

MATH 101

Integral Calculus with Applications to Physical Sciences and Engineering

Session 2016W Term 2, January–April 2017

Course home
page

Course home page

This is the common web site for all sections of MATH 101 in Term 2 of the 2015W session (January to April 2017).

Individual
section pages

Most of the information you're looking for will be found on one of the following web pages; these links can always be found in the sidebar on the left side of the page, no matter where you are in our site.

Grading
scheme

- [Individual section web pages](#): information specific to your section, such as time and location of classes and **office hours**.
- [Grading scheme](#): the components of how you will be evaluated, and how those components will be combined into your overall grade. Short version: **10% homework, 40% quizzes, 50% final**.
- [Homework](#): web-based weekly homework assignments (**WeBWorK**) and **suggested problems**, all to get you ready for the quizzes.
- [Quizzes](#): in-class quizzes every two weeks, to keep you caught up during the semester and as practice for the final exam.
- [Final exam](#): covers the entire syllabus, and is worth half your overall grade.
- [Missed assessment](#): what to do if you miss a homework, a quiz, or the final exam.
- [Academic misconduct](#): we know you don't want to cheat; here's some information to support you.
- [Helpful resources](#): the **course textbook** and other online resources.
- [Syllabus, learning goals](#): what topics you're going to learn, what specific items you'll be learning, and when you'll be learning them.
- [Helpful people](#): office hours and **tutorial centre** hours, and other helpful information, both for calculus and for life challenges in general.
- [Piazza](#): an online discussion forum, specifically for our class.

WeBWorK,
suggested
problems

Quizzes

Final exam

Missed
assessment

Academic
misconduct

Course notes,
helpful

resources

Syllabus,
learning goals

Tutoring,
helpful people

Piazza

Important note: Fok–Shuen Leung's MATH 101 section is different in some ways from the rest of the course; all the information on this common web site applies to that section, except where explicitly overridden by information on the section's web page.

Registration for MATH 101

To enroll in MATH 101, a student must have passed (or claimed credit for) one of the following **prerequisite courses**: MATH 100, MATH 102, MATH 104, MATH 110, MATH 111, MATH 120, MATH 180, or MATH 184. Most commonly, students who took MATH 100/180 follow up with MATH 101, while students who took MATH 102/182 or MATH 104/184 follow up with MATH 103 or MATH 105, respectively; however, this is not mandatory.

Important registration note: Individual instructors do *not* have the authority to sign forms to change your registration (please don't ask them). Instead, the Mathematics Department handles all requests for [registration changes](#) centrally.

For students in MWF sections, the first day of class is Wednesday, January 4 and the last day of class is Wednesday, April 5. For students in TTh sections, the first day of class is Tuesday, January 3 and the last day of class is Thursday, April 6. Midterm break is February 20–24; there will be no classes that week. In addition, for students in the MWF sections, there will be no class on Monday, February 13 (Family Day).

General advice for success

- *Effort pays off!* It is simply untrue that people have a fixed amount of math ability that determines how well they do. Just like any other skill, doing mathematics becomes easier with hard work, practice, and willingness to challenge yourself.
- *Stay caught up!* Mathematics is a very cumulative subject: what we learn one week depends crucially on understanding what we learned the week before. Students who fall behind early struggle to catch up for the rest of the course.
- *Put in the hours!* Remember the 2-to-1 rule for university courses: expect to spend an average of 2 hours outside of class for every 1 hour spent in class. In our course, that means 6 hours per week, in

addition to coming to lectures, is quite reasonable (and some students will spend more than that). Jump right in and start spending that time; don't wait until later in the course.

- *Work on the [homework problems](#)!* The WeBWorK problems and the Suggested Problems are the most direct way to practice for the exams; in particular, the Suggested Problems are very much like the quizzes and the final exam problems. It's tempting to try to find some short cut to obtaining the answers, such as taking dictation from a fellow student or searching the internet. Besides the fact that cheating in this way violates [UBC's academic misconduct policies](#), it's important to realize that working on the homework is the primary way for you to learn the course material. Learning to do mathematics is like learning to do anything else: you can't learn how just by watching someone else do it. Take it from someone with years of experience teaching university courses: **people who work through the homework problems (including the Suggested Problems) do better on the exams.** It's that simple.
- *Don't give up!* In earlier math courses, everything we needed to be able to do might have been conveniently written in boxed formulas that we can instantly apply. In more advanced mathematics courses, however, we don't always immediately know the correct way to proceed; sometimes trial and error is necessary, and there's nothing at all wrong with this. Trying, struggling, going back to another idea, making mistakes, fixing them—these are all part of the learning process.
- *Use our [helpful resources](#)!* If you are stuck in the middle of a homework problem or a concept from the course, you are on the cusp of a great learning moment. The instructors, the TAs who staff the Math Learning Centre, and your fellow students on [Piazza](#) are very happy to help you see the way past that obstacle. That list of resources also includes ways to address larger issues such as study difficulties, health issues, disabilities, and extreme stress.
- *Consciously address what you find hard!* Why do some people get better quickly when they work hard, while others don't seem to progress as fast? One answer is that **deliberate practice** is much more effective than going through the work just for the sake of finishing it. From a [Freakonomics blog post](#) (boldface is my emphasis): “For example, in school and college, to develop mathematics and science expertise, we must somehow think deeply about the problems and reflect on what did and did not work. One method comes from the physicist John Wheeler (the PhD advisor of Richard Feynman). Wheeler recommended that, **after we solve any problem, we think of one sentence that we**

could tell our earlier self that would have 'cracked' the problem. This kind of thinking turns each problem and its solution into an opportunity for reflection and for developing transferable reasoning tools." Stephen Chew lists [several ways to develop and improve your study skills](#), summarized by "**unplug and think hard about the meaning of the concepts you're studying**".