

1 Course Information

QSCI 292: Analysis for Biologists II

In this course we will learn methods of integral calculus, with an emphasis on biological and ecological applications. I hope to give you a flavour for the richness and creativity in such problems and show you how these methods may apply to your own academic interests. By the end of the course, you will be able to describe scientific phenomena using mathematical notation, and based on these descriptions make quantitative conclusions about how systems work.

2 Materials

Text: *Calculus for Biology and Medicine, Second Edition*

Author: Claudia Neuhauser

We begin with reviewing some pre-requisite material, then move on to Section 5.8 and will work our way through most of Chapters 6, 7 and 8. Parts of Chapter 10 may be covered depending upon time and class interests.

Calculators: Graphing calculators are not required and **not allowed**. You may use a scientific calculator if you wish, though it is not required.

3 Teacher Information

Name: Aditya Khanna

Office: Loew 338

Email: khanna7@u.washington.edu

4 Class Meetings and Expectations

We will meet Monday through Friday from 9:40 to 10:40 AM in MEB 237. Come prepared to class by reading the material before hand. I will assign the readings daily in-class. Also be ready to listen, ask questions, and work on problems individually and in groups. Working problems is perhaps the most effective way to learn math, so that will be the primary focus of this course.

5 Office Hours

Since homework will be due Friday (more on that in Section 6), I will hold office hours on Thursday and either Tuesday or Wednesday. We will decide exact times during the first couple of days of the course. I am also available by appointment.

Office hours will be held in **Loew 338**. If a few students show up, we might go over to the library a few doors down where there is a white-board to work on things. I am also happy to talk to you after class.

6 Homework Assignments

We will have homework (mostly consisting of problems from the text) due every Friday at the beginning of class. Each homework assignment will consist of material covered from Thursday of the previous week to the Wednesday before the assignment is due. I will communicate homework problems to the class by email at least a week before the due-date. Homework 1 is an understandable exception, I will send out this assignment by email the first day of class. Problems will also be posted to the course website.

I encourage you to work together, but your write-ups should be your own work. I strongly suggest starting on homework early so you can ask questions as you go along. *Late homework will not be accepted without prior approval.*

There will be shorter homework assignments during exam weeks.

7 Quizzes and Exams

Midterms: We will have 2 midterms on the following days:

Wednesday, 16 July

Wednesday, 6 August

The first midterm will be based on the material covered until Friday, 11 July. The second midterm will be on the material covered from Monday, 14 July to Friday, 1 August.

Final: The **final exam** is on 22 August, the last day of class. It will contain problems from material throughout the course.

Other Graded Work: From time to time, I will also give you short quizzes (about 15 minutes) in class. we will probably have about 4 to 7 of these through the quarter. If they are announced ahead of time, I will grade them only for the content

of your answers. If they are unannounced, you will get 50% of the credit just for taking them.

There will also be a few group assignments, and each member of the group will get credit for working on the problem set.

Note: For earning credit on any problem, be it homework, exam, or a class assignment, you must present your work to receive credit; just writing an answer is not sufficient (except in rare cases).

8 Grades

Homework: 30%

Midterms: 30%

Final: 20%

Quizzes: 10%

Group Work and Class Participation: 10%

9 Request

The focus of this course is on applications of calculus, and I would like to hear from you about your academic interests so we can make this course more relevant to you. You can communicate about your interests either in class, during office hours or by email. I request your patience and commitment. Mathematics can be long and hard, but once you understand something, it is truly fulfilling. Since I am expecting you to do your best work, you should expect nothing less from me! Please keep talking to me about what is and what isn't working for you. I will be happy to consider making changes that benefit the class as a whole.