

**Instructor:** Mr. Thomas Luckner

**CRN:** 41256 (47612 for Q)

**Section:** 02, Q02

**Class Meeting Room & Time:** MW 2:20-3:35pm in Close-Hipp 450,  
TR 2:50-3:40pm in Sloan 104

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**Office:** COL 4001A

**Office Hours:** MWTR 3-4, by appt.

## COURSE DESCRIPTION AND OBJECTIVES

**Prerequisites:** C or better in MATH 111 or 111I, or placement through Precalculus version of the Mathematics Placement Test

**Learning Outcomes:** Upon successful completion of the course, students should be able to:

1. Increase their skills with algebra and trigonometry.
2. Work with mathematical terms such as linear, quadratic, exponential, logarithmic, inverse polynomial, rational, circular, and trigonometric functions and express these terms in correct context.
3. Apply the methods of algebra to solve applications involving intercepts, rates of change, inequalities, system of equations, rational functions, and interest growth.
4. Develop various properties graphically and formulaically (domain, range, inverse functions, unit circle, Pythagorean identities, reciprocals, half-angle, and double-angle, and transformations).
5. Students will tackle problems that require more than one step to solve.

## REQUIRED MATERIALS

- **Textbook:** The textbook for this course is Precalculus 2<sup>nd</sup> Custom Edition for USC, Mark Dugopoloski ISBN: 1-269-74815-7. **HOWEVER, THE TEXT IS NOT REQUIRED.**
- **Online Materials:** **WE WILL NOT BE USING ONLINE MATERIAL!** Other sections of the course may be using an online system called MyMathLab or WileyPlus, but I have found that this system is frustrating for you students and thus all homework will be assigned in class (also shown on Blackboard) and will be turned in at the beginning of class or on Blackboard as informed by the instructor.
- **Calculator:** A calculator will NOT be allowed for use in class assignments such as worksheets, assessments, quizzes, exams, homework, or any other assignment unless the instructor deems it acceptable.

## COURSE POLICIES AND EXPECTATIONS

**Attendance:** Attendance is expected and will be recorded via attendance sheet passed out at the beginning of class. Note this means if you are late (NO MORE THAN 15 MINUTES) and miss the attendance sheet, it is YOUR responsibility to come to the instructor after class to sign in without penalty. Absences are broken down into 2 categories:

Excused-Athletic, military, illness, family illness or death, legal, professional obligation (WITH VALID DOCUMENTATION)

Unexcused-no documentation, does not include issues above

Absence from more than 10 percent of the scheduled class sessions, whether excused or unexcused, is excessive and the instructor will drop the final grade of a student one letter grade (10 percentage points) if this is the case (ex: A to B, B to C, etc.). For this class 10 percent means you can miss class 5 times before a penalty is added.

**Participation:** All members are expected to participate during class and may be called upon to respond to classroom discussions.

All participants are expected to show respect to other students, the instructors, and any guests who may be visiting the class during the year (Golden Rule).

If a grade is borderline, participation will be a key factor in determining the final grade (ex: good attendance and borderline C+/B will lend to a B).

**Cell Phones:** Cell phones are to be **off and away** during class. If one is caught with their phone out or in use, a warning will be given first. If the student is caught with their phone out a second time, the phone will be confiscated by the instructor after the student powers down the phone and left in the front of the classroom. The student can then have the phone after class is over

**Laptops:** Since math is a difficult subject to type notes for, I will expect all laptops to be **put away and not in use** during class. If a student has a laptop out, they will be asked to put it away. **However**, if a student demonstrates a need and/or an ability to use a laptop for notes to the instructor, an exception will be made.

**Other Technology/Objects:** Technology such as smart watches are to be taken off during assessment and are not to be used during class for anything other than necessities (such as time). If a student prefers to take notes via tablet, inform the instructor that this is your preferred way to take notes. During assessments, the instructor will ask for hats with bills to be removed and an I.D. be presented to deter cheating. This will be discussed in more detail in assessment part of syllabus. If you have any questions about what can or cannot be used during class, do not be afraid to ask the instructor.

**Math Apps:** Apps exist that allow you to take a picture of a problem and the app will do the math for you. These apps were created with the vision of helping students to check their work; not to do the work for them. With this in mind, if you are caught using one of these apps in class (you should not have your phone out in class anyways) without talking to the instructor first, you will **lose 1 point off your final grade**. This will continue each time this is done.

**Academic Integrity:** I expect you to familiarize yourself with the Honor Code found in the current student handbook. Keep in mind that “Any student who violates this Honor Code or who knowingly assists another to violate this Honor Code shall be subject to discipline.” Honor Code & Carolina Creed: <https://www.sa.sc.edu/creed/>

**Students with Disabilities:** Students who would like to request accommodations for disabilities must talk to me as soon as possible (after class or during office hours). Students must register with the Office of Student Disability Services (LC 112A) before I can make any accommodations.

**Studying:** This class meets four times a week for lecture for 50 minutes twice a week and 75 minutes twice a week. It is **very** important that you study at least 2-3 hours out of class for every hour within class. Study techniques, but not all, include: reading the book or doing homework problems over again or other online sources. (Most topics we cover can be googled for example problems. Just google the topic and then the word exercises after.)

**Late/Make-Up Policy:** Exams can be made up **ONLY** in the case of an emergency, and **ONLY** if you request a make-up exam before the scheduled time. It is your responsibility to contact me within a reasonable time to request a make-up exam. If a student misses an in-class assignment with an excused-absence (quiz, in-class assessment, etc.), then the above also applies.

## CLASS STRUCTURE

The structure of my classes tends to follow similar for all classes I teach. Feel free to look at my webpage for other syllabi in other courses. The class will go as follows.

1. All assignments will be done in person during class unless discussed with instructor prior. That includes quizzes, exams, and any other forms of assessment.
2. You will be expected to work in groups and collaborate with others throughout this class.
3. The class will be taught with the following design:
  - a. 50% lecture
  - b. 15% discussion
  - c. 25% worksheets/problem-solving

Discussion refers to moments in my lecture where I will stop and ask questions or have example problems for the class to try to gauge understanding. Worksheets are expected to be done in groups. I will be assigning groups randomly to work on the worksheets before I give them out.

4. All homework will be assigned once a week and the due date will be about 6-7 days from the assigned date. Each homework is made by instructor without the use of any textbooks or online resources. This is in an effort to prevent cheating and encourage you to work through the problems without online sources. Typically, material on the homework will be covered during the assigned week. It is HIGHLY encouraged you look at the assignments ahead of time to see what you can do after each lesson. To submit the assignment, you will need to bring it either to class to submit or into my mailbox in the coliseum just outside my office.
5. Assignments will be structured in difficulty. I am a firm believer that the difficulty of an assignment should match the amount of material on the assignment. Thus, here is what I call my pyramid of difficulty:
  - a. Most difficult: Homework- this is the most focused assignment, so it will be the most challenging.
  - b. Quizzes- this will contain easier problems than homework since it will cover more material.
  - c. Exams- The most material and thus the easiest problems.

Easy and hard are loose words here. These are easy and hard in the students' eyes and may be different for each student. If there is a problem, the instructor will know in grading. Thus, do not feel the need to explain to the instructor what is hard and what is easy. Your homework should directly help you on quizzes and both of those will help you on exams. The fact that all assignments are written without other resources by the instructor should help with studying since quizzes will be similar to homework and exams similar to quizzes. Therefore, these are the best study materials along with the worksheets.

Obviously, this semester is a weird time with the coronavirus pandemic in limbo. Thus, here are some recommendations:

1. The university REQUIRES you wear a mask.
2. The instructor WILL also be wearing a mask.
3. The most important thing at this time is RESPECT. Some will be uncomfortable with groups in general and others won't. None of these are problems. If you do have any issues with anything regarding COVID precautions, please let me know. All issues regarding precautions will be taken seriously by the instructor and should be by fellow classmates as well. Everyone is entitled to their own choices.
4. It is not required, but if you are missing class for quarantining or for other COVID reasons the instructor would like to know. The reason is a significant length of absence will occur and the instructor would like to give you materials but cannot do so if you are just missing class for nothing.
5. COVID is an illness and will be treated as such. Thus, any absence, including COVID related absence, requires some documentation or discussion BEFORE the missed class or classes. This is discussed in detail in the absence section.
6. COVID sucks, but we have to deal with it. Let's try our best to not let it get in the way of our learning.

## ASSIGNMENTS

**Homework: HOMEWORK IS THE MOST IMPORTANT PART OF THIS CLASS!!!!** Homework will be assigned on a regular basis, and due regularly. All assignments will be completed offline. The homework sets will be announced at the beginning or end of class. If you have questions, please email me. Homework is supposed to help you learn the material and, thus, asking questions is highly encouraged. This will help you not fall behind as the course will move quickly. It is your responsibility to work through the homework problems in their entirety in order to gain mastery of the material. Students are encouraged to work together on homework, but each student must personally submit his or her own solutions IN HIS OR HER OWN WORDS. Otherwise, this is a form of cheating. Late homework will **NOT** be accepted.

**Quizzes:** Quizzes will be given every Thursday in the last 20-25 minutes of class unless there is an exam the day of or day before the quiz, extra work is needed on the section being assessed (decided by instructor), or the instructor deems it necessary. If there are more than 10 quizzes, your 2 lowest will be dropped. If there are between 8-10 quizzes, your lowest is dropped. No in-class assessment will be given the last week of classes.

**Exams:** There will be three exams, whose dates will be announced in class at least one week in advance (May change from calendar due to class cancelations). Calculators will NOT be allowed on exams unless otherwise stated by instructor.

**Final Exam:** The final exam is cumulative and will be taken in-class. ***Final Exam, Tuesday, December 10, 2019, in LeConte 115 from 4 pm to 6:30 pm.*** Will give the official date when known. Do not plan on leaving town before this day.

## EVALUATION

Homework and Participation... ..	20%
Quizzes .....	15%
Exam 1.....	15%
Exam 2.....	15%
Exam 3.....	15%
Cumulative Final .....	20%

Final Grades will use the following scale

A	B+	B	C+	C	D+	D	F
100-90%	89-86%	85-80%	79-76%	75-70%	69-66%	65-60%	<60%

## USEFUL WEBSITES:

- Blackboard Website: <https://blackboard.sc.edu>
- Software Support for Calculations: <http://www.wolframalpha.com/> or <http://www.khanacademy.org/>
- Good app to use for notes and handouts, "Notability"

## SUPPORT:

- My Office Hours (top of page 1)
- FREE TUTORING online on math webpage - *Check room, but usually Monday-Thursday 10am-3pm.*
- Student Success Center – Offers FREE tutoring and FREE 1 on 1 ONLINE tutoring. (<http://www.sa.sc.edu/ssc/>)

**Hint for making learning easier:** Get to class 15 minutes early, read the book's description of today's lesson (Can determine this by looking at homework or can ask instructor). By seeing the material ahead of time, you can help make the learning curve with the new material manageable.

**Hint for making studying for exams easier:** When you complete a homework problem or a problem in class, don't simply move on to the next problem, but ask yourself two questions: (1) How could this show up on an exam? (2) What common mistake might I make with this problem on an exam? Do this with EVERY homework problem.

### Important Dates:

- 01/18/2022 Last day for students to DROP without a grade of "W".
- 03/28/2022 Last day for students to DROP or withdraw without a grade of "WF".

***Schedule is tentative and subject to change***

Date	Sections Covered	Topics
1/10 – 1/13	Syllabus, P.1, P.2, P.3	Syllabus, Real Numbers and Their Properties, Distance, Integral Exponents and Scientific Notation, Rational Exponents and Radicals
1/18 – 1/20 (1/17 MLK day)	P.4, P.5, P.6	Polynomials, Factoring Polynomials, Rational and Complex Expressions,
1/24 – 1/27	1.1, 1.2, 8.1, 8.2	Equations-Linear, Rational, Absolute Value, Constructing Models for Problem Solving, Systems of Linear Equations in Two Variables, Systems of Linear Equations in Three Variables
1/31 – 2/3	1.3, 1.4, 2.1, 2.2	Equation for a Circle and Distance Formula, Linear Equations in Two Variables, Functions, Graphs of Relations and Functions
2/7 - 2/10	Review, Exam 1, 2.3, 2.4, 2.5	Review, <b>Test 1: February 8, 2022 (P.1-P.6, 1.1-1.4, 8.1, 8.2)</b> , Families of Functions, Transformations, Symmetry, Operations with Functions, Operations with Functions, Inverse Functions
2/14 - 2/17	2.4, 2.5 cont., 3.1	Quadratic Equations
2/21 - 2/24	3.2, 3.3, 3.4, 3.5	Zeros of Polynomial Functions, Multiplicity and Conjugates, Graphs of Polynomial Functions, Rational Functions and Inequalities
2/28 - 3/3	4.1, 4.2, 4.3, 4.4	Exponential Functions and Their Applications, Logarithmic Functions and Their Applications
3/7 – 3/10		SPRING BREAK - NO CLASS
3/14 – 3/17	Review, Test 2, 5.1, 5.2	Review, <b>Test 2: March 15, 2022 (2.1-2.5, 3.1-3.5, 4.1-4.4)</b> , Angles and Their Measurements, The Sine and Cosine Functions
3/21 – 3/24	5.3, 5.4, 5.5	The Graphs of the Sine and Cosine Functions, The Trigonometric Functions and Their Graphs, The Inverse Trigonometric Functions
3/28 – 3/31	5.6, 6.1, 6.2, 6.3	Right Triangle Trigonometry, Basic Identities, Verifying Identities, Sum and Difference Identities
4/4 – 4/7	6.4, 6.5, 7.1, 7.2	Double Angle and Half Angle Identities, Product and Sum Identities, The Law of Sines, The Law of Cosines
4/11 – 4/14	Review, Test 3, 11.1	Review, <b>Test 3: April 12, 2022 (5.1-5.6, 6.1-6.5, 7.1, 7.2)</b> , Sequences and Arithmetic Sequences
4/18 – 4/21	7.6, 11.2, 11.3	Polar Equations, Series and Arithmetic Series, Geometric Sequences and Series
4/25	Reviews	Definition of Derivative (Not on Final), Final Reviews and built in time