MAT* K158 Functions, Graphs and Matrices

T1 TR 11:00 am – 12:15 pm E 221

INSTRUCTOR: Dr. Kelly Molkenthin (pronounced "molk-in-tine") Office: C 234, 860-215-9455 Email: <u>kmolkenthin@trcc.commnet.edu</u> Office Hours: Mondays 3:15 – 4:15 pm Tuesdays 3:30 – 4:30 pm Wednesdays 9:15 – 10:15 am Thursdays 12:45 – 1:45 pm and by appointment.

REQUIRED MATERIAL:

- Mathematics with Applications in the Management, Natural, and Social Sciences by Lial, Hungerford, Holcomb, Mullins, 11th ed. ISBN #978-0-321-93107-8
- Calculator that supports 2-variable statistical calculations (preferably the TI-83 or TI-84). You may **not** use a tablet, phone, or computer as a calculator on an exam or quiz.

GRADING:	3 Exams:	300 points (100 each)		
	Weekly Quizzes:	200 points (20 each)		
	Final Exam	100 points		
	Attendance/Participation/Class Work	50 points		
	Total:	650 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:

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

EXTRA CREDIT: There will be no "extra credit" assignments for this course.

HOMEWORK AND QUIZZES: Homework will be assigned on a daily basis. The 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* 6-9 hours per week for this class, every week! Please have a separate binder for your homework, and bring your homework binder to every class. Also, BE SURE TO CHECK YOUR ANSWERS IN THE BACK OF THE TEXT. If you check the problem in the back of the text and it is not correct, re-do the problem. If you are struggling with the assignment, you need to seek out help from either your instructor or the tutor center ASAP!

Your in-class quizzes will be testing the concepts emphasized from class the previous week and your current homework assignments. There are no make-ups for missed quizzes. You will be given at least 12 quizzes throughout the semester, only your top 10 scores will count toward your final grade.

- ***NOTE:** Class time is reserved for presentation of material. Homework questions will be answered before or after class, or during meetings outside of class time.
- **EXAMS**: You will have three sectional exams and one final exam. Exams are (tentatively) scheduled for the following dates:
 - Exam 1: Thursday, 10/04/18 (100 points)
 - ◆ Exam 2: Thursday, 11/01/18 (100 points)
 - ◆ Exam 3: Thursday, 12/06/18 (100 points)
 - ◆ Final Exam: Thursday, 12/13/18 (100 points)

This <u>may</u> change (but hopefully not), depending on how we are doing. Make-ups for exams will be given only in **EXTREME** circumstances (to be determined by instructor: "vacations" or dentist/doctor appointments are NOT valid reasons to miss an exam, for example) AND if arrangements are made **PRIOR** to the missed exam. Any make-up must be completed before the next class meeting. No exam will be administered prior to the date/time of the scheduled exam. **No calls/no shows will receive a grade of 0 (zero)** on any exam. Your final exam is a cumulative **2+ hour** final exam.

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

ATTENDANCE & PARTICIPATION: All students start the semester will 50 "bonus" Attendance/Participation

points. Points will be deducted for unexcused absences, late arrivals, early departures, cell phone, tablet or computer use during class time and other distracting classroom behavior (determined by instructor). 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). Oversleeping, "colds" and "vacations" are examples that are **not** valid reasons for an absence.

<u>All absences reported by phone or reported to instructor in person **must be followed up with an email, or they will be considered unexcused. Do you best to not miss ANY classes!! Students are allowed a maximum of 2 excused absences per semester, excused absences will not affect your attendance and participation grade. Unexcused absences *will* lower your attendance and participation grade.</u>

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 scheduled quizzes and exams).* Your instructor will not provide you with class notes or "re-lecture" missed material.

Note: Class BEGINS at 11:00 am. It is expected that you will be in your seat and ready to go at 11:00 am. Students arriving after 11:00 am will lose attendance points for that class. Excessive "lateness" will not be tolerated, it is disruptive to both the instructor and the class. For safety, classroom doors will be locked shortly after 11:00 am. Emergencies and special circumstances can typically be accommodated – especially when discussed with the teacher in advance. However, regular late arrivals and early departures are unwanted interruptions that affect the classroom as a whole.

- **COMMUNICATION:** Verbal communication with the instructor regarding missed classes, test make-ups, special accommodations, etc. **must** be followed up with an email (<u>kmolkenthin@trcc.commnet.edu</u>) as soon as possible. This is essential!
- **COURSE OBJECTIVES:** A course in select topics from contemporary math focused on applications in business, economics and finances. Topics include the concept of function and its rate of change, a review of algebraic and graphical aspects of polynomial functions, a study of exponential and logarithmic functions, mathematical modeling, and operations on systems of linear equations including matrix operations. A graphing calculator is used throughout the course.

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

- 1. Identify a function (from a table, graph or equation).
- 2. Use function notation.
- 3. Graph a linear function, and interpret the slope of a linear function as a rate of change.
- 4. Sketch graphs of quadratic functions, other selected polynomial functions, exponential functions, and logarithmic functions.
- 5. Identify and interpret critical values of functions, including maxima, minima, intercepts and zeros.
- 6. Use modeling concepts and graphing technology to find linear, quadratic, cubic, quartic, exponential, logarithmic, and logistic models for raw data.
- 7. Develop familiarity and facility with a graphing calculator as a tool for understanding mathematical concepts and as a technological tool for solving mathematical problems.
- 8. Interpolate and extrapolate from mathematical models.
- 9. Solve applied problems on business and economics.
- 10. Solve applied problems involving simple and compound interest, annuities.
- 11. Solve systems of linear equations in two or more variables using matrices.
- 12. Solve selected applied matrix problems.
- 13. Solve selected linear programming problems.

CLASSROOM ETIQUETTE: Good manners and classroom etiquette should be common sense for most students. Occasionally there are students who seem unaware or oblivious to proper classroom etiquette. What is etiquette? It's a code of conduct, a method for dealing with how people interact with each other – based on respect and accepted norms of behavior.

1. Arrive to Class on Time.

Regularly arriving late to class signals a level of disrespect -- whether you mean to send that signal or not. If you have problems getting to class on time, find a way to solve them. And on those rare days when you do arrive late, remember to enter the room quietly.

2. Turn Off Your Cell Phone.

Unless you are expecting an important call or text (for which you will notify the instructor ahead of time), the proper thing to do is turn your cell phone completely off, or at least the volume off, as soon as you enter class and properly place it completely inside a pocket or bag.

3. Do Not Bring Food or Drink to Class

Do not eat or drink in class, **unless you are willing and able to clean up after yourself**. In many classrooms food is not allowed, so be sure to check for signage.

4. Avoid Side Conversations.

It is rude for students have a "private" conversation loudly enough that it's distracting to the instructor or other students in the classroom. If you have big news to share with your friends, do so before or after class -- but refrain from doing so during class. Besides being more respectful to the students and professor, you'll actually learn more information by being actively involved in the class rather than in your own side conversation.

5. Be Attentive in Class.

If you are going to make the effort to arrive on time and be in class, you should also make the effort to stay actively engaged in class. Avoid reading magazines, textbooks or completing any homework during class time. Flaunting your boredom or disinterest in the class is rude. Finally, please avoid falling asleep in class.

6. Stay for the Entire Class.

There may be times when you need to leave class early, but do not make a habit of doing so. If you do need to leave class early, you must alert the professor ahead of time and then discretely leave the classroom so as not to disturb the other students. If you do need to leave early, pick a seat close to the door to make a quick and quiet exit.

7. Avoid Signaling, Sending Signs That Class Time is Up.

Occasionally students attempt to signal that class is over by shutting their books loudly, unzipping and zipping their backpacks, and otherwise making noises indicating that class time is complete. Some students actually get up and walk out of class. I assure you I know how to tell time. If your professor does seem to have a problem with ending class on time, chat with him or her outside of class.

8. Contact the Professor When You Have to Miss Class.

When you have to miss class for legitimate reasons or when you miss class because of illness, contact the professor before the class meeting and inform him/her of your absence. You then need to obtain copies of lecture notes for *another student*. Do not, however, ask the professor in class to go over or re-lecture material you missed (for whatever reasons). And when alerting the professor a missed a class, do not ask the awful question, "are we doing (or did we do) anything important in the class I am missing/missed?"

- 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 ALEKS work. Communication or collaboration of ANY sort is ABSOLUTEY PROHIBITED during any 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 Dean. Do not let yourself come under the suspicion of academic dishonesty.
- **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 use is inappropriate and will not be tolerated. Students found using cell phones in any way in class will lose their attendance points for that class period. Cell phones may NOT be used for calculators in class. All cell phones must be completely out of sight, especially for all exams. Any visible cell phone during an exam will result in a 0 for that exam.
- **CLASS CANCELATION:** In the unlikely event that a class needs to be canceled by the instructor, a notice will be placed on the classroom door prior to the start of class. If time permits, you will be notified by the instructor via email as soon as possible prior to the canceled class.

For college cancelations, pay attention to the radio & TV announcements, call the college's main phone number, 860-215-9000, or visit the college's home page, <u>www.trcc.commnet.edu</u>. Please: DO NOT email or call your instructor regarding school closings!

It is also suggested all students register for <u>The MyCommnet Alert Notification System</u>. This system is used to deliver important information to students, faculty, and staff regarding weather-related class cancellations. The system delivers both email messages, and text messages over cellular phones to those individuals who are registered. To register, log on to your MyCommnet account at <u>http://my.commnet.edu/</u> and follow the link to MyCommnet Alert.

ACCOMMODATIONS: Students with learning disabilities should contact the Learning Specialist, Matt Liscum, at 860-215-9265 or via email at <u>mliscum@trcc.commnet.edu</u> as soon as possible to ensure timely accommodations. Students with physical disabilities should contact Elizabeth Willcox at 860-215-9289 or via email at <u>ewillcox@trcc.commnet.edu</u> to facilitate accommodations. All testing accommodations MUST be discussed with the instructor in a timely manner, that is, *at least* one to two class meetings **prior** to any scheduled test for which accommodations are needed.

- **DIGICATION**: All students are required to maintain a learning portfolio in Digication that uses the (Three Rivers) College Template.
- **STUDENT EMAILS:** Students are required to have a valid email. If it is necessary for me to email the entire class, I will use COMMNET to do this quickly and efficiently. If you do not regularly use your TRCC email, please be sure your TRCC email is properly forwarded to the email you regularly check.

BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY

Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:

"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:

"Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Vickie Baker, the Diversity Officer and Title IX Coordinator:

ACCEPTANCE POLICY: After reading this syllabus, choosing to stay registered for this course exemplifies your acceptance of the syllabus and all policies and consequences outlined in the syllabus, If you do not agree with any of the terms in the syllabus, you are free to withdraw.

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!

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

TENTATIVE SYLLABUS

Week of:	<u>Chapter(s)</u> :	Topics Covered:
8/28	Chapter 1	Class introduction, Chapter 1 Review
9/4	Chapter 1	Chapter 1 Review ◆ Quiz #1 – Thursday 9/6
9/11	2.1 – 2.3	Graphs, Equations of Lines, Linear Models Quiz #2 – Thursday 9/13
9/18	2.4, 3.1, 3.2	Linear Inequalities, Functions, Graphs of Functions ◆ Quiz #3 – Thursday 9/20
9/25	3.3 – 3.5	Applications of Linear Functions, Quadratic Functions and Applications, Polynomial Functions • Quiz #4 – Thursday 9/27
10/2		Catch up, Review ◆ Exam #1 – Thursday 10/4
10/9	4.1 – 4.3	Exponential Functions, Applications of Exponential Functions, Logarithmic Functions Quiz #5 – Thursday 10/11
10/16	4.4	NO CLASS ON TUESDAY 10/16 – Reading Day! Logarithmic and Exponential Equations ♦ Quiz #6 – Thursday 10/18
10/23	5.1 – 5.4	Simple Interest and Discount, Compound Interest, Annuities, Future Value, Sinking Funds, Present Value & Amortization • Quiz #7 – Thursday 10/25
10/30		Catch up, Review ◆ Exam #2 – Thursday 11/1
11/6	6.1 – 6.3	Systems of Two Linear Equations In Two Variables, Larger Systems of Linear Equations, Applications of Systems of Linear Equations • Quiz #8 – Thursday 11/8
11/13	6.4 - 6.6	 Basic Matrix Operations, Matrix Products and Inverses, Applications of Matrices Quiz #9 – Thursday 11/15
11/20	5.4	Catch up, Review • Quiz #10 – Tuesday 11/20 NO CLASSES THURSDAY 11/22 – Happy Thanksgiving!
11/27	7.1 – 7.3	Graphing Linear Inequalities in Two Variables, Linear Programming: The Graphical Method, Applications of Linear Programming Quiz #11 – Thursday 11/29
12/4		Catch up, Review ♦ Exam #3 – Thursday 12/6
12/11		Catch-Up, Review ◆ Quiz #12 – Tuesday 12/11 ◆ Final Exam – Thursday 12/13

GRADE TALLY:

	Value	Points Earned		
Quiz #1	20			
Quiz #2	20			
Quiz #3	20		-	
Quiz #4	20			
Quiz #5	20			
Quiz #6	20			Only count top 10 scores –
Quiz #7	20			total : 200 points
Quiz #8	20			
Quiz #9	20			
Quiz #10	20			
Quiz #11	20			
Quiz #12	20			
Bonus Quiz #1 (if applicable)	20			
Bonus Quiz #2 (if applicable)	20			
Exam #1	100			
Exam #2	100			
Exam #3	100			
Final Exam	100	Contact instructor for points earned		
Attendance & Participation	50	Contact instructor for points earned		