MATH 2211.001 & 2011.001, Precalculus A
Department of Mathematics and Statistics
Class Policy Sheet and Syllabus — Spring 2024

Professor: Dr. Keith Hubbard
Office: 336 Mathematics building
Email: hubbardke@sfasu.edu
Office Phone: 936.468.1533

Class Times: 10:00-10:50 MWF
Place: Bush Math Building 206

Course description: This is a prep course for the calculus sequence. In Precalculus A (MATH 2111/2111), we study properties and graphs of algebraic, exponential, and logarithmic functions as well as linear systems; we continue the study in Precalculus B (MATH 2112/2112) with trigonometric functions, right triangle definitions of the trig functions and their inverses; fundamental trigonometric identities; conic sections; polar and rectangular coordinate systems.


Course Calendar: Please note that the dates for our in-class exam below is subject to change. The final is university scheduled.

- Exam 1: Friday, February 9
- Exam 2: Friday, March 8
- Exam 3: Friday, April 12
- Final Exam: Monday, May 6, 10:30-12:30

Course Requirements:
- **Four in-class exams (including the final)** — If a student must miss an exam due to an excused absence, special arrangements should be made in advance. **Cell phones and graphing calculators are not allowed out during exams.** Students are responsible for bringing their own scientific calculator to exams.
- **Weekly in-class quizzes & homework** — We will have homework from the textbook on every section. Completing the homework is crucial for success in the course. We will also have weekly in-class quizzes on non-exam weeks. Finally, we will have Pre-Quizzes (originally a student’s idea), that will be graded based on completion.
- **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 outside of class between each class period reading the text, practicing examples, and working homework exercises. It is best to look at material to be discussed in class before coming to class. Check your university email and GroupMe regularly, as I may send reminders, assignments, or announcements.

Learning Teams: There is an SI for this class! 😊 Hudson Hart will be available Tues/Thurs, 4-5pm in Math 206.

Grading Policy: 15% Homework 15% Quizzes 45% Exam 1, 2, & 3 25% Final Exam

Grading Scale: 90% - 100%: A 80% - 90%: B 70% - 80%: C 60% - 70%: D Below 60%: F

Notes to the Student: Precalculus A and B are prep courses 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 Precalculus prepares you for the calculus sequence is by getting you accustomed to a fast-paced, content-driven course. To do well, you need to keep up. 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.

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.

Student Learning Outcomes (SLO): At the end of MATH2211, 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.

**Academic Integrity (Policy 4.1)**

*The Code of Student Conduct and Academic Integrity* outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements. Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam. Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

**Withheld Grades Semester Grades (Policy 5.5):**

Please copy and paste the following statement and place it in your course syllabus.

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 promptly may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

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**The Dean of Students Office** (Rusk Building, 3rd floor lobby)  
[www.sfasu.edu/deanofstudents](http://www.sfasu.edu/deanofstudents); 936.468.7249, dos@sfasu.edu

**SFA Human Services Counseling Clinic**  
Human Services 202  
[www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp); 936.468.1041

**Crisis Resources:**

- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- johCrisis Text Line: Text HELLO to 741-741

**The Health and Wellness Hub “The Hub”**  
Location: corner of E. College and Raguet St.
To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person — mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education  
[www.sfasu.edu/thehub](http://www.sfasu.edu/thehub); 936.468.4008; thehub@sfasu.edu

**SFA Drop Policy**  
[https://www.sfasu.edu/policies/course-add-drop-6.10.pdf](https://www.sfasu.edu/policies/course-add-drop-6.10.pdf)
<table>
<thead>
<tr>
<th>Week</th>
<th>Precalculus A Topics</th>
<th>Axler 3rd edition Exercises and Problems</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>1.1, functions</td>
<td>1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45-50, 61, 63, 69, 73</td>
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<tr>
<td>1/18 – 1/19</td>
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<tr>
<td>Week 2</td>
<td>1.2, coordinates and graphs</td>
<td>11-24, 42, 44, 46, 49-52</td>
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<td>1/22 – 1/26</td>
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<td>Week 3</td>
<td>1.3, transformations, even/odd</td>
<td>1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 55, 57, 69, 73-77</td>
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<td>1/9 – 2/2</td>
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<tr>
<td>Week 4</td>
<td>1.4, function composition</td>
<td>1, 3, 5, 7, 9, 11, 13, 17, 19, 23, 33, 37, 39, 43, 62, 69</td>
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<td></td>
<td>1.5, inverse functions</td>
<td>1, 2, 7, 9, 11, 19, 21, 26, 39, 40, 43, 47</td>
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<td>2/5 – 2/9</td>
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<td>Week 5</td>
<td>1.6, graphs of inverses, increasing/decreasing</td>
<td>1, 5, 9, 13-35 odds, 39, 45</td>
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<td>2/12 – 1/16</td>
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<td>Week 6</td>
<td>2.1, lines</td>
<td>3, 5, 9, 13, 15, 23, 27, 31, 35, 37, 43, 49, 59</td>
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<td>2/19 – 2/23</td>
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<td>Week 7</td>
<td>2.2, quadratic functions</td>
<td>1, 5, 13, 15, 19, 31, 33, 35, 39, 43, 51, 59, 63, 67, 75, 77</td>
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<td>2/26 – 3/1</td>
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<tr>
<td>Week 8</td>
<td>2.3, exponents</td>
<td>1-31 odds, 33, 39, 45, 55, 61, 79, 81, 83, 133</td>
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<td>3/4 – 3/8</td>
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<td>Week 9</td>
<td>2.4, polynomials</td>
<td>1-29 odds, 33, 41, 66-72, homework on handout</td>
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<td>3/18 – 3/22</td>
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<td>Week 10</td>
<td>3.1, logarithms</td>
<td>9-61 odds, 71, 74, 77, 90-92</td>
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<td>3/25 – 3/27</td>
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<tr>
<td>Week 11</td>
<td>3.2, power rule of logs</td>
<td>1, 3, 5, 7, 9, 29, 33, 35</td>
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<td>4/1 – 4/5</td>
<td>3.3, product and quotient rules for logs</td>
<td>1, 3, 5, 7, 9, 15, 17-33 odds, 39, 59, 61</td>
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<td>Week 12</td>
<td>Review</td>
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<td>4/8 – 4/12</td>
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<td>Week 13</td>
<td>3.4, exponential growth</td>
<td>5, 9, 12, 15, 17-21, 31, 33</td>
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<td>4/15 – 4/19</td>
<td>3.5, natural logarithm</td>
<td>7, 11, 15, 17, 19, 21, 23, 25, 34, 47; 3.7 #3, 5, 7, 18</td>
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<td>Week 14</td>
<td>Systems of Linear Equations</td>
<td>Homework on handout</td>
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<tr>
<td>4/22 – 4/26</td>
<td>Matrices</td>
<td>Homework on handout</td>
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<tr>
<td>Week 15</td>
<td>Catch-up</td>
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<td>4/29 – 5/3</td>
<td>Review</td>
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<td>Week 16</td>
<td>Final Exam – Mon, 5/6, 10:30-12:30</td>
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Course description: Preparatory for the calculus sequence: properties and graphs of algebraic, exponential, and logarithmic functions and their inverses; solving systems of equations with matrices.

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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<tbody>
<tr>
<td>o Definition/notation</td>
<td>90%</td>
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<td>o Domains/ranges of basic functions, their graphs, and topics appropriate to each type of function:</td>
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<tr>
<td>▪ Linear functions: constant functions; slope; point-slope/slope-intercept form; solving linear equations/inequalities</td>
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<td>▪ Power functions: end behavior</td>
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<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>
<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>
<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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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)
- Systems of Linear Equations and Matrices

**Student Learning Outcomes (SLO):** At the end of MTH 2211, 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 and solve systems of equations using matrices.

There are no specific program learning outcomes for this major addressed in this course. It is 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.

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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. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

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- 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.

Date of document: 08/23/2023