**Math 1650.623**

This class meets at 10:00 on MWF and at 9:30 on TR.

Instructor: Dr. John Ed Allen – allen@unt.edu

Office Hours - 7:00 – 7:45 MTWRF or by appointment (see me after class or send me an email)

Note: The best students are those who use the teacher’s office hours at least once or twice during the semester. The purpose of going to office hours may be simply to get acquainted. Who knows – you may need a reference letter some day from a teacher who knows you! If I see you in my office, we will have a better relationship in class.

**Textbook:**

*Pre-calculus* by Stewart, Redlin, Watson –– (Brooks/Cole Publishing Company)

**Course Description**:

This is a course called “pre-calculus” because its purpose is to prepare students for calculus. It is designed around the notion of functions and their graphs, and includes polynomial and rational functions, exponential and logarithmic functions, and trigonometric functions. In addition, students will learn a variety of ways to represent functions. In addition to using functions in the standard Cartesian Coordinate System, students learn about polar coordinates and parametric equations. Many real-world problems can be solved using what we learn in the course. Applications are made to problems in physics, engineering, economics, geometry, and finance.

**Exams and Homework:**

You will be graded on written work done in the class. A short quiz will be given on Friday that covers work done during the week. In addition, there will be four mid-term exams plus a comprehensive final exam. Exams are announced about two weeks in advance.

You are required to complete homework problems from the book as assigned in class.

The quiz average is 20% of the course grade and the exams (including final) is 80% of the course grade.

**Grading Standard:**

90 – 100% A

80 – 89% B

70 – 79% C

60 – 69% D

Below 60% F

**Calculator use:**

Calculators will be used to solve problems when appropriate. I will use a TI-83, but any comparable calculator is suitable. Each exam will have a calculator portion and a non-calculator portion – students will complete the non-calculator portion first.

**Class Attendance:**

Class attendance is required. If you are absent for any reason (legitimate or otherwise), you must file an on-line absence form (see Academic page of the TAMS website).

## Students who cheat on quizzes or exams will be assigned a grade of F in the course.

It is the responsibility of students with certified disabilities to provide the instructor with appropriate documentation from the Office of Disability Accommodations.

**Learning Outcomes:**

Students will

* Understand basic concepts of the mathematics essential for being successful in calculus
* Know the concept of function and several classes of functions (polynomial, rational, exponential, logarithmic, trigonometric
* Have the capability to combine and transform functions from and between these classes
* Apply functions to solve problems in physics, engineering, economics, finance, and geometry
* Develop problem solving skills

**OVER>>>>>**

**Academic integrity:** The purpose of homework is to give the student practice in developing skills and abilities in pre-calculus with a view toward being able to be successful in calculus. Students are encouraged to work in study groups for homework, but be sure they can do the problems on their own.

***Academic dishonesty will not be tolerated. Do not copy solutions from each other or from a solutions manual. Students who cheat on homework or exams will be assigned a grade of F in the course.***

**Disabilities Accommodation:**

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.

**Lessons:**

The following is a listing of the approximate number of lessons spent on the topics given. If the class needs more class time prior to taking an exam on the topics covered, we will make adjustments.

Lessons 1 – 14

Sequences and series in general, arithmetic and geometric sequences and series, mathematics of finance, Mathematical Induction, the Binomial Theorem and combinatorial formulas.

Exam 1

Lessons 15 – 31

Function definition, graph of a function, transformations of functions, combining functions, quadratic functions as a model, 1-1 functions and the inverse of a function, real zeros of polynomial functions, arithmetic for complex numbers, rational functions and their graphs, exponential and logarithmic functions, applications.

Exam 2

Lessons 32 – 47

Trigonometric functions, solution of right triangles, radian measure, graphs of trig functions, Law of Sines, Law of Cosines, applications in geometry.

Exam 3

Lessons 48 – 64

Analytic trigonometry, identities, basic formulas, inverse trig functions, trig equations, trigonometric form of a complex number, roots, vectors, applications.

Exam 4

Lessons 65 – 72

Review for comprehensive final exam

Student Evaluation of Teaching Effectiveness