

10409 T4 TR 6:00 pm – 7:40 pm E 225

INSTRUCTOR: Dr. Kelly Molkenthin (pronounced “molk-in-tine”)
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 Email: kmolkenthin@trcc.commnet.edu

Office Hours: Tuesdays 12:30 – 1:30 pm
 Wednesdays 9:00 – 9:50 am
 Thursdays 10:00 – 10:50 am
 Fridays 12:00 – 12:50 pm
 and by appointment.

REQUIRED MATERIAL:

- *Precalculus: Mathematics for Calculus, 6th Edition*. Stewart, Redlin, Watson. Brooks/Cole 2012. ISBN # 978-8400-6807-1 (or 08400-6807-7)
- Graphing calculators will be needed for many homework problems and it is **REQUIRED** that you bring one to **every class**. Cell phones may **not** be used as calculators.

GRADING:	5 Exams:	500 points (100 each)
	Weekly Quizzes:	100 points (10 each)
	Attendance & Participation	25 points
Total:		625 points

Your final grade is the total number of points you have received divided by the total possible number of points. Final grades will be determined using the scale below:

A → 93% and above	A- → 90 - 92%	
B+ → 87 - 89%	B → 83 - 86%	B- → 80 - 82%
C+ → 77 - 79%	C → 73 - 76%	C- → 70 - 72%
D+ → 67 - 69%	D → 63 - 66%	D- → 60 - 62%

EXTRA CREDIT: There will be **no** “extra credit” assignments for this course.

ATTENDANCE: Attendance is required and will be taken for each class. An absence is excused **ONLY** for valid reasons (to be determined by the instructor) and if notification is given **PRIOR** to a missed class (via email, phone message – **not** word of mouth from another student). ***Also, if you miss a class it is **YOUR** responsibility to get the class notes from another student (refer to your class list) and **BE PREPARED** for the next class meeting (this includes taking the scheduled quizzes).***

CLASS CANCELCATION: In the unlikely event that a class needs to be canceled by the instructor, you will be notified by the instructor via email by asap on the day of the class cancelation.

HOMEWORK AND QUIZZES: Homework will be assigned on a regular basis. It is expected that you complete your homework by the next class meeting. Our expectation is that you are spending 2-3 hours of reading and doing homework for this class for every one hour we meet in class. So, you should expect to spend **at least 8-12 hours per week** on this class, every week!

Your in-class quizzes will be testing the concepts emphasized from class that week and your homework assignments. Make-ups for quizzes will be given in extreme situations and if arrangements are made with the instructor **prior** to the class meeting in which the quiz takes place. If you miss a class in which a quiz is given, DO NOT assume you will automatically be able to make up the quiz, it must be approved by the instructor. All make-ups must be completed before the next class meeting after the given quiz. Make-ups for quizzes will not be given if the absence on the quiz date is not an excused absence.

You will be given 12 quizzes throughout the semester, only your top 10 scores will count toward your final grade.

EXAMS: You will have five out of class exams. Exams are scheduled for the following dates:

Exam 1: distributed **Thursday 2/9/12**, due **Tuesday 2/14/12**,

Exam 2: distributed **Thursday 3/8/12**, due **Tuesday 3/13/12**,

Exam 3: distributed **Thursday 4/5/12**, due **Tuesday 4/10/12**,

Exam 4: distributed **Thursday 4/26/12**, due **Tuesday 5/1/12**,

Exam 5: distributed **Thursday 5/10/12**, due **Tuesday 5/15/12**.

This may change (but hopefully not), depending on how we are doing. All exams are due by 6 pm on their due dates, and must be delivered in person. DO NOT scan and email any exams! Emailed exams will *not* be accepted.

If you fail to hand in an exam by the respective due date and time, you will receive a grade of 0 (zero). Exams may be handed in prior to their due date/time by either bringing to my office or placing in my faculty box (D207). It is HIGHLY SUGGESTED you make a copy of your exam before handing it in, especially if you decide to hand it in early and place it in my mailbox.

RETENTION OF PAPERS: Students are expected to retain all graded work until final grades are received.

ACADEMIC DISHONESTY: Academic integrity is essential in all aspects of college coursework and learning. I have zero tolerance for academic dishonesty. It is expected that **YOU** complete all your assigned homework, quizzes and exams. Communication or collaboration of ANY sort is ABSOLUTEY PROHIBITED during any quiz or exam. Academic Misconduct is punishable in a number of ways, including a score of a zero on the assignment where the cheating took place, a grade of an F in the course and/or possible censure on your permanent record. All cases of academic dishonesty will be referred to the Academic Honor Council. Do not let yourself come under the suspicion of academic dishonesty. If two or more student exams are too similar for my liking, all parties involved will need to meet individually with me and go through the problems in question. You may also be asked to complete a similar problem in our meeting, explaining your work.

COURSE OBJECTIVES: This course prepares students for the study of Calculus I. Topics include, but are not limited to: polynomial and rational functions and their graphs, quadratic functions, operations on radical expressions, exponential and logarithmic functions, trigonometric functions and their graphs, trigonometric equations and identities, systems of equations, matrices and determinants.

COURSE OUTCOMES:

1. For each function, identify the domain, range, end behavior, local behavior and average rate of change over given intervals.
2. From an equation graph each function; and from a graph or data identify an equation
3. To any function, apply transformations involving vertical and horizontal shifting and stretching/shrinking.

4. Perform symbolic manipulations for algebraic representations of the various functions
 - a. Factor polynomials
 - b. Apply rules for radicals
 - c. Evaluate expressions with rational exponents
 - d. Apply rules for exponents and logarithms
 - e. Apply trigonometric formulas and identities: Pythagorean, reciprocal, sum, difference, double and half angle formulas.
5. Given an independent variable, find the dependent variable (given x find y): evaluate
6. Given a dependent variable, find all possible independent variables (given y find x): solve
7. Graph piecewise defined functions.
8. Use elementary functions to model data and solve practical problems.
9. Find the sum, difference, product and quotient of functions
10. Compose functions
11. De-compose functions
12. Tell if a function is invertible
13. Find the inverse of a function
14. Tell whether two functions are inverses by composition
15. Graph the inverse of a function using symmetry to $y=x$
16. Find the six trigonometric values of an acute angle, and the inverse trig values of a ratio of sides.
17. Solve triangles using right triangle trig, distinguish between the angle of depression and elevation.
18. Solve non-right triangles using the laws of sines and cosines
19. Solve applied problems using right triangle trigonometry
20. Add, subtract, multiply and divide complex numbers
21. Evaluate an integral power of i
22. Identify the conjugate of complex numbers
23. Find determinants of an $n \times n$ matrix
24. Solve a system using Cramer's rule
25. Solve a system using row reduced echelon form

ACCOMMODATIONS: Students with learning disabilities should contact the Learning Specialist, Chris Scarborough at 860-892-5751 or cscarborough@trcc.commnet.edu as soon as possible to ensure timely accommodations. Students with physical disabilities should contact Judy Hilburger at 860-383-5420 or via email at jhilburger@trcc.commnet.edu or Matt Liscum at 860-383-5420 or via email at mliscum@trcc.commnet.edu to facilitate accommodations.

CELL PHONE POLICY: All cell phones must be turned OFF or MUTED before entering the classroom and properly placed in a bag or pocket (not left on a desk). Any cell phone ringing or beeping during a class is inappropriate and unacceptable. Any cell phone use, especially texting, during class is also inappropriate and will not be tolerated. Students found using cell phones in any way in class will be asked to leave and will lose their attendance points for that class period. Cell phones may NOT be used for calculators in class.

****The key to success in this course is to attend every class and do all the homework when it is assigned. Ask questions when you have them, either in class or in my office. You will find it much easier to learn the new topics if you consistently keep up with the course material and homework problems!****

**TENTATIVE SYLLABUS MAT* K186
SPRING 2012**

<u>Week of:</u>	<u>Chapter(s):</u>	<u>Topics Covered:</u>
1/19	1.5, 1.7	Equations, Inequalities
1/24	2.1 – 2.5	Functions, Graphs of Functions, Average Rate of Change, Transformations of Functions, Quiz #1 – Thursday, 1/26
2/2	2.6, 2.7	Combining Functions, One-to-One Functions and their Inverses, Quiz #2 – Tuesday, 2/2 No Classes Thursday, February 4, College Professional Day
2/7	3.1, 3.2	Catch-up, Quadratic Functions, Polynomials, Quiz #3 – Thursday, 2/9 Exam #1 distributed Thursday 2/9, Chapters 1 & 2
2/14	3.3 – 3.6	Exam #1 due Tuesday 2/14 Dividing Polynomials, Real Zeros of Polynomials, Complex Numbers, Complex Zeros of Polynomials, Quiz #4 – Thursday, 2/16
2/21	3.7	Rational Functions, Catch-up No class Thursday, February 23
2/28	4.1 – 4.4	Exponential and Logarithmic Functions, Quiz #5 – Thursday, 3/1
3/6	4.5	Exponential and Logarithmic Equations, Catch-up, Exam #2 –distributed (via email) Thursday 3/8/12, Chapters 3 & 4 No class Thursday, March 8
3/13	6.1 – 6.4	Exam #2 due Tuesday 3/13 Trigonometric Functions of Angles, Inverse Trigonometric Functions of Angles, Right Triangles, Quiz #6 – Thursday, 3/15
3/27	6.5, 6.6	Law of Sines, Law of Cosines, Catch-up Quiz #7– Thursday, 3/29
4/3	5.1 – 5.4	Trigonometric Functions – Unit Circle Approach, Quiz #8 – Thursday, 4/5 Exam #3 distributed Thursday 4/5/12, Chapter 6

4/10	5.5, 7.1, 7.2	Exam #3 due Tuesday 4/10 Inverse Trigonometric Functions and Their Graphs, Trigonometric Identities, Addition & Subtraction Formulas, Quiz #9 – Thursday, 4/12
4/17	7.3 – 7.5	Double, $\frac{1}{2}$ Angle and Product-Sum, Trigonometric Equations Quiz #10 – Thursday, 4/19
4/24	10.1, 10.2	Systems of Linear Equations, Quiz #11 – Thursday, 4/26 Exam #4 distributed Thursday 4/26/12, Chapters 5 & 7
5/1	10.3-10.5	Exam #4 due Tuesday 5/1 Matrices and Systems of Equations, Algebra of Matrices, Inverse of Matrices, Quiz #12 – Thursday, 5/3
5/8	10.6	Determinants and Cramer's Rule, Catch-up Quiz #13 – Thursday, 5/10 Exam #5 distributed Thursday 5/10/12, Chapter 6
5/15		Exam #5 due Tuesday 5/15

The instructor has the right to change/modify this syllabus at any time with proper notification to the class