Syllabus

Instructor

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Course

MATH 1030 Elementary Functions Section 004: 90011 (Lecture)/ 90012 (Lab)

Semester

Fall 2023

Department

School of Mathematical and Statistical Sciences

Office location

Martin Hall M-306

Course Website

`https://mthsc.clemson.edu/ug_course_pages/view_course_page/4`

All class resources (notes, calendar, day-to-day schedule, copies of exams, announcements, etc.) will be posted on the MATH 1030 website! Please visit this website often.

Credits

4 credits

Class location

Martin Hall M105

Class meeting times

MWF 2:30 pm-3:20 pm

Office hours

MWF 3:30 pm-4:40 pm & by appointment

Course modality

Traditional (in-person)

Course description from catalog

MATH 1030 is a gateway course for MATH 1060. This course features a comprehensive treatment of topics chosen to prepare students for the study of calculus. A special emphasis is given to polynomial, rational, exponential, logarithmic, and trigonometric functions; we will also discuss limits.

Prerequisites

Any MATH or STAT course, or a score of 540 or higher on the SAT Math section, or a score of 21 or higher on the ACT Math section, or a score of 50 or higher on the Clemson Mathematics Placement Test (CMPT)

Textbook

The textbook is *PreCalculus* by Miller and Gerken. The textbook is a part of *ALEKS 360* package required for the course.

Class access code

CJUER-DAUCX

Calculator policy

Calculators are not allowed on exams, and so you don't need to purchase a calculator.

Learning Outcomes

After completing this course, students will demonstrate mastery of the following items.

- Functions and graphs - sets; relations and functions; graphs and transformations; and composite and inverse functions.
- Polynomial and rational functions - quadratic equations; polynomial division; polynomial roots; graphing; and inequalities involving polynomial and rational functions.
- Exponential and logarithmic functions - properties of logarithms; solving logarithmic and exponential equations, and graphing.
- Trigonometry- angles in degrees and radians; the unit circle and right triangle trigonometry; trigonometric functions; and trigonometric identities and equations.
- Limits - finding limits by estimation, from a graph, and using the limit laws.

These items will be assessed via quizzes, problem sets, three in-class exams, and a final exam.

Course content

We will cover topics from the following chapters of the e-textbook that is located in ALEKS.

- Chapter R: Review of prerequisites
- Chapter 1: Functions and relations
- Chapter 2: Polynomial and rational functions
- Chapter 3: Exponential and logarithmic functions
- Chapter 4: Trigonometric functions
- Chapter 5: Analytic trigonometry
- Chapter 12: Preview of The Calculus

Every effort is made to focus on topics and skills that are critical to success in MATH-1060.

Required materials

You will need a notebook (probably more than 1), writing utensils (like pens and pencils), and a laptop computer. Your laptop will need to connect to the internet.

Grading breakdown

The grading breakdown for the course is presented in the following chart.

Assessment	**Weight**
Exam 1	17%
Exam 2	17%
Exam 3	17%
Final Exam	17%
Quizzes	16%
Problem Sets	16%

Exams

MATH 1030 has four "high-stakes" summative assessments. There are three unit exams and one Final Exam. The dates are listed below.

- **Exam 1**: Wednesday September 20, 2023 from 7:30pm to 9:00pm
- **Exam 2**: Wednesday October 25, 2023 from 7:30pm to 9:00pm
- **Exam 3**: Wednesday November 29, 2023 from 7:30pm to 9:00pm
- **Final Exam**: Monday December 11, 2023 from 11:30am to 2:00pm

The Final Exam is **cumulative**, and there are **no exemptions**.

Problem sets

For nearly every class, a *Problem Set* will be posted in ALEKS. Each *Problem Set* corresponds to a lesson. The problems feature a somewhat wide range of difficulty levels. Some problems will be rather routine and, therefore, of a more "skill-building" nature. Other problems might be a bit non-trivial and require some thinking. You have *unlimited* attempts at each problem. (ALEKS can generate new problems that test the same skill.) Also, all **help features** will be enabled. ***Please use them!***

Most quiz problems and exam problems will be *very* similar to problems that appear on the *Problem Sets*; so it is very important that you master the types of problems tested on these assignments.

Quizzes

I believe in frequent formative assessments, so we will have one quiz each week. Those quizzes are very "low stress, low stakes" assessments. Some quizzes may take the form of an "exit ticket" assignment.

We will also have a more comprehensive "review quiz" before each exam. This will help you be aware of your weak points before the exam.

I will drop your three lowest weekly quizzes and the lowest review quiz. The sum of the remaining quizzes constitutes the instructor's classwork grade.

Grading scale

The following chart presents the grading scale for the course.

Numerical Grade	Letter Grade
90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

$\Rightarrow$ We will use *traditional rounding*; so, for example, 89.5 rounds to a 90. But 89.4 rounds to an 89. Generally speaking, "cusp grades" will be determined at the instructor's discretion using straightforward criteria like *attendance*, *punctuality*, and *turning stuff in on time*.

Class expectations

In order to make this course as meaningful as possible, let us set forth our ***class expectations*** so that everything runs smoothly. Note: I'm using a bullet point instead of a number since all of these items are equally important

- **Arrive to class on time and prepared.** Entering the class late distracts your peers and me. Entering class unprepared (for example, without a notebook, laptop, pens, etc.) wastes your time and makes class time less valuable.
- **Maintain regular attendance.** Students who maintain regular attendance *dramatically* outperform those who don't.
- **Maintain classroom decorum.** Our classroom is a *scholarly environment*. It is a place where students must feel comfortable learning and focusing. It must be a place with no distractions!
- **Use class time effectively.** Staying focused and on-task during class saves you loads of time outside of class. Between the ALEKS pie and the assigned problem sets, it's virtually impossible to be "done" early. I often reserve that second half of class for independent and/or group work.
- **Be respectful of your peers and myself.** This item is pretty self-explanatory. But I'll mention that a *good attitude* and *a little enthusiasm* goes a long way. Really.

- **Develop and stick to a regular study schedule.** The jury isn't out on "cramming" as a study technique—the cramming approach is not effective. I, therefore, expect you to develop a *consistent*, *achievable* study schedule. Find out what works for you and develop a system.

Hours per week of studying

The old "rule of thumb" is that a student should expect to study for 2 to 3 hours outside of class each week for every credit hour. Since MATH-1030 is a 4-credit course, this principle *suggests* studying for about 8 to 12 hours a week outside of class. But this really depends on the student. If your math background is strong, you can succeed in this course with much less studying. On the other hand, if your high school math experience was less than stellar, then 8-12 hours of studying per week seems totally appropriate (and perhaps necessary).

Class format

Our class will be run in a format somewhere in between a *traditional lecture* and a *flipped classroom*. A "traditional lecture" is a teaching style where the teacher literally just lectures the whole class. A "flipped classroom" is a teaching style where the students are pretty much on their own to learn the day's lesson. There's a little more to it than that, but it does represent the polar opposite of a traditional lecture.) I strive to find a happy medium. Generally, I will introduce a topic and run through some examples. Of course, I try to present "interesting" examples, offer problem-solving advice, and basically just try to explain everything as clearly as possible. But there are more topics in this course that I can possibly cover; unless I talked really fast, never answered questions, and consumed a disturbingly large amount of caffeine. So please expect some topics/problems to appear on *Problem Sets* that are **not** identical to something we did in class. In other words, you will have to learn some material on your own. (By the way, this will be typical of all your college classes.) I suggest reading our class text and the ALEKS tutorials, but there are lots of resources out there.

Since I will not be lecturing for the entirety of the class, ***please be ready to work on problems in class***.

Passing requirement

The purpose of MATH-1030 is to prepare you for MATH-1060, which is Clemson's traditional first semester of Calculus. In order to register for MATH-1060, you need to pass MATH-1030 with ***a grade of C or better***. This means that if you receive a grade of D, then, while you have technically "passed" the course, you will *not* be able to register for MATH-1060.

Apps

There are many different apps that solve math problems. For some of these apps, you do not even have to type out the problem: you simply point your phone at the problem and an answer is supplied! This is utterly insane. Obviously, taking out your phone and using an app during a quiz or a major exam is a **serious** cheating violation. Such a violation will result in **an automatic F** for the course.

But what about *Problem Sets* and *Homework*? Well, you are free to use apps as a **supplement** on these assignments (I guess...). But I suggest consulting the e-textbook, your class notes, and the ALEKS tutorials first though! (Remember: you paid for these materials.) If you decide to seek a solution in an app, then please make sure you figure out how to arrive at that solution! Don't deceive yourself.

Pace

The pace of a college class is *much faster* than the pace of a high school class. So, you will have to get used to a faster-paced math course. The purpose of MATH-1030 is, of course, to prepare you for MATH-1060. The pace of MATH-1060 is also very fast. My hope is that the pace will be less jarring/harsh after taking this course.

Email

In order to organize my email inbox, please email me according to the following guidelines.

- **Please email me at arakoto@clemson.edu directly, not through Canvas.** When I send out class emails, I will do so through Canvas; but please email me **directly** instead. I have much easier access to my arakoto@clemson.edu email address. I need to log into Canvas each time to see your Canvas message.

- **Please email me from your official Clemson Gmail account.**
- **Please add MATH 1030-004 to the subject line.**
- **Please email me in a professional format.** It doesn't have to be *too* formal; something like the following template.

> Hi Antsa,
>
> [Your message]
>
> [Your name]
> [Your class]
> [Your section]

Attendance policy

MATH-1030 is being offered in a traditional in-person format. As such, I expect regular in-person attendance. Four or more unexcused absences may result in an **F** for the course.

Notification of Absence

If you are absent from class, you are *required* to submit a Notification of Absence form.

Time to wait if the instructor is late

15 minutes

Academic integrity

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. All infractions of academic dishonesty by undergraduates must be reported to Undergraduate Studies for resolution through

that office. In cases of plagiarism, instructors may use the Plagiarism Resolution Form. See the Undergraduate Academic Integrity Policy website for additional information and the current catalog for the policy.

Accessibility

Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the instructor know and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing `studentaccess@lists.clemson.edu`, or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen if at all possible, but there could be a significant wait due to scheduled appointments. Students who have accommodations are strongly encouraged to request, obtain and send these to their instructors through their AIM portal as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information at the Student Accessibility website. Other information is at the university's Accessibility Portal.

Title IX

The Clemson University Title IX statement: Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This Title IX policy is located on the Campus Life website. Ms. Alesia Smith is the Clemson University Title IX Coordinator and the Executive Director of Equity Compliance. Her office is located at 223 Brackett Hall, 864.656.0620. Remember, email is not a fully secured method of communication and should not be used to discuss Title IX issues.

Emergency preparedness statement

Emergency procedures have been posted in all buildings and on all elevators. Students should be reminded to review these procedures for their own safety. All students and employees should be familiar with guidelines from the Clemson Police Department. Visit here for information about safety. Clemson University is committed to providing a safe campus environment for students, faculty, staff, and visitors. As members of the community, we encourage you to take the following actions to be better prepared in case of an emergency:

1. Ensure you are signed up for emergency alerts
2. Download the Rave Guardian app to your phone. (https://www.clemson.edu/cusafety/cupd/rave-guardian/)
3. Learn what you can do to prepare yourself in the event of an active threat(http://www.clemson.edu/cusafety/EmergencyManagement/)