

Vector Calculus with Chemical Applications

(Math 229, Fall 2018)

Class Meetings: Monday, Wednesday and Friday 12–12:50 in Maybank 113, and Tuesday and Thursday 12:15–1:30 in Maybank 112.

Text: There is no textbook to buy for this course: we use the free PDF book *MATH 229: Vector Calculus with Chemical Applications* by Professor Jason Howell, which will be provided in **OAKS**.

However, there are a couple of useful references:

Calculus: Early Transcendentals [CET] by James Stewart, 8th. edition, as used in the calculus sequence, and

The Chemistry Maths Book [TCMB] by Erich Steiner, 2nd. edition.

The PDF book has cross-references to these.

Course Web Site: Course materials, assignments, and announcements will be available at the course OAKS website at <https://lms.cofc.edu>. Students are responsible for checking the site regularly for any information relevant to the class.

Prerequisites: C- or better in MATH 120 or HONS 115.

Instructor: Brenton LeMesurier, Email lemesurierb@cofc.edu, Phone: 953-5917.

Office: Robert Scott Small Building, room 344.

Office Hours: To be arranged. For now I am available immediately after each class and by appointment.

Course Objectives and Student Learning Outcomes

- Be familiar with multidimensional coordinate systems and how to convert coordinates, functions, and equations from one coordinate system to another.
- Use vectors to describe lines and planes in multidimensional space.
- Represent geometric actions and transformations through matrix operations on vectors.
- Represent functions using infinite series.
- Calculate partial derivatives of multivariate functions.
- Calculate integrals of multivariate functions.

These outcomes will be assessed on the final exam.

Practice Problems and Exercises

The PDF book for this course contains numerous Practice Problems (with solutions) and Exercises; reading each section as we cover it in class and then working on these is a good place to start your study.

Graded Work: Quizzes, Tests and Final Exam

Quizzes. There will be quizzes in most Tuesday and Thursday classes. The content of the quizzes will be based on lectures, reading assignments, and the above practice problems and exercises. No make-up quizzes will be given; however the two lowest (or missed) quiz scores will be dropped.

Midterm Tests There will be four tests. held in the Thursday classes of **September 13, October 4, October 25, and November 15**

If you miss a test, the score can be made up only for very convincing reasons, documented through The Office of the Associate Dean of Students: see

<http://studentaffairs.cofc.edu/about/services/absence.php>

The make-up score will then be base on your results on the corresponding part of the final exam.

Final Exam The final exam will be on either **Friday December 7** or **Tuesday December 11**, from **noon to 3 pm**. (We have a choice of day, due to meeting five days a week!)

Grading Scheme

The total grade will be weighted 15% on the quiz total, 15% on each test, and 25% on the final exam. However, if the exam grade is higher than the lowest test grade, the exam will have weight 35%, and the low test score 5%. The aggregate score guarantees at least the following letter grades:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90-100	87-89	84-86	80-83	77-79	74-76	70-73	67-79	64-66	60-63	57-59	0-56

Reading Assignments and Question Time

I will usually set reading at the end of each class, and start each class with time for questions on the reading, exercises and such.

Class Attendance Policy

Attendance to all classes is expected, and you are responsible for knowing what happens in each class including assignments, information about test topics, and due dates. Thus if you miss a class, check for news, either from a classmate or from me; checking the course's section in **OAKS** should help.

Missing a test or more than three quizzes without adequate explanation may lead to a W/A: withdrawal due to absence.

Accommodations for Students with Disabilities

If you have a documented disability, please contact me during the first two weeks of class or as soon as you have been approved to receive accommodations, so that reasonable accommodations can be arranged. Approval for such accommodations is arranged through the Center for Disability Services: see

<http://disabilityservices.cofc.edu/accommodations/>

College of Charleston Honor Code and Academic Integrity

Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved.

Cases of suspected academic dishonesty will be reported directly to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student's transcript for two years after which the student may petition for the XX to be expunged. The F is permanent. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration – working together without permission – is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others' exams, fabricating data, and giving unauthorized assistance.

Students can find the complete Honor Code and all related processes in the Student Handbook at <http://studentaffairs.cofc.edu/honor-system/studenthandbook/>

Some Important Dates and Times

Monday August 27	Last day to drop/add courses.
Monday September 3	Labor Day — classes <u>do</u> meet.
Thursday September 13	Test 1 (proposed).
Thursday October 4	Test 2 (proposed).
Saturday October 6	Storm makeup day, if needed
Wednesday October 24	Last day to withdraw with a grade of “W”.
Thursday October 25	Test 3 (proposed).
Monday November 5	Fall Break (or storm make-up day).
Tuesday November 6	Fall Break and Election Day — no classes.
Thursday November 15	Test 4 (proposed).
Wed. November 21 – Sun. November 25	Thanksgiving Break — College closed; no classes.
Saturday December 1	Storm makeup day, if needed.
Monday December 3	Last day of classes.
Friday December 7, noon-3pm	Final Exam, if using MWF class times
OR	
Tuesday December 11, noon-3pm	Final Exam, if using TR class times.
Friday December 14	Grades available on MyCharleston by 5pm.