Instructor: Jacob Pratscher
Email: Jacob.Pratscher@sfasu.edu
Office: Math Building Room 348
Phone: (936)468-1869
Office hours: MWF 10-10:50 AM, MW 12-1PM
Class Meetings: MWF 11:00-11:50 AM Math Building Room 359
Course Link: http://www3.sfasu.edu/math/docs/syllabi/MATH2211Syllabus.pdf

COVID PRECAUTIONS: Currently, we will be meeting face-to-face. If you feel more comfortable in the class, please feel free to wear a mask. You are encouraged but not required to wear a mask. In general, the syllabus may also change according to the needs of the course/class by Dr. Jacob Pratscher. If changes do occur, you will receive an email and/or an announcement in class.

COURSE DESCRIPTION: Preparatory for the calculus sequence: properties and graphs of algebraic, exponential, and logarithmic functions and their inverses; an introduction to trigonometric functions and radian measure.


SUPPLEMENTAL MATERIAL: A resource the instructor will occasionally draw from is M. Boelkins, Active prelude to Calculus, 2019, http://activecalculus.org

CALCULATORS: Each student will need a scientific calculator to use during exams. No graphing calculators or cell phone calculators will be allowed during exams. Having software available like Desmos, will be useful in this course.

WITHDRAWL: The last day to withdraw from a full-session course with a grade of W is November 29, 2021. Note: You can find the withdrawal dates and procedures on: https://www.sfasu.edu/registrar/registration-information/dates-deadlines and https://www.sfasu.edu/registrar/registration-information/how-to-drop-withdraw

GRADING: Grades will be assigned according to the following percentages.
- 3 one hour exams worth 15% each, dates on Tentative Class Schedule
- Homework worth a total of 15%
- Quizzes worth a total of 10%.
- Final exam worth 20%
- Discussions/Activities worth a total of 10%

HOMEWORK: Homework assignments, will be assigned weekly and due by class time of the announced day.

DISCUSSIONS/ACTIVITIES: There will be various discussions and activities held throughout the course. These will be graded according to participation. Participation means well thought out and respectful responses and answers to the proposed questions. Students are also expected to respond to work proposed from fellow classmates in a respectful manner. Discussions will be on D2L where activities will occur during course time.

QUIZZES: Will be done outside of class on D2L. I highly suggest that you use no course materials besides a scientific calculator to take a quiz. Note that each quiz has a time limit. You may take the quiz at most three times before the due date.
UNIT EXAMS: There will be three one hour exams, each exam is worth 15 percent of the grade. The exams will be given in class. You may find dates on the tentative schedule, note that dates may change due to pace of course, any changes will be announced in class.

MAKE-UP AND LATEWORK POLICIES: No make-ups are allowed without prior discussion beforehand with the instructor, or in case of emergency. If there are concerns with completing any work on-time or being prepared for an exam please contact the instructor immediately. The decision of a make-up or accepting late work is left to the discretion of the instructor and is final.

FINAL EXAM: The Final is scheduled for Wednesday December 8th of 2021 from 10:30 AM to 12:30PM. The final exam will be a comprehensive examination, worth 20% of the final grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90%-100%</td>
</tr>
<tr>
<td>B</td>
<td>80%-89.99%</td>
</tr>
<tr>
<td>C</td>
<td>70%-79.99%</td>
</tr>
<tr>
<td>D</td>
<td>60%-69.99%</td>
</tr>
<tr>
<td>F</td>
<td>59.99% and Lower</td>
</tr>
</tbody>
</table>

GRADING SCALE

TENTATIVE SCHEDULE: Note that material dates may change according to pace of the course.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/23-8/27</td>
<td>Introduction/Syllabus/ Sec 1.1</td>
<td>Sec 1.1/1.2</td>
<td>Sec 1.2</td>
</tr>
<tr>
<td>8/30-9/3</td>
<td>Sec 1.3</td>
<td>Sec 1.3/1,4</td>
<td>Sec 1.4</td>
</tr>
<tr>
<td>9/6-9/10</td>
<td>Sec 1.5</td>
<td>Sec 1.5</td>
<td>Sec 1.6</td>
</tr>
<tr>
<td>9/13-9/17</td>
<td>Sec 1.6</td>
<td>Sec 1.6</td>
<td>Sec 2.1</td>
</tr>
<tr>
<td>9/20-9/24</td>
<td>Sec 2.1</td>
<td>Review</td>
<td>Exam 1</td>
</tr>
<tr>
<td>9/27-10/1</td>
<td>Sec 2.2</td>
<td>Sec 2.2</td>
<td>Sec 2.3</td>
</tr>
<tr>
<td>10/4-10/8</td>
<td>Sec 2.3</td>
<td>Sec 2.4</td>
<td>Sec 2.4</td>
</tr>
<tr>
<td>10/11-10/15</td>
<td>Sec 2.5</td>
<td>Sec 2.5</td>
<td>Sec 3.1</td>
</tr>
<tr>
<td>10/18-10/22</td>
<td>Sec 3.1</td>
<td>Review</td>
<td>Exam 2</td>
</tr>
<tr>
<td>10/25-10/29</td>
<td>Sec 3.2</td>
<td>Sec 3.2</td>
<td>Sec 3.3</td>
</tr>
<tr>
<td>11/1-11/5</td>
<td>Sec 3.3</td>
<td>Sec 3.4</td>
<td>Sec 3.4</td>
</tr>
<tr>
<td>11/8-11/12</td>
<td>Sec 3.5</td>
<td>Sec 3.5</td>
<td>Sec 3.5</td>
</tr>
<tr>
<td>11/15-11/19</td>
<td>Systems of Linear Equations</td>
<td>Review</td>
<td>Exam 3</td>
</tr>
<tr>
<td>11/22/11/26</td>
<td>No Class</td>
<td>Thanksgiving</td>
<td>Break</td>
</tr>
<tr>
<td>11/29-12/3</td>
<td>Systems of linear Equation/Matrices</td>
<td>Matrices</td>
<td>Review</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quiz 10</td>
</tr>
</tbody>
</table>
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. Poor planning on your part does not make an emergency on my part. With that said...

- From my position at the front of the room, it is easy to see what you are doing and how you spend your class time. 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. (I have noticed a pattern that people who engage in these behaviors skate by with a C or do even worse. This wastes your time, wastes your money, and fails to favorably impress people from whom you will ultimately be seeking letters of recommendation.)
Math 2211/2011 – Precalculus A
Course Syllabus

Course description: Preparatory for the calculus sequence: properties and graphs of algebraic, exponential, and logarithmic functions and their inverses; an introduction to trigonometric functions and radian measure.

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: TSI mathematics complete/exempt or successful completions of mathematics developmental education plan.

Course outline: Approximate time spent
- Functions 75%
  - Definition/notation
  - Domains/ranges of basic functions, their graphs, and topics appropriate to each type of function:
    - Linear functions: constant functions; slope; point-slope/slope-intercept form; solving linear equations/inequalities
    - Power functions: end behavior
    - Polynomials: intercepts, maximum/minimum number of turning points, and end behavior; solving polynomial equations/inequalities (factoring, Zero Product Principle, quadratic formula)
    - Systems of equations
    - Rational functions: horizontal, vertical, and oblique asymptotes; polynomial long division and proper rational functions, end behavior
    - Exponential functions: properties of exponents (including, especially, rational exponents); asymptotes and end behavior; exponential growth/decay; natural exponential
    - Logarithmic functions: properties of logarithms; asymptotes and end behavior; natural logarithms; solving exponential/logarithmic equations

www.sfasu.edu
- Piecewise-defined: common piece-wise defined functions (absolute value, stamp-price, etc.); graphing/interpreting piecewise-defined functions; 'skip' and 'jump' discontinuities
  - Transformations of the basic graphs: translations, reflections, and compressions/expansions
  - Combining functions: algebraically and by composition
  - Inverses of functions (including those that require branches, like the principal square root)

- **Introduction to Trigonometry and Radian Measure** 25%
  - Introduction to trigonometric functions via the unit circle
    - Definitions
    - Graphs, domains/ranges, asymptotes, and transformations of the circular functions
  - Radian measure
    - Definition
    - Conversions from degrees to radians and radians to degrees
    - Angles greater than 2π

**Student Learning Outcomes (SLO):** At the end of MTH 141, a student who has studied and learned the material should be able to:
1. Define “function”.
2. Recognize basic functions (including transcendental functions) algebraically and graphically.
3. Identify determining factors of the graph of a function either algebraically or from the graph, including the domain and range, intercepts, asymptotes, and end behavior.
4. Generate composite functions and identify domains/ranges.
5. Define and recognize when a function is one-to-one and explain why this is necessary for a function to have an inverse.
6. Compute the inverse of a function and understand that the domain may need to be restricted in order to do so.
7. Solve basic systems of equations.
8. Define circular trigonometric functions.
9. Determine the domains/ranges/graphs of circular trigonometric functions.

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

This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: [https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx](https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx).

**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.

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
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
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).
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.