I. COURSE INFORMATION

Instructor: Dr. Jeff Lyons
Office: CI 357
Office Phone: (361) 825-3265
Office Hours: TBD
Email: Jeff.Lyons@tamucc.edu
Website: math.tamucc.edu/~jlyons
Time & Location: TR 9:30-10:45 AM CS 114
Final Exam: Thursday, May 3 from 8-10:30 AM in CS 114

II. COURSE DESCRIPTION

This course is designed for students who wish to understand and master the basic mathematical concepts that will help them succeed in Calculus I. In this class, almost every topic will be studied geometrically, numerically, and algebraically then communicated back to the instructor in a literate fashion (the rule of four). Less emphasis will be put on manual algebraic manipulation and 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:

- A graphing calculator – recommended TI 84 or higher version.
- Printing of course materials. These can be found on the course webpage at www.math.tamucc.edu/~jlyons. The schedule can change so it is your responsibility to check often for materials to bring to class. Checking the night before each class is highly recommended.

V. STUDENT LEARNING OUTCOMES

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 ACTIVIES

The course will be a combination of instructional presentation of new material and concepts, whole-class discussion, individual investigations of mathematics, and optional one-on-one discussion time between students and the instructor outside of class. Students may be required to give individual or group presentations. All students are expected to actively engage in group and whole class activities with respect and perseverance.

VII. EVALUATION AND GRADE ASSIGNMENT

The methods of evaluation and the criteria for grade assignments are:
Homework/Classwork                     20%
Quizzes                                15%
Class Project                          15%
Chapter Exams                          30%
Final Exam                             20%
Grading Scale - Grades will be no stricter than:

- A = 90 – 100
- B = 80 – 89.99
- C = 70 – 70.99
- D = 60 – 69.99
- F = 59.99 or below

Homework/Classwork: Individual assignments are made online through WeBWorK. Students will solve and submit completed homework assignments online. Homework will be assigned periodically and have a due date. **It is the students’ responsibility to understand when an assignment is due.** This information is easily found once logged onto WeBWorK. Some assignments will have a “late” due date. Any work done late will incur a penalty. 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 WeBWorK link: https://courses.webwork.maa.org/webwork2/tamucc-math2312.

Quizzes: Weekly group quizzes will be administered in class. A few quizzes will be dropped at the end of the semester. Quizzes are worth 15% of the course grade.

Project: There will be a project associated with this course. The project will split the class into small groups and have each group research two topics that will be discussed in Calculus 1. See the project handout for more information. Each group will choose one of each type. The project will be 15% of the course grade.

Chapter Exams: There will be two individual assessment chapter exams given during the course of the semester. There will be no make-up exams given as the lowest score can be dropped or replaced by the final by mentoring attendance. The exams will be worth 30% of the course grade.

Final Exam: The final exam will be an individual assessment covering ALL material presented in the course. The final exam is worth 20% of the course grade.

Mentoring Incentive: The STEP program has provided a mentor for our class. At the start of the semester, the mentor will gather information on availability and then create a schedule of mentoring sessions. Attendance to a mentoring session for at least one hour will give you a mentoring credit. If you earn 5 mentoring credits, your lowest exam score will be dropped OR replaced by the final exam whichever is best. In addition, if you earn 10 mentoring credits, you will earn 5 points on your final exam score. In further addition, if you earn 15 mentoring credits, you will earn 3 points on your overall course grade.

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.**

VIII. TENTATIVE COURSE SCHEDULE

A tentative course schedule may be found at math.tamucc.edu/~jlyons/stepprecals12.

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 (and a life) so a response may be slow at times!

Website: The course website is www.math.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. March 30th 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. SYLLABUS AMENDMENTS

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