Texas A&M University – Corpus Christi
Department of Mathematics and Statistics
MATH2312.004 Pre-Calculus for STEP
Fall 2012

I. COURSE INFORMATION

Instructor: Mrs. Christine Peters
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Office Hours: Tuesday, 7:00-8:00 PM, or by appointment
Time & Location: TR 5:30 – 6:45 PM CS114
Final Exam: Thursday, December 6, 4:30-7:00 PM CS114

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.

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: 10%
- Chapter Exams: 30%
- Final Exam: 25%

Grading Scale

- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 60 – 69
- F = 59 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 student’s responsibility to understand when an assignment is due.** This information is easily found once logged onto WeBWorK. Homework is worth 20% of the course grade.

**Quizzes:** Weekly group quizzes will be administered in class. Quizzes are worth 15% of the course grade.
**Project:** There will be a project associated with this course. The project will be completed in small groups. The project will be 10% of the course grade.

**Chapter Exams:** There will be two independent 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 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 25% of the 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 is attached.

**IX. CLASS POLICIES AND EXPECTATIONS**

**Make-ups:** Since attendance is expected, there will be no make-up of online homework due to absence. There will be no make-up given for missed quizzes or exams. 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.

**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.

**Cell Phones:** Students will not be allowed to use cell phones during class.

**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. November 2, 2012 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.