College Algebra, MAT* K86, CRN 30186

James Chadic

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Office Hours: Tuesday/Thursady 10:00-12:00pm and Monday/Wednesday 9:30am-10:30am, or by appointment.

Class Hours: Monday/Wednesday 10:30am-12:10pm   Class Room: E225

Prerequisite

MAT *K*172 with a "C" grade or better or appropriate placement through multiple- measures assessment process.

Required Material

In order to succeed in this class, the following items are **NECESSARY;**

1. Precalulus Graphs and Models by John W. Coburn and J.D. Herdlick, a graphing calculator is also required.

2. Please note, a graphing calculator is **REQUIRED.** Instructor will use a Texas Instrument calculator (TI-84 or TI-89). The use of Cell phones, tablets, or any sorts of electronic devices are **STRONGLY PROHIBITED** during class times.

3. A notebook and something to write with is **REQUIRED.**

Course Description

The course prepares for study of calculus. Students will expand their knowledge of algebraic and some early transcendental functions, and develop skills required for higher level math courses. Topics will also include: trigonometric functions, trigonometric identities and applications, introductory sequences and series.

Evaluations

Quizzes 15%, Special Project 10%, Take Home Exam 20% Exams 30%, and Final exam 25%.

Support Services

T.A.S.C, peers, or me during my office hours or by appointment.

Grading Policy

This is how the grade will be scale in the class. There will be **NO CURVE**. However, I will **not stop and deny you** if you want to improve your grade, meaning you are allow to do retakes as many times as you want, (just be aware that it will be harder compare to your previous one). Below is the measurements for the minimum/maximum for each letter grade.

- From $93 \to 100 \implies A$ $92 \to 90 \implies A-$

- From $89 \to 87 \implies B+$ $86 \to 83 \implies B$ $82 \to 80 \implies B-$

- From $79 \to 77 \implies C+$ $76 \to 73 \implies C$ $72 \to 70 \implies C-$

- From $69 \to 67 \implies D+$ $66 \to 63 \implies D$ $62 \to 60 \implies D-$

- From $59 \to 0 \implies F$

Class Cancellation

In case of increment weather, check the college website for class cancellations or call 860-215-9000 for recorded message.

During Class

I **WILL NOT TOLERATE** the use of electronics in this class, **EXCEPT** if this is an accomadation. Please refrain from using computers for anything but activities related to the class. Phones are prohibited as they are rarely useful for anything in the course. Eating and drinking are allowed in class but please refrain from it affecting the course. Try not to eat your lunch in class as the classes are typically active.

Attendance Policy

It is **VERY IMPORTANT** you attend class because if you do not you will see the outcome of it at the end of the semester and also it might impact your **FINANCIAL AID**, so please be mindful of that. Attendance is expected in all lecture. Valid excuses for absence will be accepted before class. In extenuating circumstances, valid excuses with proof will be accepted after class. For every class missed your knowledge about the subject will be decreasing, and in term of moving forward it will be difficult in your part. It is **YOUR RESPONSIBILITY** to find what you miss **NOT MINE**. Your life, your choice, and your education.

Academic Integrity and Honesty

At TRCC, we expect the highest standards of academic honesty. All students are expect to demonstrate integrity in the completion of their coursework. Academic integrity means doing one's own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from a reduced grade for the assignment to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be fill and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.

Accommodations for Disabilities

If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider (DSP) as soon as possible. Please note that accommodations cannot be provided until you provide written authorization from a DSP.
College Disabilities Service Provider:

- Matt Liscum, Counselor he can be reach at (860) 215-9265, and his office is at Room A113. He will be able to provide service for people that has learning disabilities, ADD/ADHD, Autism Spectrum, and Mental Health Disabilities.

- Elizabeth Wilcox, Advisor, she can be reach at (860) 215-9289, and her office is at Room A113 as well. She will be able to help people with medical, mobility, and sensory disabilities.

Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and TRCC policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and TRCC policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. CT State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at **STUDENT HANDBOOK** Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office.

Digication Statement

All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool, students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her earning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportu-

nities. If desired, students will have the option to create multiple portfolios.

Few things you need to be aware of

1. If I caught you on your cell phone during lecture or assessment time, the instructor will immediately will expel you from the class for that day. As a result you will not get any credit for the day and worse you will fail the assessment automatically.

2. If you are being disruptive lots of time wether during class period or during assessment time, **I will be ask you to leave the classroom.** Again you will get no credit for the day, or worse you faill the assessment automatically.

3. The quiz will be at the beginning of the class and it will be for 20 to 25 minutes **ONLY.** Be advise, if you come late during the quiz time you will have no additional time. There will be no make up for that.

4. If you miss an assignment wether it is a quiz, exam, or anything in particuarly that was graded. Without a proper excuse, **I will not** let you make it up.

5. There will be **NO CURVE.**

6. You are expected to **WORK HARD**

Words of Wisdom

"**My philosophy about teaching is simple, I am here to help you develop your own idea not through show you how to solve a problem step by step, rather by your own way of thinking.**"

Let's face the truth, Math is simply learning by doing it yourself.

Course Objectives

Upon completion of the course, student should be able to:

1. Evaluate a function at any given value of x.

2. Find the domain and range of a function.

3. Graph the function, using tables and transformations.

4. Graph piece-wise function

5. Determine whether a function is even or odd.

6. Identity local maxima, minima on the graph of functions and intervals of increase/decrease.

7. Model with functions.

8. Combine functions and find their compositions and inverse.

9. Graph Polynomials, find their zeroes, x-intercepts, analyze their end behavior. Use the factor theorem.

10. Graph rational functions and find their asymptotes.

11. Perform operations with complex numbers.

12. Find trigonometric form of a complex numbers.

13. Evaluate, graph exponential and logarithmic functions.

14. Solve exponential and logarithmic equations, model with exponential and logarithmic equations.

15. Find angle measure in radian and degrees.

16. Find all trigonometric ratios in a right triangle.

17. Find the values of trigonometric functions from the information given.

18. Solve a right triangle.

19. Solve a triangle using the law of sines and cosines.

20. Find trigonometric functions of real numbers using unit circle approaches.

21. Graph the trigonometric functions.

22. Use the trigonometric identities, addition, subtraction, double and half angle formula.

23. Evaluate inverse trigonometric functions.

24. Solve trigonometric equations.

25. Plot the complex numbers on the complex plane.

26. Use sequence notation to write sums.

27. Use factorial notation.

28. Use summation notation to write sums.

29. Model the real-life problems with arithmetic and geometric sequence.

30. Learn about Circle, and Ellipse

Course Content

Chapter 5 Exponential and Logarithmic Functions

1. Sec. 5.1 One-to-One and Inverse Functions

2. Sec. 5.2 Exponential Functions

3. Sec. 5.3 Logarithms and Logarithmics Functions

4. Sec. 5.4 Properties of Logarithms

5. Sec. 5.5 Solving Exponential and Logarithmic Equations

6. Sec. 5.6 Applications

Course Content

Chapter 6 Introduction to Trigonometric Functions

1. Sec. 6.1 Angle Measure, Special Triangles, and Special Angles

2. Sec. 6.2 Unit Circles and the Trigonometry of Real numbers

3. Sec. 6.3 Graphs of the Sine and Cosine Function

4. Sec. 6.4 Graphs of the Cosecant, Secant, Tangent, and Cotangent Functions

5. Sec. 6.5 Transformations and Applications of Trigonometric Graphs

6. Sec. 6.6 The Trigonometry of Right Triangles

7. Sec. 6.7 Trigionometry and the Coordinate Plane

8. Sec. 6.8 Trigonometric equation Models

Chapter 7 Trigonometric Identities, Inverses, and Equations

1. Sec. 7.1 Fundamental Identities and Famillies of Identities

2. Sec. 7.2 More on Verifying Identities

3. Sec. 7.3 The Sum and Difference Identities

4. Sec. 7.4 The Double-Angle, Half-Angle and Product-to-Sum Identities

5. Sec. 7.5 The Inverse Trig Functions and Their Applications

6. Sec. 7.6 Solving Basic Trig Equations

7. Sec. 7.7 General Trig Equations and Applications

Chapter 8 Applications of Trigonometry

1. Sec. 8.1 Oblique Triangles and Law of Sines

2. Sec. 8.2 The Law of Cosines; the Area of a Triangle

3. Sec. 8.5 Complex Numbers in Trigonometric Form

4. Sec. 8.6 De Moivre's Theorem and the Theorem on nth Roots

Chapter 10 Analytical Geometry and the Conic Sections

1. Sec. 10.1 Introduction to Analytical Geometry

2. Sec. 10.2 The Circle and the Ellipse

3. Sec.10.3 The Hyperbola

4. Sec.10.4 The Analytical Parabola

5. Sec. 10.6 Polar Coordinates, Equations, and Graphs

6. Sec. 10.7 More on the Conic section

7. Sec. Parametric Equations and Graphs

Chapter 11 Additional Topics in Algebra

1. Sec. 11.1 Sequences and Series

2. Sec. 11.2 Arithmetic Sequences

3. Sec. 11.3 Geometric Sequences

4. Sec. 11.4 Mathematical Induction

5. Sec. 11.5 The Binomial Theorem