

Welcome to Math 273 Multivariable Calculus 2 – Fall 2014

Section 1: 9:00 - 9:50 M-F in Hertz 104, occasional Wednesdays in Bouillon 103

Section 2: 13:00 - 13:50 M-F in Hertz 118, occasional Fridays in Bouillon 103

Instructor: Dr. Jean Marie Linhart

Phone: (509) 963-2123

Webpages: (course) <http://canvas.cwu.edu>

(HW) <http://webwork.math.cwu.edu>

(me) <http://www.cwu.edu/math/jean-marie-linhart>

Office: Bouillon 119

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Office Hours: M-Th 2:00 - 2:50 pm
and by appointment.

Required Text: *Calculus*, by McCallum, Hughes-Hallett, et al, **6th** ed.; Wiley

Assignments and grades will be posted to Canvas. We will be using WeBWorK for online homework.

Course Goals: Math 273 is a second course in multivariable calculus, and the main object of study is multivariable integration. You will learn how to set up and evaluate double and triple integrals in various coordinate systems (rectangular, polar, cylindrical and spherical), as well as how to calculate line and surface integrals of vector fields.

Perhaps the most important part of the course comes at the end, when we will discuss generalizations of the fundamental theorem of calculus to calculate such integrals: Green's Theorem, Stokes' theorem and the divergence theorem.

In addition, you will learn about some applications of double and triple integrals, such as center of mass, moments of inertia and flux. In terms of book chapters, we will be covering Chapters 16 through 20.

Additionally, it is my hope that this course is a step in your preparation for a successful career. The behavior and standards expected of a professional in the work place are what you should aim for in all aspects of work, attendance, and preparation for this course.

Occasionally, we will be using the computer lab in Bouillon 103. I will announce these lab days ahead of time.

Grades/Exams/Homework

Grades

Grades will be calculated using the following weighting system:

WebWork Assignments: 10%

Written Assignments: 30%;

Attendance/Participation: 5%;

Exams: 55% total, broken up as follows: 15% for each mid-term and 25% for the final and the following scale:

	87 – 89.9 : B+	77 – 79.9 : C+	67 – 69.9 : D+	below 60 : F
93 – 100 : A	83 – 86.9 : B	73 – 76.9 : C	63 – 66.9 : D	
90 – 92.9 : A–	80 – 82.9 : B–	70 – 72.9 : C–	60 – 62.9 : D–	

Because of privacy rights, I do not discuss grades over email or telephone.

WebWork

WebWork is the online homework system for the math department at CWU. Problems assigned through WebWork are to make sure you get practice with some of the more routine problems of multivariable calculus. They are of little value if you attempt to repeatedly guess or reverse engineer the questions, and so I urge you to take the time to carefully write up your solutions to these problems, as you would if they were given on an exam, as you go along. Make sure you understand the reasoning behind each answer you give and can back this up with work and words on paper. WebWork deadlines are firm, no extensions will be given. The lowest assignment score will be dropped to take into account unexpected emergencies.

Written Assignments

We will have a graded written assignment most weeks, except for those weeks when we have an exam. This will likely be a take-home assignment, but might also be an in-class quiz, and it is likely these problems

will attempt to get at the trickier concepts in the course. If it is a take-home assignment, the due date will be given when it is assigned. For take-home assignments, please attempt the problems on your own, without using outside resources. If you are stuck, you are welcome to work with other students, use the web or books to gain additional insight. However, you must put these other resources away, and write up your own understanding of the solutions in your own words. More information on my policy on working with others and using outside resources is available at <http://www.cwu.edu/math/group-work-and-using-outside-resources>. Copying will result at minimum with a zero on the assignment, and will be reported to the student conduct office. Assignments make up 30% of your final grade, which is more than even the final exam. Getting these done is important, both to your grade and to your understanding of the material.

Exams

There will be three exams: two mid-terms and a final. The first mid-term will be on Thursday, October 16, the second mid-term will be Thursday, November 13 and the Final Exam will be on **Section 1: Tuesday, December 9 at 8 am, Section 2: Tuesday December 9 at 12 pm**. The Final Exam will be cumulative, and **cannot** be taken early. If you miss an exam, you may be allowed to take a make-up. To get a make-up, you must notify me before the exam (if possible) or within 24 hours after the exam. In addition, a make-up is only allowed if you have proof of a compelling reason for having missed the exam. When a make-up exam cannot be taken before I return the corrected exam, I may instead replace that portion of your course grade with your final exam grade. You will be allowed to bring in one 4 × 6 inch notecard, filled out however they want, front and back, for use with exams. You must fill out your own notecard.

Attendance/Participation

Any student who is not in class when attendance is taken is subject to being marked absent for the day. Participation will be evaluated on the basis of attendance, participation while in class, and participation in any discussion that takes place online for the course.

Ungraded work

The assignments alone are not sufficient to insure you have a thorough understanding of the material from the course. Homework problems from the book will be assigned regularly, although not collected, and my recommendation is that you do them.

Late and Make-up Policy for Graded Assignments

I expect you to hold yourself to professional standards in this class. Because even professionals sometimes run into conflicts, I will accept at most **two** late take-home (not WebWork) assignments for full credit, provided you ask permission to hand them in late at least half a day before the due date, thus showing me that you are planning ahead. To get credit for a late assignment, it must be turned either before I return the corrected assignments to the rest of class or within two days of instruction of the due date, whichever comes first. After two late assignments have been accepted, I will not accept any late work for credit.

Academic Integrity

You are expected to do your own work. While you are welcome to use outside resources and consult with others on all work taken home, you are subject to the requirement that what you hand in should, in fact, represent your own understanding of the material and not work copied or memorized from another source.

All in-class quizzes and tests are expected to be done without any resources except those explicitly authorized by the instructor. Exams and quizzes are not to be discussed with others who may not yet have taken the exam or quiz or within earshot of anyone who may be taking the exam or quiz at a later time. Note that I have two sections of this course, and so it is entirely possible for someone to be taking an exam at a later time than you are.

If a paper or report is assigned, students are expected to conform to academic standards for citing summarized, paraphrased and quoted work used; if you are not sure what this means, please **ask**.

Cheating will result in at minimum a zero on the assignment, quiz or exam. Cheating will be reported to the office of student conduct. Egregious offenses may result in a failing grade for the course and/or more serious consequences as merited by the situation.

Expectations

As I am preparing you for employment out there in the *real world*, I expect you to adhere to professional standards while taking my class. Daily attendance is expected. Be on time and prepared, take notes. Work should be neat and well-organized, and certainly should be handed in on-time.

Math classes are considered difficult largely because the material is hierarchical in nature; you must master the first step to be able to manage the next.

We have a great deal of material to cover in a quarter. As a result, the pace of the class will be very fast, and it may not always be possible to answer every question in class. If you have a question that we weren't able to get to in class, please come by office hours or post a question to Piazza.

Secrets for success:

1. You should budget a minimum of 10-15 hours per week for work outside of class.
2. Start on the homework problems as soon as you can.
3. Attempt to work on your math every day or at least every other day. The hardest part is usually getting started. Find a quiet place to work, get your book and notes together. Put away distractions such as your cell phone, TV, or laptop. Then, set a timer for 30 minutes (or 15 if you are having a bad day) and resolve to put your best effort in for at least that length of time.
4. Discussing problems and solutions with peers and using the internet is encouraged, with two caveats.
 - Before you go ask or look for a solution, make an honorable effort to solve the problem on your own. Spend time thinking and strategizing before asking or searching for help.
 - You must write up your understanding of a solution **on your own**. You may not copy anyone else's work. See my [guide to group work and using outside resources](http://www.cwu.edu/math/group-work-and-using-outside-resources), <http://www.cwu.edu/math/group-work-and-using-outside-resources>, on the web.
5. As you progress in your university studies and in your career, problems get more and more difficult to solve. You may have to start with easier (unassigned) problems before you are even ready to start to work on an assigned problem. Some problems may take more than an hour to solve. Persistence pays off.
6. Explain what you are doing. Use your words. This will help you to understand the concepts critical to success in the class, and will help you get a higher grade.
7. I am always happy to help you if you are stuck. You will get the most out of my help and the University Math Center if you attempt the problem on your own or with your peers before asking an expert.
8. Do your scratch work before you do a final write-up of your work. What you hand in should be neat and professional and all pages should be stapled together.

Important Dates

September 30 – Last Day for Add/Drop

October 15 – faculty development day/study day for students// October 16 – first mid-term exam

November 7 – uncontested withdrawal deadline

November 11 – Veteran's Day, no classes

November 13 – second mid-term exam

November 26-28 – Thanksgiving Holiday, no classes

December 5 – last day of classes

December 9 - final exam (Section 1: 8:00 - 10:00 a.m., Section 2: 12:00 - 2:00 pm)

Students with Disabilities

I am happy to work with students with disabilities. To set up academic adjustments in this class, you should give me a copy of your *Confirmation of Eligibility for Academic Adjustments* from the Disability Support Services Office and come see me in office hours or make an appointment to come see me as soon as possible so we can discuss how the approved adjustments will be implemented in this class. Students without this form should contact the Disability Support Services Office, Bouillon 140 or dsrecept@cwu.edu or (509) 963-2171.