

MATH 273 Multivariable Calculus II
Dr. Boersma
Winter 2021

Goals: We will continue the study of multivariable calculus. In particular we will investigate double and triple integration in different coordinate systems, line and surface integrals, and the major theorems of vector calculus. We will cover (for the most part) chapters 15, 16, and 17 from our textbook.

Office: Samuelson 221-A, phone: 963-1395, email Stuart.Boersma@cwu.edu. Until further notice, I will not be holding regular office hours in person. Please see the announcements posted in Canvas for the best way to get a hold of me. Canvas also has information about weekly online recitation sessions where I will be available to answer homework questions.

**Required
Materials**

1. **Text:** *Calculus* or *Multivariable Calculus*, by Rogawski and Adams, 4th edition.
2. **Computer:** Having regular access to a computer connected to the internet is essential for the successful completion of this course.

SBG: This course is graded by a methodology called Standards Based Grading. There is a list of 16 learning standards for this course (available on Canvas), nine of which are designated Required Standards. Each standard will be measured by a quiz (called an Evaluation). Rather than receiving a numerical score for each Evaluation, you will receive “Exceeds (E)”, “Meets Standards (M)”, or “Not Yet (NY)” (meaning you have not yet performed well enough to received credit for that standard).

One key aspect of this system is constant reassessment. Rather than have your grade affected by your performance on a single exam day, you will be given multiple opportunities to demonstrate your mastery of each standard. Your grade will be based on your highest level of achievement on each standard. This grading system rewards **growth**. Rather than slowly losing points as the quarter progresses or having your final grade dramatically affected by a single poor exam score, you can steadily make progress towards an “A” in the course as long as you keep up with the material and manage your time smartly.

**Nuts and
Bolts:**

1. You may take evaluations at selected times on Mondays, Wednesdays, and Fridays. Based on your performance, you may elect to take an Evaluation a second or third time. I will record your highest level of achievement on each standard. If you need to retake an Evaluation a fourth time, you can receive no more than a score of “Meets Standards”. Optional Evaluations may not be taken more than four times. Please see the instructions for each

Evaluation on Canvas for more complete information on scheduling and taking an Evaluation. **Standards 15 and 16 are continually evaluated throughout the course, so please make a special note of these two standards.**

2. You can only take one evaluation for a particular standard on any given day. You may take evaluations on more than one standard on a single day.
3. Homework assignments from the textbook will be assigned to give you practice with the course content. The majority of the Evaluation questions will be very similar to those found in these homework assignments, examples from the textbook, and examples from our class videos.
4. While you have some control over when you take the Evaluations, **by February 12 you must have attempted the evaluations for Double Integrals 1R, Double Integrals 2R, Triple Integrals 1R, and Triple Integrals 2R.** For any of these, if you have not made a clear honest attempt by February 12, the highest grade you may possibly receive is a “Meets”. If you are keeping up in the course, there should be no problem meeting this deadline.
5. During Finals Week (March 15 - 19), a few special rules apply:
 - a. You may take evaluations on Monday, Wednesday, and Friday, but you may sign up to take no more than four evaluations this week.
 - b. You can only take one evaluation for a particular standard this week.
 - c. Friday, March 19 is the last day to take an Evaluation.
6. There are 16 standards for this course with nine being required and seven being optional. The title of each required standard ends in an “R” (like “Double Integrals 1R”). For each standard attempted, you will receive a grade of “Exceeds (E)”, “Meets Standards (M)”, or “Not Yet (NY)” (meaning you have not yet performed well enough to received credit for that standard). To pass the class with a “C” or better, you will need to pass all nine required standards. See the following grading chart for more detailed information.

Grade	# of Required	# of Optional
A	9 at E	5 at E
A–	9 at E	4 at E
B+	9 at E	3 at M
B	8 at E and 1 at M	2 at M
B–	7 at E and 2 at M	1 at M
C+	6 at E and 3 at M	1 at M
C	4 at E and 5 at M	0
C-	8 at M or E	0

Grade	# of Standards (any) at M or E
D+	6
D	5
D–	4

Homework There will be **daily** homework assignments from the textbook. It is **your responsibility** to keep up with these assignments. Although these problems will not be collected or graded, they will provide you with a variety of practice before attempting the Evaluations.

Students who have special needs or disabilities that may affect their ability to access information or material presented in this course are encouraged to contact me or the Center for Disability Services.