need to be handed in, and it won't be graded. However, problem sets will help you to have a good understanding and performance on the quizzes and tests.

## Tutorials:

Tutorials begin on Tuesday, May 10 and are held once a week.

- *How should I prepare for tutorial?*

Work on the problem sets and assignments beforehand. If you have questions, you will be able to ask your TA for help. Bring your textbook and problem set to tutorial.

- *What will I be doing in tutorial?*

Your TA will spend part of the time discussing questions on the problem set. You will spend most of the time working on the problem set while your TA walks around to help. You can work in groups (highly recommended) or independently. Tutorials will have a quiz at the end bi-weekly. See "Quizzes" or "Quizzes and Assignments Schedule" for details.

## Term Test:

There will be a 100 minute term test tentatively scheduled for Wednesday June 8th, 2016 during the class time, but in a different room at IC130. More details will be announced later.

## Missing Term Work:

If you miss the term test or a quiz for a legitimate reason (e.g. illness, conflict with another course), you must contact your instructor immediately to obtain special permission and provide proper documentations. There will be no make-up term test or make-up quizzes so your grade will be adjusted by increasing the final exam component of your work. For late handed in assignments, you will get 20% penalty per day for each day passed the deadline. In this case ONLY, you can scan and email electronic version of your assignment to your TA for late submitting.

Reasons which are not legitimate include:

- "I have been extremely busy recently because of personal reasons and do not have enough time to prepare for the test."
- "I have other tests on the same day as the MATA35 test (which do not have a direct time conflict with the MATA35 test)"
- "My employment has a direct time conflict with the MATA35 test."
- "I have another test at the same time as my MATA35 quiz/test."

If you skip the test or quiz without prior approval, you will receive a zero for the test or quiz (unless the absence is due to illness, properly documented). If you cannot show up for the test or quiz because of illness, you should submit your medical documentation to your instructor no later than one week after the day of the test.

## Grading Scheme:

Your grade will be:

$$\text{Total} = 60\% * \max\{T, F\} + 40\% * \min\{T, F\}$$

where T = 30% Quizzes + 30% Assignment + 40% Term Test

F = 100% Final Exam

## Accessibility Services:

The University of Toronto is committed to accessibility. If you require additional academic accommodations, please contact Accessibility Services as soon as possible.

## Academic Integrity:

Academic integrity is fundamental to learning and scholarship at the University of Toronto. 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.

Familiarize yourself with the University of Toronto's Code of Behaviour on Academic Matters ([governingcouncil.utoronto.ca](http://governingcouncil.utoronto.ca)). It is the rule book for academic behaviour at the U of T, and you are expected to know the rules. Potential offences include, but are not limited to:

### On tests and exams:

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

### Misrepresentation:

- Falsifying or altering any documentation required by the University, including doctors notes.
- Falsifying institutional documents or grades.

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the Code. The consequences for academic misconduct can be severe, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact your instructor. If you are experiencing personal challenges that are having an impact on your academic work, please speak to your instructor or seek the advice of your college registrar.

## Quizzes and Assignments Schedule:

Week of	Lecture Content	Additional Notes
May 2-6	No Quiz	No tutorial
May 9-13	tutorials begin from this week	Assignment 1 release
May 16-20	Quiz 1 in tutorial	Assignment 2 release
May 23-27	Assignment 2 Due in tutorial	Assignment 3 release
May 30 - June 3	Quiz 2 in tutorial	Assignment 4 release
June 6-10	Term test will be on June 8	Tutorials and Friday lecture will be held as usual
June 13-17	Reading week, no lectures, no tutorials	
June 20-24	Assignment 4 Due in tutorial	Assignment 5 release
June 27 - July 1	Quiz 3 in tutorial	Assignment 6 release
July 4-8	Assignment 6 Due in tutorial	Assignment 7 release
July 11-15	Quiz 4 in tutorial	Assignment 8 release
July 18-22	Assignment 8 Due in tutorial	Assignment 9 release
July 25-29	Quiz 5 in tutorial	Assignment 10 release
August 2	last lecture at 1-2pm, August 2 (IC230)	Assignment 10 Due in class

### ADDITIONAL NOTES:

- This schedule is tentative and subject to change.
- Tutorials will focus on content from the previous lecture. For example, the first tutorial on May 10th will discuss lecture material from May 4 and May 6.