MATH 2211.002—Precalculus A (Full-term)
Department of Mathematics and Statistics
Class Policy Sheet and Syllabus—Fall 2021

Professor: Dr. Vinh Dang
Office: 320 Mathematics building
Email: vinh.dang@sfasu.edu
Office Phone: 936-648-1636
Office Hours: Monday 11am-noon, 1-2pm

Class Times & Place: 9:00-9:50am MWF, Room 210, Math Building

Course description: This is a prep course for the calculus sequence. In Precalculus A (MATH 2211/2011), we study properties and graphs of algebraic, exponential, and logarithmic functions as well as linear systems; we continue the study in Precalculus B (MATH 2212/2012) with trigonometric functions, right triangle definitions of the trig functions and their inverses; fundamental trigonometric identities; conic sections; polar and rectangular coordinate systems.


Exam Calendar: Please note that the dates for our in-class exams below are tentative and subject to change. Changes (if any) will be announced in class.

Exam 1 Friday, September 17
Exam 2 Friday, October 15
Exam 3 Friday, November 12
Final Wednesday, December 8, 8am to 10am, Room 210, Math Building

Grading Policy: 45% First Three Exams (15% each) 10% Homework 10% Online D2L Quizzes 10% Presentation 25% Comprehensive Final Exam Grading Scale: 90% - 100%: A 80% - 90%: B 70% - 80%: C 60% - 70%: D Below 60%: F

Course Requirements:

- **Three in-class exams** If you know in advance that you will miss an in-class exam, you must notify me via email at least one week before its scheduled date and you must take it before the exam is scheduled. There will be no make-up for an in-class exam after the scheduled date. If you miss an in-class exam due to an unexpected situation, I will use the final exam score to replace the missing exam score. This can only be applied for one missed exam. Student ID with photo may be required for exams. Cell phones and graphing calculators are not allowed during exams, even if that is all you brought. Students are responsible for bringing their own scientific calculator to exams. No music (even through headphones) is allowed during exams.

- **Homework** For roughly every section in the book that we cover, there will be a corresponding homework set. All the homework sets assigned in a given week are due on Friday the following week either in class or in the box in front of Room 320 by noon unless changes are announced in class. Late homework will not be accepted but your lowest 3 homework scores will be dropped. You are welcome to use your textbook and class notes to complete each homework set. Collaboration with your classmates is also welcome but ensure that you are continually striving to master the concepts. Academic integrity should be maintained, as with other assessments in this course. The list of assigned exercises from the text can be found in this syllabus. The homework is crucial to your understanding of the course material that you complete the assigned problems (at a minimum!) as preparation for quizzes, exams, and daily participation. Each of your homework set will be graded based on completion and a few selected exercises (selected by the grader).

- **How to turn in your homework**—Please do your homework on [roughly] 8.5 x 11 paper. Staple all the pages from one assignment in the upper left hand corner. Fold it in half lengthwise, and write your name, the assignment number i.e. the textbook sections for that homework, the due date, and my name (Dr. Dang) on the outside. It is important that you follow this procedure since the grader will have a lot of assignments (from various sections) to grade and it is easy to lose the assignments which do not have the correct format and information.

Solutions should be clearly labeled and in order. The style of your written solutions should be very much like that of a text book example; solutions should contain enough explanation so that one of your classmates would be able to easily understand what you have done. Generally, it is inadequate to merely write down a final answer.
• Homework corrections—If you lose points on a homework problem selected by the grader to grade, you can come to my office during office hours and rework the entire problem for me. If you demonstrate to me that you fully understand the problems and the concepts involved, you can get all those points back. You can do this for any homework assignment (after the due date) and before the end of the final week of class. You can correct multiple homework in one visit if you like.

• Quizzes We will have D2L quizzes due every Tuesday by midnight. Each quiz has a time limit of 30 minutes and has 5-6 questions. The questions are about the material of the sections covered in class the week before. There will be no make-up quizzes. However, you can correct any quiz and obtain full credit by coming to my office during office hours, working out all the questions in the quiz (even if you only miss one question), and explaining your solutions to me as you solve them. You can do this for any quiz, at any point in the semester after the due date of the quiz and before the end of the final week of class. You can also correct multiple quizzes in one visit if you like.

• Presentation There will be a final presentation based on a topic of your choice. Refer to D2L for specific details on the requirements and the deadline of the presentation and a list of approved topics.

• A comprehensive final exam The final exam is comprehensive and is on Monday, December 6, 10:30am to 12:30pm in our regular classroom. I will use the final exam score to replace the lowest of your three in-class exams score (if the final is higher). Note that this can only be applied once, that is, if you miss an in-class exam, that will be your lowest exam score and the final exam will be used to replace that missed exam score.

• Class attendance and participation—Students are expected to attend all class meetings, arriving on time and actively participating in class discussions. Cell phones and other devices that have the potential to distract you, me, or your classmates should be put away and silenced. If you are absent, you are responsible for determining what you missed and for being prepared for class when you return.

• D2L discussion forum—Every week, I will post questions about the material on D2L for you to think about and share your thoughts. These are short questions that should take you no more than 10-15 minutes to respond and they will consolidate your knowledge of the material we cover. So, please do participate and share your thoughts. You can also post any questions you have about the topics we cover or the homework problems on the D2L discussion forum. Again, you are strongly encouraged to answer my questions, answer your classmates’ questions and share your thoughts on the material we cover. If there is a high level of participation and enthusiasm in the discussion forum from the entire class, I might add a small percentage of extra credit to your final grade for the semester. So, please participate and encourage your classmates to participate.

• Preparing for class—You should be prepared to invest several hours (at least 2 hours for each credit hour) 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 university email regularly, as I may send reminders, assignments, or announcements.

General Policies and Information:

• We will typically spend class time on new material. Questions on material covered in previous class periods or on homework or on logistic should be asked during office hours.

• To contact me, you may drop by my office during office hours, e-mail me or call my office. I will do my best to reply quickly.

• The Academic Assistance and Resource Center (AARC) operates walk-in tables (no appointment necessary) throughout the week. Call them or check their website for their hours of operation.

• Students are expected to respect the learning environment of their fellow students. Towards this end, use of mobile phones, mp3 players, PDAs, etc., is forbidden during class. 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. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom.

• Since you have a full semester to arrange any travel plans, they are not an excuse for missing the final.

• You may get help on work that is assigned to be done outside of class, unless otherwise instructed, but I expect any work that you turn in to reflect your understanding of the material. On in-class graded work, I expect you to only use your brains, pencil, paper, and, a scientific calculator.

Tentative Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Precalculus A Topics</th>
<th>Assigned Exercises from Axler, 3rd edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1 and 1.2</td>
<td>1.1: 3, 4, 7, 8, 9, 10, 13-18, 19-22, 31, 32, 33-36, 47-52.</td>
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<tr>
<td></td>
<td></td>
<td>1.2: 5-8, 9-12, 15, 16, 19-22, 25, 26, 39, 40.</td>
</tr>
<tr>
<td>2</td>
<td>1.3 and 1.4</td>
<td>1.3: 1-14, 21, 22, 23, 24, 27, 28, 29, 30, 33, 34, 41, 42, 57-60.</td>
</tr>
<tr>
<td>3</td>
<td>1.4 and 1.5</td>
<td>1.4: 1-12, 21-24, 27-30, 39, 40, 43, 44.</td>
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<td></td>
<td>1.5: 1-8, 11, 12, 15-18.</td>
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<tr>
<td>4</td>
<td>1.6</td>
<td>1.6: 1-6, 13, 14, 15-18, 21-26.</td>
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<tr>
<td>5</td>
<td>2.1 and 2.2</td>
<td>2.1: 3-6, 13-16, 25-28, 29-32, 35, 36, 41, 42.</td>
</tr>
<tr>
<td>6</td>
<td>2.2 and 2.3</td>
<td>2.2: 1-2, 19-22, 23, 24, 33, 34, 41-44, 65, 66, 73, 74, 77, 78.</td>
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<td></td>
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<td>2.3: 3-6, 7, 8, 13, 14, 15-18, 25-28, 33, 34, 39, 40, 51, 52, 65, 66, 79-86.</td>
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<tr>
<td>7</td>
<td>2.4 and 2.5</td>
<td>2.4: 1-6, 11, 12, 21-26, 27, 28, 29, 30.</td>
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<tr>
<td>8</td>
<td>2.5</td>
<td>2.5: 1-3, 5-8, 9, 10, 15, 16, 27-30, 33-36, 37-40.</td>
</tr>
<tr>
<td>9</td>
<td>3.1 and 3.2</td>
<td>3.1: 1, 2, 9-20, 25-28, 29, 30, 39-42, 53-60, 71, 72.</td>
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<tr>
<td></td>
<td></td>
<td>3.2: 3-8, 9, 10, 37, 38.</td>
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<tr>
<td>10</td>
<td>3.3 and 3.4</td>
<td>3.3: 1-6, 13-20, 27-30.</td>
</tr>
<tr>
<td>11</td>
<td>3.4 and 3.5</td>
<td>3.4: 15, 16, 19, 20, 21-24, 31, 32.</td>
</tr>
<tr>
<td>12</td>
<td>3.5</td>
<td>3.5: 7-12, 15, 16, 17-20, 37-40, 41, 42.</td>
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</tbody>
</table>
Academic Integrity (Policy A-9.1)

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

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf

Withheld Grades Semester Grades Policy (A-54)

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.

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 D-34.1 http://www.sfasu.edu/policies/student_conduct_code.asp). 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.

Student Learning Outcomes (SLO): At the end of Precalculus A and B, 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. Define triangular/circular trigonometric functions.
8. Determine the domains/ranges/graphs of circular trigonometric functions and their transformations.
9. Identify special triangles and values of the trigonometric functions at the standard multiples.
10. Extend the definition of the trigonometric functions and the Pythagorean Theorem to obtain the reciprocal, quotient, and Pythagorean identities.
11. Understand the sum and difference formulas and use them to generate the double- and half-angle formulas.
12. Restrict the domain of the trigonometric functions so that the inverse trigonometric functions may be defined.
13. Solve trigonometric equations.
15. Recognize that the distance formula is an application of the Pythagorean Theorem.
16. Define and analyze the conics: circles, ellipses, parabolas, and hyperbolas.
17. Convert the polar equation of a conic to a rectangular equation and vice versa.
18. Solve basic systems of equations.

Importance of Mental Health
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.

<table>
<thead>
<tr>
<th>On-campus Resources: SFASU Counseling Services</th>
<th>SFASU Human Services Counseling Clinic</th>
<th>Crisis Resources:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFASU Counseling Services</td>
<td>SFASU Human Services Counseling Clinic</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.sfasu.edu/counselingservices">www.sfasu.edu/counselingservices</a></td>
<td><a href="http://www.sfasu.edu/humanservices/139.asp">http://www.sfasu.edu/humanservices/139.asp</a></td>
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</tr>
<tr>
<td>3rd Floor Rusk Building</td>
<td>Human Services Room 202</td>
<td></td>
</tr>
<tr>
<td>936-468-2401</td>
<td>936-468-1041</td>
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Need More Information?
See [http://www2.sfasu.edu/math/docs/syllabi/MATH2211Syllabus.pdf](http://www2.sfasu.edu/math/docs/syllabi/MATH2211Syllabus.pdf) for elements common to all sections.
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:

<table>
<thead>
<tr>
<th>Functions</th>
<th>Approximate time spent</th>
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</thead>
<tbody>
<tr>
<td>Definition/notation</td>
<td>75%</td>
</tr>
<tr>
<td>Domains/ranges of basic functions, their graphs, and topics appropriate to each type of function:</td>
<td></td>
</tr>
<tr>
<td>Linear functions: constant functions; slope; point-slope/slope-intercept form; solving linear equations/inequalities</td>
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<tr>
<td>Power functions: end behavior</td>
<td></td>
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<tr>
<td>Polynomials: intercepts, maximum/minimum number of turning points, and end behavior; solving polynomial equations/inequalities (factoring, Zero Product Principle, quadratic formula)</td>
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</tr>
<tr>
<td>Systems of equations</td>
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<tr>
<td>Rational functions: horizontal, vertical, and oblique asymptotes; polynomial long division and proper rational functions, end behavior</td>
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</tr>
<tr>
<td>Exponential functions: properties of exponents (including, especially, rational exponents); asymptotes and end behavior; exponential growth/decay; natural exponential</td>
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<tr>
<td>Logarithmic functions: properties of logarithms; asymptotes and end behavior; natural logarithms; solving exponential/logarithmic equations</td>
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</tbody>
</table>
- 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 $2\pi$

**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**
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**Definition of Academic Dishonesty (SFA policy 4.1):**
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- using or attempting to use unauthorized materials on any class assignment or exam;
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- submitting an assignment as one’s own work when it is at least partly the work of another person;
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Withheld Grades

Semester Grades (SFA Policy 5.5)
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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.