MAT* K254   **Calculus I**   **Fall 2017**

T1   MW 1:30 pm – 3:10 pm   D 224

T3   MW 10:30 am – 12:10 pm   D 211

INSTRUCTOR: Dr. Kelly Molkenthin (pronounced "molk-in-tine")
Office: C 234, 860-215-9455
Email: kmolkenthin@trcc.commnet.edu

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Office Hours: Mondays 12:15 pm – 1:15 pm
Tuesdays 3:30 pm – 4:30 pm
Wednesdays 9:15 am – 10:15 am
Thursdays 9:45 am – 10:45 am
and by appointment.

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REQUIRED MATERIAL:

• *Calculus: Early Transcendentals, 8th Edition*. Stewart. Cengage Learning, 2015.
ISBN # 9781285741550

• 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:

3 Exams:	300 points (100 each)
Weekly Quizzes:	200 points (20 each)
Final Exam	200 points
Attendance/Participation/Class Work	50 points
Total:	750 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 & PARTICIPATION: All students start the semester will 50 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.

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.

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 exams).***

Note: Class BEGINS at 10:30 am (T3) or 1:30 pm (T1).   It is expected that you will be in your seat and ready to go at 10:30 am (T3) or 1:30 pm (T1). Students arriving after 10:30 am (T3) or 1:30 pm (T1). will lose attendance points for that class. Excessive "lateness" will not be tolerated, it is disruptive to both the instructor and the class. Excessive lateness will result in classroom doors being locked at 10:30 am (T3) or 1:30 pm (T1). 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.

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 -- and very inappropriate. 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. It is presumptuous and rude for the student to tell the professor that class is over. 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?"

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 Edward A. Derr, the Diversity Officer and Title IX Coordinator:

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, www.trcc.commnet.edu. It is also suggested all students register for **The myCommnet Alert Notification System**. 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 http://my.commnet.edu/ and follow the link to myCommnet Alert. Please DO NOT email or call your instructor regarding weather delays/closings.

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* **8-12 hours per week** for this class, every week! Please have a separate binder for your homework, and BRING YOUR HOMEWORK BINDER TO EVERY CLASS MEETING.

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 13 quizzes throughout the semester, only your top 10 scores will count toward your final grade.

EXAMS: You will have three in-class exams and one two hour final exam. Exams are scheduled for the following dates:

- ♦ **Exam 1: Wednesday 10/04/17**
- ♦ **Exam 2: Wednesday 11/01/17**
- ♦ **Exam 3: Wednesday 12/06/17**
- ♦ **Final Exam: Monday 12/18/17**

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 and if **PREVIOUS** arrangements are made. You must contact the instructor **PRIOR** to the start of the exam in order for a make-up exam *to even be considered*. No exam will be administered prior to the date/time of the scheduled exam and **if you miss an exam, you will receive a grade of 0 (zero)**. Your final exam is a **2+ hour** final exam on Monday, 12/18.

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.

COURSE OBJECTIVES: This is a first course in the calculus sequence intended for students who plan on majoring in mathematics, physical sciences, or engineering technology. Topics include: rate of change, limits, continuity, differentiation of algebraic, trigonometric, exponential, and logarithmic functions, differentials, applications of differentiation, definite and indefinite integrals, and applications of integration.

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

1. Find the natural domain and range of the given function.
2. Compute the value of the function at the indicated value of x.
3. Know the classification of the functions, their basic properties and graphs.
4. Classify a function as even, odd, or neither.
5. Find the composite of two functions, and express a function as the composition of two or more functions.
6. Sketch the graphs of the functions using concepts of reflections and translations, intercepts.
7. Use vertical line test to identify whether the given graph is the graph of a function.
8. Find the limit of a function, using graph, table of values, or algebra. Find limits involving infinity.
9. Determine whether the given function is continuous or not, find and describe all points of discontinuity.
10. Know the Intermediate Value Theorem.
11. Use the definition of the derivative to differentiate a function. Understand graphical and physical meanings of the derivative.
12. Find whether the function is differentiable or not.
13. Use the techniques of differentiation, the Chain Rule to find first and higher derivatives of algebraic, trigonometric, inverse functions, exponential, and logarithmic functions.
14. Find the equation of the line tangent to the graph of a function at the specified point.
15. Solve the word problems on rate of change of the function.

16. Find the derivative of a function by implicit differentiation; apply it to related rate problems.
17. Find the derivative of a function by logarithmic differentiation.
18. Find the differential of a function. Find the linear approximation of a function.
19. Identify which of the given curves represents a function and which represents its first and second derivative. Sketch the graph of the derivative of a function defined by the graph.
20. Know the Mean value and Rolle's Theorem.
21. Use the first and second derivatives to find the shape of a graph, show where the function is increasing/decreasing, concave up/concave down; find the inflection points. Use the First and Second Derivative Tests to find relative extrema.
22. Sketch the graph of a function (show all critical points, inflections, asymptotes, etc.)
23. Find the absolute maximum and absolute minimum of a function on a given interval.
24. Solve optimization problems.
25. Find antiderivatives.
26. Know the definition of a definite integral, area and distance problems that lead to the definite integral.
27. Know the Fundamental Theorem of Calculus; recognize the differentiation and integration as two inverse processes.
28. Perform the indefinite and definite integration using basic integration rules, substitution method.
29. Find the average value of a function on a given interval.
30. Solve problems on applications of integration to geometry, physics, and engineering.

ACCOMMODATIONS: Students with learning disabilities should contact the Learning Specialist, Matt Liscum, at 860-215-9265 or via email at mliscum@trcc.commnet.edu as soon as possible to ensure timely accommodations. Students with physical disabilities should contact Elizabeth Willcox at 860-215-9289 or via email at ewillcox@trcc.commnet.edu 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.

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 is also 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. All cell phones must be completely out of sight for all quizzes and exams. Any visible cell phone during a quiz or exam will result in a 0 for that quiz or exam. If a 0 is received on a quiz due to a cell phone issue, that quiz will not be dropped and will count in your final grade.

DIGICATION: All students are required to maintain a learning portfolio in Digication that uses the (Three Rivers) College Template.

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!!. 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

Week of:	Chapter(s):	Topics Covered:
8/30		Review
9/4	2.1, 2.2	**NO CLASSES MONDAY 9/4 – Happy Labor Day!** The Tangent and Velocity Problems, The Limit of a Function ♦ **Quiz #1 – Wednesday 9/6**
9/11	2.3 - 2.5	Calculating Limits Using Limit Laws, The Precise Definition of a Limit, Continuity ♦ **Quiz #2 – Wednesday 9/13**
9/18	2.6, 2.7	Limits at Infinity; Horizontal Asymptotes, Derivatives and Rates of Change ♦ **Quiz #3 – Wednesday 9/20**
9/25	2.8, 3.1	Derivative as a Function, Review, Derivatives of Polynomials and Exponential Functions ♦ **Quiz #4 – Wednesday 9/27**
10/2	3.2	The Product and Quotient Rules ♦ **Exam #1 – Wednesday 10/4**
10/9	3.3 – 3.6	Derivatives of Trigonometric Functions, The Chain Rule, Implicit Differentiation, Derivatives of Logarithmic Functions ♦ **Quiz #5 – Wednesday 10/11**
10/16	3.7 - 3.10	Rates of Change in the Natural and Social Sciences, Exponential Growth and Decay, Related Rates, Linear Approximations and Differentials ♦ **Quiz #6 – Wednesday 10/18**
10/23	4.1 - 4.3	Maximum and Minimum Values, The Mean Value Theorem, How Derivatives Affect the Shape of a Graph ♦ **Quiz #7 – Wednesday 10/25**
10/30	4.4, 4.5	Indeterminate Forms and l'Hospital's Rule, Summary of Curve Sketching ♦ **Exam #2 – Wednesday 11/1**
11/6	4.7 - 4.9	Optimization Problems, Newton's Method, Antiderivatives ♦ **Quiz #8 – Wednesday 11/8**
11/13	5.1 – 5.3	Areas and Distances, The Definite Integral, The Fundamental Theorem of Calculus ♦ **Quiz #9 – Wednesday 11/15**
11/20	5.4	Indefinite Integrals **NO CLASSES WEDNESDAY 11/22 – Happy Thanksgiving!** ♦ **Quiz #10 – Monday 11/20**
11/27	5.5	The Substitution Rule ♦ **Quiz #11 – Wednesday 11/29**
12/4	6.1	Areas Between Curves ♦ **Exam #3 – Wednesday 12/6**
12/11		Catch-Up, review ♦ **Quiz #12 – Wednesday 12/13**
12/18		♦ **Final Exam – Monday 12/18**