

**Math 103 (Introduction to Calculus),
Spring 2015
TR 10:30am-noon, DRL 3N1H
University of Pennsylvania**

Instructor: William Simmons, DRL 4C3, wsimmo@sas.upenn.edu.

Office Hours (held in DRL 4C3): Mondays, 11am-noon; Wednesdays, 1-2pm; Others, time permitting, by appointment. My Wednesday office hours serve both our course and Math 370, so to be fair I will focus on 370 during the first half-hour and on 103 during the second. You are welcome to come during the first half-hour, but you may have to wait a few minutes if algebra students are there.

Teaching assistant: Miguel Davila, dmigu@sas.upenn.edu; office hours TBA.

Class website and Canvas: The page www.math.upenn.edu/~wsimmo/Math103,IntroductiontoCalculus.html will serve as our main class website. Look there for assignments and other course documents.

We will use the Canvas system (<https://canvas.upenn.edu>) only for announcements and for posting scores. Be sure to choose the option of accepting emails from Canvas about announcements.

Textbook: Thomas' Calculus, Second Custom Edition for the University of Pennsylvania (with MyMathLab access code), Pearson. ISBN 10: 1-269-96229-9 ISBN 13: 978-1-269-96229-2. It must be bought in the University bookstore (this same text is used in Math 104 and Math 114). Don't buy the non-custom Penn version of the text because it won't be bundled with the access code to MyMathLab.

Exam and other important dates:

- Add deadline: Monday, Feb. 2.
- First midterm: Wednesday, Feb. 11, 6-7:30pm, DRL A8.
- Drop deadline: Friday, Feb. 20.
- Second midterm: Wednesday, Mar. 18, 6-7:30pm, DRL A8.
- Withdrawal deadline: Friday, Mar. 27.
- Last day of classes: Wednesday, April 29.
- Final exam: Monday, May 11, Noon-2:00 pm, location TBA.

Class organization: Traditional courses are heavy on lecture and lighter on opportunities for personal exploration of the material and interaction with others. Our course incorporates elements

of “active learning”, which means that we emphasize pre-class study to get an initial basic grasp of ideas and spend more of our class time on problem solving in order to cement and develop those concepts. We still discuss the finer points of the material in class and you will have ample opportunity (in class, recitation session, office hours, etc.; see “Keys to success in Math 103” below) to ask questions and get help.

Concretely, you will do the following:

- Before class:
 1. Study assigned material in the textbook.
 2. View videos or other assigned material explaining the key concepts.
 3. Work assigned practice problems in MyMathLab.

Throughout this process, you will make notes about questions you have, record important definitions or techniques, write explanations to yourself, and basically hash out the basic gist of the material in your “Personal calculus guide”; see below for the details.

You will find the assignments under the heading “Daily schedule and assignments” on our class website.

Note: You may find it helpful to experiment with the order. For example, you might find it easier to study the text after watching a video presentation on the assigned topic.

- In class: During each class meeting we will review the day’s topic and then work in small groups (these are assigned, and we’ll change it up periodically). The problems will range in difficulty and some will require more analysis and collaboration than the MyMathLab practice problems. Miguel and I will work with you to answer questions, give hints, and help you gain greater mastery than you obtained from your pre-class work. However, it is essential that you put substantial effort into that preparation (probably an average of at least 3 hours before each class meeting) in order to benefit most from the class work. If you skimp on that preparation, you won’t know the basic definitions or what it is that you really need help on, and you won’t be ready to learn from and contribute to your group.

As you work, you’ll periodically take notes about things you learn, draw diagrams, try out guesses, etc. You should incorporate these insights into your personal calculus guide. Also, clearly record the solutions and explanations you and your peers come up with, because these form part of the assignment you will turn in later.

- After class: The assignment you will turn in later consists of the in-class problems as well as others from the textbook. The process of writing up what you did in class and solving the book problems will help you solidify your grasp of the material.

MyMathLab: You will work practice problems before class to help you improve your proficiency with the basic tools. To sign up, go to <http://www.pearsonmylabandmastering.com/northamerica/mymathlab/> and use the following information:

- Course Name: Math 103, Sp 15, Introduction to Calculus
- Course ID: simmons16252

- Your personal access code, bundled with the text if you bought it from the bookstore (if not, you can purchase the code on the MyMathLab website)

Be sure to do this soon, as your first assignment is due by the second day of class (Tuesday, January 20).

Personal calculus guide: To master a subject, you need to systematically keep track of what you're learning, what you still don't understand, and how it all fits together. You will keep a math journal with these ingredients. For instance, you can include your pre-class study work and notes from group problem solving. For lack of a better word, I'm calling it a "personal calculus guide" since this document is based on your own work and insights and will help you plan your personal study and preparation for exams. You could keep it on paper in a spiral binder or make some sort of digital document, but I will collect them once or twice throughout the term (generally right after exams). You have a lot of leeway on the form and content, but you need to make something. In the end, how much you get out is directly proportional to what you put in. My own version will be posted to the website and regularly updated. It may be helpful as an example and as a source of information to study.

Assignments: Assignments are generally due at the beginning of class on Thursdays; any changes will be announced through Canvas. As described above, a typical assignment consists of in-class problems to be done with a small assigned group as well as out-of-class problems from the textbook. *Late work will not be accepted, so please talk to me ahead of time if you face a legitimate extenuating circumstance.*

Quizzes: Various times throughout the term there will be an unannounced quiz at the end of class or recitation session. The quizzes will be short (15 minutes at most), cover recent material (from the last homework assignment and last class meeting or two), and are intended to be straightforward if you are keeping up. You may not use notes or electronic devices on the quizzes.

Exams: There are two evening midterm exams, on Wednesday 2/11 and 3/18. The exams will be one-and-a-half hours long (from 6:00pm-7:30pm, in DRL A8). If you have a strictly unresolvable scheduling conflict, let me know no later than January 31. The final exam is Monday, May 11, from noon-2:00 pm; the location is TBA. As with quizzes, you may not use notes or electronic devices on exams.

Grades: Your grade will be determined by the following breakdown :

- 5% MyMathLab, 5% personal calculus guide, 10% assignments, 10% quizzes, 40% midterms, 30% final

Actual letter grades are calculated as follows:

- A: Students in the top 15% of total point earners
- A-: The next 15% of total point earners
- B+: The next 10% of total point earners

- B: The next 10% of total point earners
- B-: The next 10% of total point earners
- C+: The next 10% of total point earners
- C: The next 10% of total point earners
- C- The next 10% of total point earners
- D+, D, or D- (depending on how the scores are distributed): Lowest 10% of total point earners, unless fewer than 35% of total points are earned
- F: Below 35% of available points

Errors in recording and/or grading must be brought up within a week of the assignment being returned. Grades are fully determined by the numbers, so please don't request exceptions.

Keys to success in Math 103

- (Background knowledge) You should be able to carry out basic algebra and trigonometry without too much difficulty. Some rust on topics you understood well in the past can be worked through, but if you have serious difficulties with these tools or never really mastered them, we should talk about options to help you. In addition, you need to be curious about mathematics and be willing to think through the material we discuss.
- (Submitted work) Write neatly and show all relevant work needed to understand your thought process. Incomprehensible and/or messy answers may not receive credit. The emphasis is on clear written explanations as well as explicit calculations. Be sure to use complete sentences and correct grammar in your work.
- (Tips and getting help) This is a difficult class. The single biggest thing you can do to succeed is being consistent. Make sure you are keeping up with pre-, in- and post-class work. When you study a new concept, explain it to yourself in terms you understand and make connections with things you have already learned. Be organized in creating your personal calculus guide so that it is useful to you. Lastly (but very importantly), when you encounter challenging concepts or things that aren't clear, identify what you are confused about and get help. Penn provides *many* resources to help you succeed in Math 103, so be sure to take advantage of them:
 1. Recitation sections exist to help you learn the material. Make the most of the opportunity: come prepared and ask questions.
 2. Come to office hours (both mine and Miguel's).
 3. You should seriously consider attending the *Calculus Start-up Program* on January 20 or 21. Details are at <http://www.vpul.upenn.edu/tutoring/calculusstartup.php>
 4. Soon after the beginning of each term, the math department sponsors drop-in help at the Education Commons and campus residences. See <http://www.math.upenn.edu/ugrad/calc/help/help.html> for the schedule and locations. (This is a hidden gem; this service has been historically underutilized, so you should be able to get a lot of personal attention.)

5. The Tutoring Center, which provides opportunities such as free tutoring appointments on campus as well as online basic math tutorials: <http://www.vpul.upenn.edu/tutoring/index.php>
6. The Weingarten Learning Resources Center helps Penn students improve their academic performance: <http://www.vpul.upenn.edu/lrc/>.
7. The math department maintains a list of tutors-for-hire: <http://www.math.upenn.edu/ugrad/tutors.html>

Academic Honesty:

- In-class work is done collaboratively, but you must write up your own assignment so that it represents your own understanding. For the out-of-class portion, you are welcome to study together, talk about problems with others, look at math resources online, etc., but you need to write your final solution on your own (i.e., no copying, whether it be another student's solution or something online)
- Infractions will result in loss of credit for the exam or assignment and, depending on the situation, university discipline. For more details, see <http://www.upenn.edu/academicintegrity/>.

Accommodations: Please talk to me as soon as possible about accommodations through Student Disabilities Services (Stouffer Commons, 3702 Spruce Street, Suite 300, <http://www.vpul.upenn.edu/lrc/sds/>), scheduling conflicts with religious holidays, athletic events, etc., or working around health issues and other situations.