Stephen F. Austin State University  
Department of Mathematics  
Pre-Calculus A (MATH 2211-001)  
Syllabus & Course Policy

Instructor details:
Dr. Md Istiaq Hossain  
Office Phone: (936)-468-1702  
E-mail: hossainm2@sfasu.edu  
Class Schedule: MWF 8.00-8.50 AM, Math Building Room 208  
Student Hours: MWF 10.00 - 11.00 AM, TR 09.30 - 10.30 AM (or by appointment)

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.

Necessary Materials:
- **Supplemental Material**: A resource the instructor will occasionally draw from is M. Boelkins, *Active prelude to Calculus*, 2019. [https://activecalculus.org/](https://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.

Withdrawal: The last day to withdraw from a full-session course with a grade of W is April 24, 2023. Note: You can find the withdrawal dates and procedures on [here](#) and [here](#).

Make-up and Late-work 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.

Grading Categories and Weights:
(1) **Homework**: Homework is necessary for success but **will not be graded**. For guidance, see the suggested exercises.

(2) **Quizzes**: At the beginning of class the instructor reserves to right to present a question on the board/projector and you will have the first five minutes of class to answer the question and turn in your work. Quiz questions will be based off of the previous day’s work and the corresponding suggested homework exercises. Quizzes will be graded out of 2 points, 1 point for attempting the question, and 1 point if the answer is correct. The top 20 quizzes will be kept for the final grade. **Quizzes will be worth a total of 20%.**
(3) **Group/Individual assessments**: Occasionally there will be group/individual works that will happen in the beginning of a class. If its a group assessment then you will be put into a group where you will discuss problems/solutions that are assigned to you and write your solution in your own way. The individual assessments are most likely going to be assigned through Brightspace/D2L. The top 10 assessments will be kept for the final grade. **Group/Individual assessments will be worth a total of 10%**.

(4) **Unit Exams**: There will be two one-hour exams, each exam is worth twenty 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. The first and second exams will be worth 15% and 25%, respectively with **a total of 40%**. No test scores will be dropped.

(5) **Final Exam**: The Final Exam **will be a comprehensive exam worth 30%**.

**Grading Scale**:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<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>0-59.99%</td>
</tr>
</tbody>
</table>

**Tentative Semester Schedule**:

<table>
<thead>
<tr>
<th>Week#/Day</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Aug 28 (0.1/0.2/0.3)</td>
<td>30 (1.1)</td>
<td>Sep 1 (1.1/1.2)</td>
</tr>
<tr>
<td>Week 2</td>
<td>4 (1.2)</td>
<td>6 (1.3)</td>
<td>8 (1.4)</td>
</tr>
<tr>
<td>Week 3</td>
<td>11 (1.5)</td>
<td>13 (1.5)</td>
<td>15 (1.6)</td>
</tr>
<tr>
<td>Week 4</td>
<td>18 (1.6)</td>
<td>20 (1.6)</td>
<td>22 (2.1)</td>
</tr>
<tr>
<td>Week 5</td>
<td>25 (Review)</td>
<td>27 (Exam 1)</td>
<td>29 (2.1)</td>
</tr>
<tr>
<td>Week 6</td>
<td>Oct 2 (2.2)</td>
<td>4 (2.2)</td>
<td>6 (2.2)</td>
</tr>
<tr>
<td>Week 7</td>
<td>9 (2.3)</td>
<td>11 (2.3)</td>
<td>13 (2.4)</td>
</tr>
<tr>
<td>Week 8</td>
<td>16 (2.4)</td>
<td>18 (2.4)</td>
<td>20 (2.5)</td>
</tr>
<tr>
<td>Week 9</td>
<td>23 (3.1)</td>
<td>25 (Review)</td>
<td>27 (Exam 2)</td>
</tr>
<tr>
<td>Week 10</td>
<td>30 (3.2)</td>
<td>Nov 1 (3.3)</td>
<td>3 (3.4)</td>
</tr>
<tr>
<td>Week 11</td>
<td>6 (3.4)</td>
<td>8 (3.4)</td>
<td>10 (3.5)</td>
</tr>
<tr>
<td>Week 12</td>
<td>13 (3.5)</td>
<td>15 (Sys,Lin.Eqn)</td>
<td>17 (Sys,Lin.Eqn)</td>
</tr>
<tr>
<td>Week 13</td>
<td>20 (TG.B)</td>
<td>22 (TG.B)</td>
<td>24 (TG.B)</td>
</tr>
<tr>
<td>Week 14</td>
<td>27 (Matrices)</td>
<td>29 (Review)</td>
<td>Dec 1 (Review)</td>
</tr>
<tr>
<td>Week 15</td>
<td>4 (Review)</td>
<td>6 (Review)</td>
<td>8 (Review)</td>
</tr>
<tr>
<td>Week 16</td>
<td>11 (Final @8.00 AM)</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>

No class days: TG.B – Thanksgiving Break; Sys.Lin.Eqn – System of Linear Equations
Academic Integrity (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.

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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.

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Withheld Grades Semester Grades 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 coursework 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 to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

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- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- Crisis Text Line: Text HELLO to 741-741
Important Notes:

- All exams will count toward your final credit. I generally provide no extra credit.

- Please note that I do not grade “answers” but the work shown and appropriate procedures used that support your claims and lead to the correct solution of a problem. On a written exam you must show a complete and correct work for each problem to ensure full credit. Getting a correct answer without supporting work will result in a minimal partial credit. It is better, in general, to show some correct steps and procedures with incorrect final answer than to give the correct answer without any work.

- It is much better to study in a continuous fashion than to cram before an exam. For each hour of class instruction you should plan on spending at least two hours of your time for studying outside of the class.

- Mathematics should not seem like remembering processes or procedures. If a mathematical step does not make sense to you, reexamine your work.

- It is really important to understand that “Practicing” is the key to your understanding of mathematics and subsequently being successful in the course.

- If you are struggling with the core concept then please seek for help as soon as you can. Regularly coming to your “student hours” and/or seeking help in AARC (situated on the first floor of the library) can be really helpful. 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.

- 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.

- From 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.
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; 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:

Approximate time spent

<table>
<thead>
<tr>
<th>Functions</th>
<th>90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition/notation</td>
<td></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>
<td></td>
</tr>
<tr>
<td>Power functions: end behavior</td>
<td></td>
</tr>
<tr>
<td>Polynomials: intercepts, maximum/minimum number of turning points, and end behavior; solving polynomial equations/inequalities (factoring, Zero Product Principle, quadratic formula)</td>
<td></td>
</tr>
<tr>
<td>Systems of equations</td>
<td></td>
</tr>
<tr>
<td>Rational functions: horizontal, vertical, and oblique asymptotes; polynomial long division and proper rational functions, end behavior</td>
<td></td>
</tr>
<tr>
<td>Exponential functions: properties of exponents (including, especially, rational exponents); asymptotes and end behavior; exponential growth/decay; natural exponential</td>
<td></td>
</tr>
<tr>
<td>Logarithmic functions: properties of logarithms; asymptotes and end behavior; natural logarithms; solving exponential/logarithmic equations</td>
<td></td>
</tr>
</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)
- 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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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