MATH 273 Multivariable Calculus II
Dr. Boersma
Fall 2019

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. Office hours will be announced in class shortly. You may of course drop by anytime. If I'm not busy I'll be glad to talk with you.

Required Materials

1. **Text:** *Calculus* or *Multivariable Calculus*, by Rogawski and Adams
2. TI-83/84 Graphing Calculator or access to other graphing technology [*Optional.*]

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), eight of which are designated Required Standards. Each standard will be measured by a short quiz (called an Evaluation). Rather than receiving a numerical score of each Evaluation, you will receive "Excellent (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 loosing points as the quarter progresses or having your final grade dramatically affected by a single poor exam score, you can steadily 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. At least seven class days and the Final Exam period, will be set aside for in-class Evaluation days. On those days you may take (or retake) any Evaluation you feel you are prepared for. 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. If you would like to retake an assessment on a day other than an Evaluation Day, you must send me an email and set up an appointment to do so at least a day ahead of time. Most reassessments should try to be

scheduled during my office hours, but I can try to accommodate other's schedules as best as possible.

2. Each Evaluation will be offered for the first time in-class. If you do not take the Evaluation when it is first offered, you must wait at least three class days before scheduling an appointment to take it for the first time.
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 class.
4. No Evaluations will be given after the last day of class until our Final Exam period. During the Final Exam period, you may take any Evaluation at most once. No Evaluations can be taken after the Final Exam period. Our Final Exam period is scheduled for **December 11, 8:00 - 10:00 a.m.**
5. There are 16 standards for this course with eight being required and eight 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 "Excellent (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 eight required standards. See the following grading chart for more detailed information.

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

Grade	# of Standards (any) at M
C–	7
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. There will often be time at the beginning of class to go over several of these problems from the textbook. **If you do all the homework problems and keep them in a neatly organized notebook, you are elligible for one of the optional standards.**

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.