

# Calculus 1201B – Applications for the Biological Sciences

## Section 002

### Course Information

Req. Texts: *Calculus for the Life Sciences*, by Bittinger, Brand & Quintanilla (Pearson)  
*Student's Solutions Manual: Calculus for the Life Sciences*, by Butros (Pearson)  
Pre-reqs: One or more of Calculus 1000A, Calculus 1100A, or Mathematics 1225A.  
Website: [www.webct.uwo.ca](http://www.webct.uwo.ca)

Lectures: 08:30-09:30, Mon/Wed/Fri, KB-K106  
Tutorial: 17:30-18:30, Thu, MC-110

Instructor: Geoff Wild (Assistant Professor)  
Applied Mathematics, MC-265  
[gwild@uwo.ca](mailto:gwild@uwo.ca)  
ext. 88784

Office Hrs: TBA

TA: TBA  
Office Hrs: TBA

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

### Course Syllabus

#### Objective

The objective of this course is to provide students with an overview of common applications of mathematics in the **life sciences**. Although titled "Calculus," this course covers many topics not usually encountered a first-year calculus course. In addition to standard topics like differential equations, Calculus 1201B also introduces students to linear algebra, and probability.

#### Tentative List of Topics

We plan on covering Chapters 6, 8, 9, and 10 of the textbook and students are expected to have read these chapters. Additional reading and practice problems may be assigned. Overall, the student will become familiar with problems relating to

- Scaling and Allometry (notes),
- Matrices and Applications (Chapter 6),
- First-Order Differential Equations (Chapter 8),
- Higher-Order and Systems of Differential Equations (Chapter 9),
- Probability (Chapter 10).

## Evaluation

Your final grade will be based your quiz marks, the mark you receive on the midterm exam, and the mark you receive on the final exam.

### **Quizzes** *Best 8 or 10 x "Q factor"* **30 %**

You will sit a maximum of **10 quizzes** at various times throughout the course. Each quiz will be approximately 20 minutes in length, and will cover both lecture material and assigned practice problems.

There will be **no make up quizzes** offered. Instead, only your best 8 quiz marks will be counted toward your final grade. You may choose to write all 10 quizzes if you wish.

To correct for differences in the difficulty of quizzes written by students in different sections, your quiz grade will be multiplied by a "Q-factor."

Students enrolled in Section 002 will be able to write quizzes at the following scheduled times:

Quiz	Date	Time
1	Jan 14	08:30-08:50 (in class)
2	Jan 21	08:30-08:50 (in class)
3	Jan 28	08:30-08:50 (in class)
4	Feb 4	08:30-08:50 (in class)
5	Feb 18	08:30-08:50 (in class)
6	Feb 25	08:30-08:50 (in class)
7	Mar 4	08:30-08:50 (in class)
8	Mar 11	08:30-08:50 (in class)
9	Mar 18	08:30-08:50 (in class)
10	Apr 1	08:30-08:50 (in class)

### **Mid-Term Exam** **30 %**

The Mid-Term Examination will be held from 19:00-22:00 on Thursday, February 12. The exam will cover material from Weeks 1 to 5.

### **Final Examination** **40 %**

The Final Examination will be three hours and will cover material from Weeks 6 and on (i.e. the final exam is not cumulative). The Final Examination will be held during the Final Examination period and will be scheduled by the university.

## **Addenda**

### Academic Accommodation Due to Illness

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your faculty's Dean's Office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from your faculty's Dean's Office immediately. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here:

[https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)

### Academic Integrity

You should familiarize yourself with University of Western Ontario's Scholastic Offence Policy. The policy describes the university's process for dealing with scholastic offences, including a list of sanctions:

<http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf>

The Office of the Ombudsperson produces a student guide on cheating, plagiarism and other scholastic offenses:

<http://www.uwo.ca/ombuds/student/cheating.html>