MATH 2212.001, Precalculus B
Department of Mathematics and Statistics
Fall 2021

Professor: Dr. Lynn Greenleaf       Class Times & Place: 9-9:50 am MWF
Office: 340 Mathematics building    Room: Math building 206
Office Phone: 936.468.1882          Email: greenleal@sfasu.edu
Office Hours: (or by appointment)

<table>
<thead>
<tr>
<th>Monday</th>
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<tr>
<td>10 am - 12 pm</td>
<td>3:30 – 4:30 pm</td>
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Course description: This is a prep course for the calculus sequence. Trigonometric functions of angles, radian measure, fundamental identities; addition, product, and half angle formulas, solution of triangles; polar coordinates; inverse trigonometric functions, complex numbers.


Course Calendar: Please note that the dates for our in-class exams below are subject to change. The final is university scheduled and cannot be taken at a different time without permission of the Dean of the College of Sciences and Mathematics.

<table>
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<th>Exam 1</th>
<th>Exam 2</th>
<th>Exam 3</th>
<th>Final</th>
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<tr>
<td>Wednesday, September 22</td>
<td>Wednesday, October 20</td>
<td>Wednesday, November 17</td>
<td>Wednesday, December 8, 8 – 10am</td>
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Grading Policy: 45% Three Exams       Grading Scale: 90% - 100%: A
20% Homework       80% - 90%: B
15% Quizzes       70% - 80%: C
20% Comprehensive Final Exam       60% - 70%: D

Below 60%: F

Course Requirements:

- **Three monitored exams held during normal class time**—If a student must miss an exam due to an excused absence, a make-up exam will be given on Wednesday, December 1, at our regular class time. Students are responsible for bringing their own calculator to exams.

- **A comprehensive final exam**—The final exam is Wednesday, December 8, 8 – 10am

- **Homework**— Most weeks, take-home homework will be assigned and graded using D2L.

- **Quizzes**— Some weeks, quizzes will be given during class time.

- There is no extra credit or alternative credit. Do well enough on the graded items to earn the grade you seek.

- **Class attendance and participation**— Students are expected to attend all class meetings, arriving on time. If you are absent, you are responsible for determining what you missed and for being prepared for class when you return.

- **Preparing for class**—Students should be prepared to invest several hours per day outside of class reading the text, practicing examples, and working homework exercises. *Material to be discussed in class should be read before coming to class.* Check your @jacks email regularly, as I may send reminders, assignments, or announcements.
Notes to the Student: MATH 2212 is a prep course for the calculus sequence at SFA which prepares you for calculus in the obvious way by reviewing prerequisite concepts and skills that you will need to retain for success in understanding the calculus. The other, less obvious way that MATH 2212 prepares you for the calculus sequence is by getting you accustomed to a fast-paced, content-driven course. To do well in MATH 2212 and later in the calculus sequence, you need to keep up. That does NOT mean that you need to have mastered the material before the class even starts. It DOES mean that you need to try the homework each night to see if you can do it. If you can, great; keep rolling. If you can’t do the homework, seek help immediately the next day in class when I ask if there are homework questions or in my office hours. Please don’t wait until the end of the semester if you need help. By that time, it’s too late.

D2L
Course materials will be located on D2L. It is your responsibility to check D2L daily. You will use your MySFA username and password on the website www.D2L.sfasu.edu.
You are responsible for everything that is posted on D2L for this course.

COVID-19 MASK POLICY
It is strongly recommended that masks (cloth face coverings) be worn over the nose and mouth at all times in this class and appropriate physical distancing observed.

See http://www2.sfasu.edu/math/docs/syllabi/MTH2212Syllabus.pdf for elements common to all sections.

Advice to Students Intending to take Calculus

• Do you believe that mathematics should make sense? A trait that successful students share is that they critically examine their own work, in addition to the work of others. Mathematics should not seem like remembering processes or procedures. If a mathematical step does not make sense to you, reexamine your work.

• Your degree is not earned by "sitting" for classes. Each mathematics course builds on the previous one. You will be held responsible for retention of skills AND for reviewing those skills when you need them. Keep your resources.

• Seek help as soon you need it because ignoring that you have a problem will make it worse. Signs that you need to seek help are quiz grades below 70%, failure to understand how to complete homework exercises, or exam grades below 70%. In each course that is a prerequisite for another, you need to make a C or better to qualify for subsequent courses. It is up to you to make this happen.

• Understanding does not come without practice outside of class. In mathematics, practice is working homework problems. Your quickest means of feedback comes from doing problems and then checking your answer. Working toward an answer is not helpful, because exams don’t come with answers on them. Your focus should be on how to solve problems, not how to get to an answer. Ask questions in class or during office hours when you get stuck on homework.

• When you do ask questions, be prepared to show your attempts at the problem, or be prepared to verbalize what part of the problem is confusing you. If you are asking just so that you can see one more example worked, what do you think will make this example any different from the others we have worked before? Seeing someone else work examples helps start your learning; only you doing problems will finish it. You have to have roughened the surface of your understanding for help to stick. There are no shortcuts to understanding.

• This is mathematics. How you write is important. Making yourself produce logically ordered writing encourages logically ordered thinking and understanding.

• All exams count. Make sure you are ready for each one. There is no extra credit.

• Make sure to bring any allowed tools you need for success. Cell phones as calculators and graphing calculators are NOT allowed on exams and quizzes. Make sure to get a scientific calculator and bring it to exams if you need it. If you come to an exam and say "but I only have a graphing calculator", you will not be allowed to use it.

• I am not likely to make any special arrangement for people seeking to improve their grade because they have not used class time wisely. Examples of not using class time wisely are, texting, talking about topics other than mathematics, sleeping, arriving late consistently, and doing other homework. This wastes your time, wastes your money, and fails to favorably impress people from whom you will ultimately be seeking letters of recommendation.)
Math 2212/2012 – Precalculus B
Course Syllabus

Course description: Preparatory of the calculus sequence: Triangular and circular trigonometric function derivation; special triangles; graphs, domains/ranges, asymptotes, and transformation of circular functions and their inverses; fundamental trigonometric identities; conic sections; polar and rectangular coordinate systems.

Credit hours: 2

The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;

2. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

Course Prerequisites and Corequisites: Credit for Math 141 or permission of the department chair

Course outline:

- Trigonometry
  - Triangular/circular functions
    - Definitions in both contexts
    - Special triangles and values of the trigonometric functions at the standard multiples
    - Graphs, domains/ranges, asymptotes, and transformations of the circular functions
  - Trigonometric Identities
    - Basic: reciprocal, quotient and Pythagorean identities
    - Others: sum/difference identities, double- and half-angle identities
  - Inverse trigonometric functions
    - Domains/ranges, reference angles
  - Graphs
  - Solving trigonometric equations
  - Law of Sines and Cosines

- Vectors & Analytic Geometry
  - Polar Coordinates
  - Vectors

Approximate time spent: 65%

35%
Complex numbers and the complex plane
- Cartesian coordinate system/distance formula
- Conic sections: parabola, ellipse, hyperbola
- Transformations (including rotations)
- Polar coordinates
- Systems of equations

**Student Learning Outcomes (SLO):** At the end of MTH 142, a student who has studied and learned the material should be able to:
1. Define triangular/circular trigonometric functions.
2. Determine the domains/ranges/graphs of circular trigonometric functions and their transformations.
3. Identify special triangles and values of the trigonometric functions at the standard multiples.
4. Extend the definition of the trigonometric functions and the Pythagorean Theorem to obtain the reciprocal, quotient, and Pythagorean identities.
5. Understand the sum and difference formulas and use them to generate the double- and half-angle formulas.
6. Restrict the domain of the trigonometric functions so that the inverse trigonometric functions may be defined.
7. Solve trigonometric equations.
8. Use Law of Sines/Cosines to solve triangles.
9. Recognize that the distance formula is an application of the Pythagorean Theorem.
10. Define and analyze the conics: circles, ellipses, parabolas, and hyperbolas.
11. Convert the polar equation of a conic to a rectangular equation and vise versa.

There are no specific program learning outcomes for this major addressed in this course. It is specifically intended as preparation for the calculus sequence.

**Academic Integrity**
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work.

**Definition of Academic Dishonesty (SFA policy 4.1):**
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment;
- helping or attempting to help other student(s) in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:
- submitting an assignment as one’s own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source;
- incorporating the words or ideas of an author into one’s paper or presentation without giving the author credit.

**Withheld Grades Semester Grades (SFA Policy 5.5)**
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future
terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**Students with Disabilities**
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices](http://www.sfasu.edu/disabilityservices).

**SFASU Mental Health Statement:** SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**
SFASU Counseling Services
[www.sfasu.edu/counselingservices](http://www.sfasu.edu/counselingservices)
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
[www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)
Human Services Room 202
936-468-1041

**Crisis Resources:**
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline 1(800) 273-TALK (8255)
Crisis Text Line: Text HELLO to 741-741

**Acceptable Student Behavior**
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the [Student Conduct Code, policy 10.4](http://www.sfasu.edu/disabilityservices)). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

*Date of document: 08/16/2021*