

# Math 112 – Precalculus and Differential Calculus

Fall Semester 2018

August 22 – December 12

**Instructor.** Dr. Leigh C. Becker

**E-mail.** [beckerl@rhodes.edu](mailto:beckerl@rhodes.edu)

**Course web address.** <http://facstaff.cbu.edu/~lbecker>

**Phone.** 901-337-0753

**Office.** 422 Ohlendorf Hall

**Office Hours.** M W F 9:30 – 10:50 & 1:00 – 1:50. (If you cannot see me during these times, text me to make an appointment (901-337-0753).

## Course Description.

Math 112 is an introduction to the concepts, formalism, and applications of functions, limits, and the derivative. Elementary transcendental functions are introduced and used throughout. Specific topics include functions, limits, the derivative, and applications of differentiation. (Credits: 4)

## Prerequisites.

There are no prerequisites for this class. Students are expected to have a background in high school algebra and geometry.

Students should NOT take this course if they plan to take only one semester of calculus or if they have already seen derivatives in a previous class. Students who have taken calculus in high school may not earn credit for Math 112 without permission from the instructor. Students who earned Rhodes credit for AP Calculus AB or IB Mathematics scores may not enroll in this class.

## Class Schedule.

Math 112-01 (CRN 19496) meets M W F from 2:00–2:50 in 225 N. Ohlendorf Hall. Students are also required to sign up for Math 113, a no-credit tutorial, which meets once a week.

## Textbook and Syllabus.

Stewart: *Single Variable Calculus, Early Transcendentals*, 8<sup>th</sup> edition or Stewart: *Calculus, Early Transcendentals*, 8<sup>th</sup> edition.

Chapters	Sections
Chapter 1. Functions and Models	▪ Sections 1.1 – 1.5
Chapter 2. Limits and Derivatives	▪ Sections 2.1 – 2.3 & 2.5 – 2.8
Chapter 3. Differentiation Rules	▪ Sections 3.1 – 3.4 & 3.6
Chapter 4. Applications of Differentiation	▪ Sections 4.1, 4.3, 4.4, & 4.7
Optional Sections (as time permits)	▪ Sections 3.10, 3.11, 4.5, 4.6, 4.8

## **Classroom Policies and Attendance.**

Please bring your notebook and textbook (or digital version), straightedge, and pencils to each and every class. Be seated before class begins. Do not sharpen pencils during class. Please take care of any personal business before the start of class so that you do not have to leave the room during class (thereby interrupting the attention of everyone else), unless there is an emergency.

If you bring a phone to class, please turn it off or put it on a silent setting before the start of class. You may not listen to an iPod, smartphone, or other such devices during classes or exams. The use of these electronic devices during class is inconsiderate and a detriment to learning.

I encourage you to take class notes, to be an active listener, and to ask questions. However, if your questions take up too much class time, it would be best to come to my office or to go to the MSC (Math Support Center) for help in view of time constraints and out of consideration for other students. Talking is not allowed unless you raise your hand and are given permission. It should be clear that talking to someone else during class is impolite and disruptive to the learning process. Finally, class is not over until I dismiss you.

Woody Allen once said that 90% of life is just showing up. Take this to heart. If you are going to succeed in a mathematics course, or for that matter, in any science or engineering course, you must come to class—prepared and ready to listen, think, and participate. In my classes, attendance is mandatory! At the beginning of every class, I will hand out an “Attendance M112” sheet. Do not forget to sign it; otherwise, you will be marked absent. If you are tardy, remind me after class to change “absent” to “0.5 absent.” If you absolutely have to miss a class, obtain the notes from a classmate and study them. If these notes are unclear, see me for further assistance or clarification. It is your responsibility to keep up with the assignments, which can be found on my web site: <http://facstaff.cbu.edu/~lbecker>. If you have questions or need additional information, email me at [beckerl@rhodes.edu](mailto:beckerl@rhodes.edu).

In the Rhodes College Catalog, you will find the following statement: “Specific attendance policies are set by individual instructors, who state them in the course syllabus and during the first class session.” My attendance policy for Math 112 and the accompanying tutorial (Math 113) will be as follows: A student will be allowed a combined total of 4 unexcused absences for the entire semester. (For example, 2 unexcused absences in Math 112 and 1 unexcused absence in Math 113 will be recorded as 3 unexcused absences.) For an absence to be deemed *excused*, it must be approved by me (in advance if possible); I may request documentation. If a student accumulates three or more unexcused absences by midterm, then the student’s midterm grade will be “F” (failure). If a student accumulates five or more unexcused absences at some point before the end of the semester, then I may take action as outlined under “Academic Regulations: Class Attendance” in the catalogue, which is to make a written request to the Dean of the Faculty that the student be removed from the course with a grade of F.

**Homework.** You are expected to do all of the assigned homework, even if an assignment is not graded. This is a crucial part of the course and the best way to learn mathematics and to prepare for tests and quizzes. Any graded homework will be recorded as a quiz grade.

**Quizzes.** Generally speaking, quiz problems will be taken directly (or with slight alteration) from the assigned practice problems. There will be no make-ups for quizzes unless you have a valid, verifiable excuse. If you are absent or tardy for a particular quiz, your score for that quiz will be “0”. However, if you accumulate no more than three unexcused absences during the semester, then your lowest two quiz grades will be dropped.

**Tests.** There will be three (each 50 minutes long) tests. If you miss a test, you will not be allowed to make it up unless you have a valid, verifiable excuse and notify me as soon as possible. If you know in advance that you will be absent on a certain day (e.g., for college-sanctioned events, such as varsity athletics, off-campus competition related to courses, etc.), please inform me ahead of time. If an emergency arises, please text me the day of the absence; if that is not possible, text me as soon as possible. Or inform me by e-mail ([beckerl@rhodes.edu](mailto:beckerl@rhodes.edu)).

**N.B.** If you take (i) all three tests when they are scheduled, (ii) have no more than three unexcused absences throughout the semester, and (iii) your Final Exam score exceeds your lowest test score, then it will replace the lowest test score.

### **Expectations.**

- Take notes in class. Annotate and study them before the next lecture.
- Read the textbook.
- Study the material associated with each lecture.

### **Final Exam.**

The final exam in this course is comprehensive and closed-book (no notes, no calculators, etc.). Under no circumstances will a student be allowed to take it before the following scheduled date (please keep this in mind when making travel arrangements): Monday, December 10, 5:30 p.m.

**Final Grade.** Your semester average (*Sem Avg*) will be computed using the following formula:

$$\text{Sem Avg} = .20 \times [\text{Avg of quizzes}] + .60 \times [\text{Avg of tests}] + .20 [\text{Final Exam}].$$

The final letter grade will be assigned to  $x = \text{Sem Avg}$  as follows:

<b>A</b>	[93, 100]	<b>B-</b>	[80, 83]	<b>D+</b>	[67, 70]
<b>A-</b>	[90, 93]	<b>C+</b>	[77, 80]	<b>D</b>	[63, 67]
<b>B+</b>	[87, 90]	<b>C</b>	[73, 77]	<b>D-</b>	[60, 63]
<b>B</b>	[83, 87]	<b>C-</b>	[70, 73]	<b>F</b>	[0, 60]

### **Honor Code.**

All of your work in Math 112 must be in accordance with the Rhodes College Honor Code. Academic dishonesty includes—but is not limited to—copying a portion of another person’s homework, cheating on quizzes and exams, using websites that have solutions of the problems in our textbook, and so on. For such an offense, a failing grade will be given to the dishonest work or in egregious situations for the entire course.

**Access and Accommodations.** ([www.rhodes.edu/accessibility](http://www.rhodes.edu/accessibility)).

If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so we can discuss options. If you have already established accommodations with Student Accessibility Services (SAS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through SAS, but have a condition that requires accommodations, please contact SAS at 901-843-3885, Burrow Hall 4<sup>th</sup> floor. SAS offers resources and coordinates reasonable accommodations for students with disabilities and temporary conditions. Reasonable accommodations are established through an interactive process between you, SAS, and your faculty. It is the policy and practice of Rhodes College to create inclusive, equitable, and accessible learning environments for all students.