

**Spring 2018 Math 273 Multi-variable Calculus 2**  
**8:00 - 8:50 M-F in Bouillon 112**  
**occasional Thursdays in Black 129**

**Instructor:** Dr. Jim Bisgard

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**Office Hours:** M-F 9:00 - 9:50  
and by appointment.

**Course Goals:** Math 273 is a second course in multi-variable calculus, and the main object of study is multi-variable 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 involving vector fields. We will also discuss generalizations of the fundamental theorem of calculus (Stokes' theorem and the divergence theorem) to calculate such integrals. 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 15 through 17.

Occasionally, we will be using the computer lab in Black 129. I will announce these lab days ahead of time, and I'll try to put a note up on the regular class door to remind you if you forget.

**Required Text:** Calculus, by Rogawski and Adams, 3<sup>rd</sup> ed.; Freeman

## 1 Grades/Exams/Homework

### Grades

Grades will be calculated using the following weighting system: Quizzes: 40%; Homework: 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–	

### Quizzes

We will have a take-home quiz every week, except for those weeks when we have an exam.

**Each quiz will be due at 10 am two days after being handed out.** (So, a quiz handed out on Tuesday will be due at 10 am the following Thursday). I encourage you to work with other students, but you should write up your solutions in your own words.

Notice: quizzes make up 40% of your final grade. We will have 8 quizzes, which means each quiz is worth 5% of your grade. Failing to turn in quizzes has serious consequences on your final grade!

### Homework

Homework problems will be assigned as we go. Problems assigned on a Wednesday or later will be due on the Friday of the following week **10:00 am**. (For example, problems assigned on March 28, 29, 30, or April 2 or 3 will all be due on Friday, April 6.) I will be assigning odd problems from the book and will grade on completion only. This means I'll be most interested in the work you've done - if you just write down an answer, you won't receive any points. It is a good idea to work with other students from class. We won't have time to do every homework problem in class, so please feel free to ask during office hours. However, don't put off asking about homework until the day before it's due! There will be homework due the last week of class, and a homework due during finals week.

## Late Policy for Homework and Quizzes

Homework and quizzes are due at 10 am on their due date. Assignments handed in after that time on their due date will lose 4 points immediately, and 4 more points for every 24 hours after. That means: if you hand in a quiz at 10:30 am on its due date, you can earn at most 16 out of 20 on that quiz. If you hand in your quiz at 10:30 am the day after it is due, you can earn at most 12 out of 20, since over 24 hours will have passed. There will be a quiz due the last week of class.

## Exams

There will be three exams: two mid-terms and a final. The first mid-term will be on Wednesday, April 18, the second mid-term will be Wednesday, May 9 and the Final Exam will be on **Tuesday, June 5, 8 - 10 am**. The Final Exam will be cumulative, and **CANNOT** be taken early! **DO NOT plan on taking your final early**. If you miss an exam, you can 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. Make-ups will not be given for circumstances you know about ahead of time! When a make-up exam cannot be taken before I return the corrected exam, I reserve the right to instead replace that portion of your course grade with your final exam grade.

## Expectation for Quizzes, Exams, and Office Hours

Your quizzes and exams should be written up in an orderly fashion, which means your work should be neat, legible, and use complete sentences where appropriate. (For example, I don't expect you to write  $(a + b)^2 = a^2 + 2ab + b^2$  using complete sentences!) To keep your work orderly, try to describe what you are doing. For example, if you are calculating a line integral, you might first write: "Parametrizing the curve:  $\vec{r}(t) = [\text{mathematical formulas}]$ ", and then write "Along the curve, the vector field is  $\vec{F}(\vec{r}(t)) = [\text{mathematical formulas}]$ ", and so on.

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 email me to set up an appointment if you can't make office hours. When you come to office hours, **you must bring your notes!** Notice that attendance is considered necessary for success in this class. *Going to the University Math Center is no substitute for attending class or coming to office hours when you don't understand a concept!*

## 2 Important Dates

April 3 - Last Day for Add/Drop

April 18 - first mid-term exam

May 9 - second mid-term exam

May 11 - uncontested withdrawal deadline

June 5 - final exam (8:00 - 10:00 a.m.)

Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any barriers to learning, discuss your concerns with the instructor. Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations. Student Disability Services is located in Hogue 126. Call (509) 963-2214 or email [ds@cwu.edu](mailto:ds@cwu.edu) for more information.