I. COURSE INFORMATION

Instructor: Dr. Jeff Lyons
Office: CI 357
Office Phone: (361) 825-3265
Office Hours: TBA
Email: Jeff.Lyons@tamucc.edu
Website: sci.tamucc.edu/~jlyons
Time & Location: TR 5:30-6:45 PM in ST-108
Final Exam: Thursday, December 8 4:30-7:00 PM in ST-108

II. COURSE DESCRIPTION

This course is designed for students who wish to understand and master the basic mathematical concepts that help them succeed in Calculus I. In this class, mostly every topic will be studied geometrically, numerically, and algebraically, and communicated back to the instructor in a literate fashion (The rule of four). Less emphasis will be put on manual algebraic manipulation, more on concepts and cooperative learning. Topics include: data analysis, functions, graphs, limits, trigonometry, exponential & logarithmic functions, other functions, and math modeling.

III. COURSE PREREQUISITES

MATH 1314 (College Algebra) or placement into MATH 2312.

IV. COURSE MATERIALS

Required: Unused access code for online MyLabsPlus and a graphing calculator (TI-83 Plus or better).

Recommended: Physical copy of Precalculus by Lial, et al. However, an electronic access to the book comes with the one year MLP subscription so it is your decision whether to buy the book or not.

The MLP access code can be purchased online with a credit card or bundled with a physical copy of the textbook at the TAMU-CC bookstore.

V. COURSE OBJECTIVES AND GOALS

At the end of the course the student should be able to:

1.) Manipulate basic expressions:
   - multiply and factor polynomials
   - work with rational expressions
   - simplify rational exponents
   - rationalize fractions

2.) Solve standard equations and inequalities:
   - solve linear equations
   - solve quadratic equations
   - determine and graph the solution set of an inequality
   - solve absolute value equations
   - solve exponential and logarithmic equations
- solve trigonometric equations
- solve systems of linear equations

3.) Determine features of graphs of functions and circles, create graphs, and transform graphs

- graph circles whose equation needs to be simplified first
- determine whether a given graph is the graph of a function
- graph linear functions
- recognize the graphs of some basic functions
- use graphing techniques, such as shifts and stretches
- determine from a polynomial how its graph will look
- find axis-intersects for polynomials
- be able to graph trigonometric functions and their translations

4.) Determine if given functions have inverses, find inverse functions, and know properties of standard invertible functions

- determine from the graph of a function whether it has an inverse
- check whether two functions are inverses of each other
- find the equation of the inverse of a function
- use continuous compounding and exponential functions
- use logarithms as inverse functions of exponential functions
- simplify logarithmic expressions
- graph and find values for the inverse circular functions

5.) Know and apply the trigonometry of triangles and trigonometric functions and identities

- convert between degrees and radians
- know the values of the basic trig functions for special angles
- solve right triangles
- use the circular functions to find coordinates of points on the unit circle
- have the fundamental trigonometric identities memorized
- be able to verify trigonometric identities
- simplify trig expressions using the double angle identities

VI. INSTRUCTIONAL METHODS AND ACTIVITIES

Instruction for this course includes lectures and discussions of mathematical concepts, demonstration or problem solving techniques using example problems, class discussion, and application of concepts involving class, group, and/or individual activities.

VII. EVALUATION AND GRADE ASSIGNMENT

The methods of evaluation and the criteria for grade assignments are:

<table>
<thead>
<tr>
<th>Evaluation Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework/Classwork</td>
<td>20%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>12%</td>
</tr>
<tr>
<td>Class Project</td>
<td>15%</td>
</tr>
<tr>
<td>Chapter Exams</td>
<td>33%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

Grading Scale - Grades will be no stricter than:

\[\begin{align*}
A & = 90 - 100 \\
B & = 80 - 89.99 \\
C & = 70 - 70.99 \\
D & = 60 - 69.99 \\
F & = 59.99 \text{ or below}
\]
No special options, assignments, or alternative grading schemes will be considered for individual students. All graded materials returned to the student are the sole responsibility of the student and must be resubmitted to the professor to receive consideration in grading disputes. *The sharing of calculators and other materials during exams is not permitted.*

**Homework/Classwork:** Individual assignments are made online through MyLabsPlus. Students will solve and submit completed homework assignments online through MLP. Homework will be assigned at the end of each section and have a due date. **It is the students’ responsibility to understand when an assignment is due.** This information is easily found once logged into MLP. Some assignments will have a “late” due date. The password for working an assignment after the due date is “late”. Any work done late will incur a penalty of 30% from the final score. The highest grade a student can receive once doing late work is 70% no matter what the original score was. Therefore, it is in your best interest to finish the assignment before the due date. **Do not work an assignment late unless you are willing to accept a 70 as the maximum score.** Time extensions for homework **will not** be given for any other circumstances, happenings, or individual student situations, period. It is also advisable to work extra problems out of the textbook’s exercise section for more practice, and it is the discretion of the professor to assign extra homework at any time. There will also be group activities and problem solving in class. These will be counted as homework grades. A few homework assignments will be dropped at the end of the semester. Homework is worth 20% of the course grade. Here is the website link: tamucc.mylabsplus.com. Helpful information on registering with MLP can be found here: http://sci.tamucc.edu/~jlyons/mymathlab-mml-2

**Quizzes:** Quizzes will be administered online through MLP. Quizzes will open each week and will have a due date a few days later. Once you begin the quiz, you will not be able to stop and return. **DO NOT SUBMIT UNTIL ALL PROBLEMS ARE COMPLETED.** In addition, there will be group pop quizzes during class time. Quizzes are worth 12% of the course grade. A few quiz grades will be dropped at the end of the semester.

**Project:** There will be a project associated with this course and relating to mechanical engineering. More details will be discussed later in the semester. The project will be 15% of the course grade.

**Chapter Exams:** There will be three individual assessment chapter exams given during the course of the semester. There will be no make-up exams given as the final can replace the lowest score. The exams will be worth 33% of the course grade.

**Final Exam:** The final exam will be an individual assessment covering ALL material presented in the course. The final will replace your lowest exam score if it will increase your course grade. The final exam will take place on Thursday 12/8 from 4:30-7:00 PM and is worth 20% of the course grade.

**VIII. TENTATIVE COURSE SCHEDULE**

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic(s)</th>
<th>Fall 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/25</td>
<td>Introduction and Review</td>
<td></td>
</tr>
<tr>
<td>8/30</td>
<td>1.1,2: Linear Equations and Applications</td>
<td></td>
</tr>
<tr>
<td>9/1</td>
<td>1.4,5: Quadratic Equations and Applications</td>
<td></td>
</tr>
<tr>
<td>9/6</td>
<td>1.7: Inequalities</td>
<td></td>
</tr>
<tr>
<td>9/8</td>
<td>1.8: Absolute Value Equations/Inequalities</td>
<td></td>
</tr>
<tr>
<td>9/13</td>
<td>2.1,2: Rectangular Coordinate System and Circles</td>
<td></td>
</tr>
<tr>
<td>9/15</td>
<td>2.3: Functions</td>
<td></td>
</tr>
<tr>
<td>9/20</td>
<td>2.4,5: Linear Functions and Curve Fitting</td>
<td></td>
</tr>
<tr>
<td>9/22</td>
<td>2.6,7: Graphs of Basic Functions and Graphing Techniques</td>
<td></td>
</tr>
<tr>
<td>9/27</td>
<td>2.8: Function Operations and Composition</td>
<td></td>
</tr>
<tr>
<td>9/29</td>
<td>3.1: Quadratic Functions</td>
<td></td>
</tr>
<tr>
<td>10/4</td>
<td><strong>Chapters 1 &amp; 2 Test</strong></td>
<td></td>
</tr>
<tr>
<td>10/6</td>
<td>3.4: Polynomial Functions</td>
<td></td>
</tr>
<tr>
<td>10/11</td>
<td>3.5: Rational Functions</td>
<td></td>
</tr>
<tr>
<td>10/13</td>
<td>4.1: Inverse Functions</td>
<td></td>
</tr>
<tr>
<td>10/18</td>
<td>4.2: Exponential Functions</td>
<td></td>
</tr>
<tr>
<td>10/20</td>
<td>4.3: Logarithmic Functions</td>
<td></td>
</tr>
<tr>
<td>10/25</td>
<td>4.4,5: Evaluating Logarithms and Exponential &amp; Logarithmic Equations</td>
<td></td>
</tr>
</tbody>
</table>
IX. CLASS POLICIES AND EXPECTATIONS

Attendance: Attendance is mandatory. Absences in the class may impact your final grade. Please save absences for emergencies. Any adjustments or corrections to the schedule or other policies will be announced in class and it is the responsibility of the student to stay informed of such changes. It is wise to develop acquaintances you can depend upon in case of an absence.

Make-ups: Since attendance is expected, there will be no make-up of online homework due to absence – excused or unexcused – no exceptions. There will be no make-ups given for missed quizzes or exams, period. If the student has a legitimate conflict, it will be possible to schedule to take an exam in advance of the exam date. This should be handled as soon as possible to allow the professor adequate time to prepare an alternate exam. Students absent from the final exam must either qualify for an incomplete [for the course] or receive a grade of zero for the exam; the final exam cannot be rescheduled or made-up.

Email: I will send information, updates, etc. through email to your islander (or campus registered) email account. It is your responsibility to check the account often for important and pertinent information. I will also reply to email as best I can. Remember I have multiple classes so a response may be slow at times.

Website: The course website is www.sci.tamucc.edu/~jlyons. There will be information about tests and quizzes, documents, etc. posted on the website. You will want to check frequently for updates. Please do not email me about course information (quizzes, tests, etc.) until you have reviewed the website.

Students will not be allowed to use cell phones or MP3 devices during class. If a student is caught using either during a quiz or exam, it will be considered as cheating and may warrant an “F” for the assignment.

Ask questions in class. Feel free to interrupt the lecture or discussion at any time for relevant questions. They are very much encouraged and will benefit everyone in the class. Come into my office during office hours for as much help as you need. You can also schedule a time in advance with me outside office hours for extra help if needed. Please email me with any questions you might have, and I will do my best to respond quickly.

X. DROPPING A CLASS

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. June 17th is the last day to drop a class with an automatic grade of “W” this term.

XI. ACADEMIC INTEGRITY/PLAGIARISM

University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism.
(Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will rest in an F on the assignment or test.

XII. CLASSROOM/PROFESSIONAL BEHAVIOR

Texas A&M University – Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in Article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. The prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

XIII. DISABILITY SERVICES

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services Office at (361) 825-5816 or go to the office at Driftwood 101.

XIV. GRADE APPEALS PROCESS

As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

XV. CHANGES

The instructor may amend the syllabus at any time prior to the final exam by announcing the changes in class.