

Nebraska Wesleyan University
Math 060: Calculus for Management, Biological, and Social Sciences
Section 1
Spring 2014

Instructor: Austin Mohr
Text: Calculus and its Applications
Ninth Edition
Bittenger and Ellenbogen
Time: MTWF 10:00 am – 10:50 am
Room: Olin 112
Office: Olin 109D
Office Hours: MTWF 11:00 am – 12:00 pm (or by appointment)
Email: amohr@nebrwesleyan.edu
Cell: (803)-543-8735
Course Website: AustinMohr.com/math060
Final Exam: Monday, May 12 at 8:00 am

Course Description

A calculus course for non-mathematics majors. Topics include limits, continuity, differentiation, and integration with emphasis on relevant applications.

Grading Scale

Grade cutoffs for A, B, C, and D are 90%, 80%, 70%, and 60%, respectively. The additional “+” and “-” grades will be awarded according to the following example: B+ (87-89%), B (83-86%), B- (80-82%).

Assignments

Participation	1 point total
Homework	2 points total
Projects	2 points total
Exams	12 points total (see description)

Things to Buy

- Textbook (required)
- Calculator (optional): A standard graphing calculator (such as TI-83) may be useful, but is not required (see Daily Routine).

Daily Routine

Bring every day:

- Textbook

and

- Graphing calculator or Internet-enabled device (A laptop or tablet will allow you to access WolframAlpha, which is a free service that can do everything a graphing calculator can.)

Before class:

- Read the textbook pages or watch the video specified in the homework assignment on the course webpage.
- Complete the homework assignment. Each assignment will be due *at the beginning of class* the day it is to be discussed.

During class:

- I will have a few things to say to the whole class.
- Afterwards, I will give some questions to try in groups for the remainder of the time. Your solutions are *not* graded, but your willingness to work with classmates during this time constitutes your participation grade.

Exams

We will be making use of “Mastery-Based Examinations”. I learned of the concept from Professor George McNulty, for whom I have the utmost respect. It is quite an unusual system, so I will describe it briefly here. Please do not hesitate to ask me for clarification.

Short Description

You only receive credit for completely correct responses, but you will get many chances throughout the semester to display mastery.

Long Description

I have boiled the course down to the sixteen most essential types of questions. Your first in-class exam will be the first four of these questions. Your second in-class exam will consist of eight questions total: the first four questions are slight variations of those from the first exam, while the other four questions will be new. In a similar fashion, the third in-class exam will consist of twelve questions (only four of which are new) and the fourth in-class exam will consist of sixteen questions (only four of which are new). The final exam will not have any truly new questions, but will consist of variations of the sixteen questions you have already seen.

You will be given one of three grades for each problem you try: Master, Journeyman, or Apprentice. “Master” means you have fully understood the concept. “Journeyman” means you are well on your way to mastery but still need to clarify some details. “Apprentice” means you have not understood the concept and need to carefully study it again. Mastery of a question earns you full credit, while any other score earns you no credit. If you fail to master a question on the first try, you may attempt the similar version that appears on the next test. Once you have mastered one type of question, you need not attempt it ever again.

Your exam grade will be determined by the number of different types of questions you have mastered by the end of the course. For example, a student who masters a total of fourteen different questions by the end of the course will receive an overall exam grade of $14/16 \approx 88\%$. Notice that mastery will earn you full credit for a question regardless of the number of times you attempted it.

Participation

We will be experimenting this semester with “group roles”. Each individual in a group will have a clearly defined job to carry out as you work to understand the material and solve problems. S/he will keep that role for the entire day and receive a new role the next day so that everyone becomes proficient in all roles. Since this is a new element in my classroom, I greatly desire your feedback.

Role	Actions	Examples
Manager	<ul style="list-style-type: none"> • Be the first to engage with a problem • Keep your group on-track • Make sure everyone in your group participates • Watch the time spent on each step 	<ul style="list-style-type: none"> • “Here’s one way to approach this problem.” • “Let’s come back to this later if we have time.” • “Chris, what do you think about this idea?” • “We need to move on to the next step.”
Recorder	<ul style="list-style-type: none"> • Act as a scribe for your group (including insightful remarks from the Skeptic) • Check for understanding of all members • Make sure all members of your group agree on plans and actions • Summarize (restate) your group’s discussion and conclusions 	<ul style="list-style-type: none"> • “That’s an important objection. Let me copy it down.” • “Do we all understand this diagram?” • “Are we in agreement on this?” • “So here’s what we’ve decided.”
Skeptic	<ul style="list-style-type: none"> • Help your group avoid coming to agreement too quickly • Question the applicability of techniques • Make sure all possibilities are explored • Suggest alternative ideas 	<ul style="list-style-type: none"> • “What other possibilities are there?” • “How do you know this approach is valid?” • “Let’s try to look at this another way.” • “I’m not sure we’re on the right track.”

Extra Help

- Me: Come to my office hours or email/call me to schedule another time.
- Math Tutoring Center: Walk-in tutoring is provided by Nebraska Wesleyan mathematics majors in the Cooper Center.
 - Sunday, Tuesday, and Thursday from 7 pm until 9 pm
 - Monday and Wednesday from 6 pm until 9 pm

Accommodations

Nebraska Wesleyan University seeks to maintain a supportive academic environment for students with disabilities. To ensure their equal access to all educational programs, activities, and services, federal law requires that students with disabilities notify the university, provide documentation, and request reasonable accommodations. If you need accommodation in this course, please notify me so that I can verify that the required documentation is filed with the Academic Affairs Office and that your accommodation plan is in place. You should also meet with Prof. Sandy McBride, the Services for Students with Disabilities Coordinator (Old Main 126, 465-2346, smcbride@nebrwesleyan.edu).

Academic Integrity

Academic integrity is one of the basic principles of a university community. Nebraska Wesleyan University encourages and expects the highest standards of academic honesty from all students. The Student Code of Conduct states that “cheating, plagiarism, or other forms of academic dishonesty” are subject to disciplinary action. Refer to the Student Code of Conduct for additional information. Academically dishonest students may receive penalties up to and including receiving an F in the course.