Syllabus: Math 100, Sections 102/104

Basic Information

Hi! I'm your instructor. My name is Elyse Yeager. I prefer to be called "Elyse" or, if that makes you uncomfortable, "Dr. Yeager." My pronouns are she/her/hers. You can email me at elyse@math.ubc.ca. My office is room 229F in the Mathematics Building, and my office phone is (604) 822-3629.

The website for all Math 100/180 courses is here:

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`http://www.math.ubc.ca/~andrewr/maths100180/2016/home.html`

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This website has detailed information, including the course outline, resources, and policies. This syllabus is purely supplementary to the information on the website.

Our final exam is **not yet scheduled**. Final exams are held in December, from the 6th to the 21st, so please do not make travel plans for the winter until you know when our final will be.

Classtime

You are expected to come to class with some way of writing. Note-taking is encouraged, and from time to time you will be asked to work on a problem during class.

I try to foster an interactive classroom environment. I do hope that you'll raise your hand when you have a question, or to suggest an answer for a question I've posed to the class. Make sure you're participating, while still being respectful of your shyer classmates who would also like a chance to speak.

The course website has suggestions for problems to do out of online textbooks: it is highly recommended that you do as many of these as you can stomach, from different textbooks and different problem types. I'll post online review materials for you to look at before lecture, to help you prepare for class. If we should fall behind schedule, I might use these as a way of catching up, but to start they are just to give you a brief introduction to something new before class, because developing an intuition about abstract concepts takes time.

Course Description and Goals

Differential calculus is the study of rates of change. Given a model for some process, we want to be able to calculate how quickly the quantities involved are changing. These rates of change are useful in sometimes surprising ways, like finding when a quantity hits its peak, making an accurate, easy-to-calculate approximation for a difficult-to-calculate quantity, and evaluating the relative sizes of two functions that appear similar.

I have three overarching goals for you in this course. The most obvious is that you be able to learn to do the calculations involved with differential calculus. This is probably what you'll spend the most time studying, it will be primarily what is assessed, and it's something you're used to getting out of math courses. The second is that you learn the concepts behind calculus, and how they relate to the calculations you're doing. Determining instantaneous rates of change is all bound up with the idea of the infinitely small; this is a deep connection. In your careers, as you go on to use what you've learned, you'll have to be comfortable interpreting the functions that we usually give you abstractly, without context, so it's also important that you have a firm grasp on the meaning behind the mathematics you're using. Also, the concepts are, for most people, the most beautiful part of calculus, and I would hate for you to miss out on appreciating them. Finally, calculus courses are often used to hone your problem solving ability. We give you big, nasty problems, and you learn to pick them apart in to manageable chunks, solve the chunks, then paste those solutions into a cohesive whole. This process, of changing something you don't know how to solve into something you do know how to solve, is an important skill both inside and outside the classroom.

Getting Help

Lots of people find their first calculus class challenging, and lots of people find their first few years in university challenging. If you find yourself struggling, I hope you'll take advantage of some of the resources available to you on campus.

Help with Course Content

It's good for your brain to work hard! But if you find yourself feeling overwhelmed, please do take advantage of some of these marvellous resources available to you.

- The Math Learning Center is staffed with tutors, and you can go there to meet other students. More information here: `http://www.math.ubc.ca/~MLC/`

- Other students in the course are an important resource. Ask the person sitting next to you if they want to work on homework together, or meet at a coffee shop to study for the next exam. Talking to strangers is hard, but having a community is helpful and important. If someone asks for help, keep in mind that teaching someone is a fantastic learning opportunity. Being able to do a problem on the homework is great, but often we learn even more when we're put in the position of explaining it to someone else.

- Free tutoring: `http://www.ams.ubc.ca/services/tutoring/` For independent, paid tutors, check bulletin boards around the math building.

- The internet has pretty much everything. There's our class discussion board, where you can pose a question to the class. Apart from the CLP notes and problem book, there's lots of free online textbooks and notes you can search for. (I recommend MOOCulus and APEX Calculus in particular, but find a textbook that clicks for you.) There's also tutoring videos, like Khan Academy. If you look hard enough, the UBC pages have old exams.

- Talk to your teacher! Office hours are time I set aside to meet with students. You can grab me after class or email me at elyse@math.ubc.ca to ask a short question, or schedule an in-person meeting if office hours don't work for you.

Help with Other Issues

Student Services at UBC has a variety of programs to help you stay happy and healthy. A good place to start is here:

$$\text{http://students.ubc.ca/livewell}$$

UBC provides services to address, among other things: illness and injury, mental health and wellbeing, sexual assault (for people of all genders), other violence, discrimination and harrassment, diversity, disability, and ongoing medical considerations. If you have legal issues, you might be able to get help from the Law Students' Legal Advice Program, `http://www.lslap.bc.ca/` The Office of Equity and Inclusion `http://equity.ubc.ca/` is a good place to go if you want more information about maintaining an environment that is respectful, especially with regards to interculturality, LGBT*QIA status, race, students who are parents, etc. The Office of Access and Diversity `http://students.ubc.ca/about/access` provides disability support.

If something comes up during the semester that interferes with your academic progress (such as an illness, or caring for a loved one) contact your faculty advising office as soon as possible. You can find them here: `http://students.ubc.ca/enrolment/courses/academic-planning/advising`.

Education is a tool for a better life, from increased earning potential to a heightened appreciation for the beauty and complexity in the world. Your real life extends far beyond the boundaries of this campus. It's important that you don't let your education interfere with your physical or emotional health.

Addressing Issues with the Course

Full disclosure: I'm not a perfect instructor. If there's something about this course that bothers you, I'd like the chance to address it. You can contact me in person after class or during office hours, or write me an email. If you are uncomfortable discussing it with me, you can talk to the Instructor in Charge, Professor Andrew Rechnitzer: andrewr@math.ubc.ca.

If it isn't feasible to change the thing that's bothering you, we still might be able to come up with strategies for addressing it. At the very least, you can get an explanation of why things are the way they are.