

# MTH 254—Multivariable Calculus—Winter 2020

CRN 30155 M,T,W,F 10-10:50 AM WOH 120

**Instructor:** Shannon Harbert

**Email:** [harbers@linnbenton.edu](mailto:harbers@linnbenton.edu)

**Office:** WOH 132

**Office Hours:** T 11-12, R 1-3, and by apt.

**Course Materials:** **My Math Lab Course ID:** **harbert26894**  
(Calculus: Early Transcendentals, 3rd edition by Briggs, Cochran, and Gillett)

**Course Description:** The fourth course in the calculus sequence for students majoring in mathematics, science and engineering. Topics include vectors in 2 and 3- space, graphs, contour maps and equations of multivariable functions and partial derivatives, directional derivatives, optimization of surfaces, cylindrical and spherical coordinates, multiple integrals and their applications. **Prerequisite:** MTH 252 or equivalent with a grade of C or better. This class will be difficult if you are not competent at differentiation and integration.

**Outcomes:** Upon successful completion of this course, students will be able to:

- Demonstrate an understanding of vectors, vector operations, and apply vectors to solve application problems in 2D and 3D.
- Graph and write equations for functions in 3D.
- Apply limits and derivatives to multivariate functions.
- Apply integration techniques to multivariate functions.

**Course Grades:** Your grade in this class is based on the following:

2 Exams (20% each)	40 %
Final Exam	25 %
Online Homework (MML)	10 %
Written Homework (WU)	10 %
Class Work (ICA)	10 %
Quizzes (Q)	5 %

Final Grade: 90%-100%=A, 80%-89%=B, 70%-79%=C, 60%-69%=D, <60%=F

**Class Work:** Mathematics is a combination of knowledge and skill, and like any skill (or sport) can only truly be learned by doing. We will frequently work in groups to solve calculus problems during class. If you are not in class to work on the problem, then you will not earn credit. There is no way to make up this in-class work but I will drop one of these in-class worksheets at the end of the term.

**Online Homework:** Online homework will be completed and submitted electronically using *MyMathLab*. You must register for this at [www.pearsonmylabandmastering.com](http://www.pearsonmylabandmastering.com)

using the Course ID#. Although you will enter your *MyMathLab* answers online, you should still work the problems by hand in a notebook you create for your 254 homework. This will give you practice for writing out solutions for the exam, give you a place to start when asking for help, and give you a clear record of work to use to study for exams. When you come to office hours or other tutors for help, you should bring a copy of the problem and your notes for your attempt of the problem. The homework will have a hard deadline to receive full credit. Any homework completed after the deadline (and only up until the day of the test over that material) will be worth 70%.

**Written Homework:** You are expected to carefully write up the solution to each problem and turn it in on the assigned date. The write up will include: the problem statement, all steps--including the calculus and algebra necessary to solve it, appropriate explanation of the process and the answer clearly identified. ***It should be written so that anyone in a MTH 254 class would be able to easily follow and understand your solution.***

Written Homework will be graded on correctness, presentation, readability and the communication of your solution. Up to one half of the grade is based on the *communication and explanation of the solution*. In other words, an incorrect but well-explained solution can still earn up to half of the points. Similarly, a correct solution without explanation can lose up to half of the points. The due dates for Written Homework will be listed on the calendar. **No late write-ups accepted.** *You should start these assignments early as the problems are often challenging.*

**Tests:** There are two midterm exams that you will take in class and a Final that is comprehensive (also in class). The tentative dates for these exams are listed on the course calendar. The final exam is determined by LBCC . *There are no exam retakes or make-ups.*

**Missing Class:** If you miss class, check online for the lecture notes and any changes to the schedule. Again, you cannot make up in-class activities. Homework will not be accepted after the test deadline. The biggest reason why students fail to complete a math class is because of poor attendance. If you miss several classes you will find it very difficult to get caught up.

**Class resources:** This class has many resources to help you succeed.

- Whether you have questions about material, the course structure, or even other topics, I am available in my office hours (drop-in) or by appointment.
- Your classmates are a great resource and studies have correlated academic social groups with success in learning mathematics.
- The Learning Center offers the Math Help Desk and free one-on-one tutoring. (*Hours Mon-Thurs 7:30am-9pm, Fri 7:30am-5pm, Sat 11am-4pm.*)
- [Paul's Online Math Notes](#) for Calculus 3 has additional examples, practice problems and solutions that are a great resource.

- In addition to your textbook, *MyMathLab* has a **StudyPlan** that has additional homework problems with “Help Me Solve This” and “Show Me An Example” options.

**Expectations:** Expect to come prepared and ready to engage the class. This includes being present, asking questions and participating in activities. We will cultivate a culture of respect in the class, in word as well as behavior. Along these lines, please turn your cell phone ringer off and postpone cell conversations until after class. If you must leave your phone on due to some unusual emergency situation, please notify me before class, set the phone on vibrate and sit near the door so that you can leave class as soon as the phone rings and before you answer it.

**Student Support:** LBCC has many student support programs. These folks will help with issues that get in the way of your success. Someone can help you find child care, medical help or part- time employment. Check in the Career Center, the Multicultural Center, or Student Life for more information.

**Special Circumstances:** Students who may need accommodations due to documented disabilities, or who have medical information which the instructor should know, or who need special arrangements in an emergency, should speak with the instructor during the first week of class. If you think you may need accommodation services, please contact Center for Accessibility Resources, 917-4789.

**Academic Honesty:** I assume that you are ethical and honest. However, if there is an incident of academic dishonesty (including but not limited to cheating, plagiarism, forgery, or aiding or abetting cheating or plagiarism), you will be subject to disciplinary action which may include receiving an F for this class. Any incident of this nature will be reported to the administration where it will be noted in your file.

**Statement of Nondiscrimination:** LBCC maintains a policy of nondiscrimination and equal opportunity in employment and admissions, without regard to race, color, sex, marital and/or parental status, religion, national origin, age, mental or physical disability, Vietnam era, or veteran status. The LBCC community is enriched by diversity.