MATH K254 **CALCULUS** **Fall 2017**

INSTRUCTOR: Joe Amarello (860) 383-9326 - (C)
(860) 437-2940 - (W)

PREREQUISITE: MATH 186, Precalculus

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

COURSE DESCRIPTION: 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

Grading: Quizzes, projects - 20%, 3 tests, each test – 20%, final exam – 20%.
Grade equivalents: A 93 – 100, A- 90 – 93, 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, F below 60.

Attendance: Attendance will be taken at each class. Your attendance record will be considered for borderline grades. I look forward to seeing you at each class.

Office Hours: I will be available to meet with students before and after class or by appointment as needed.

Email: joseph.m.amarello@dom.com

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

HOMEWORK: An assignment will be given at the end of each class. You are expected to have completed the assignment for the next class session. Questions on the homework will be discussed at the beginning of each class.

MyCommNet Alert: **MyCommNet** is a system that sends text messages and emails to anyone signed up in the event of a campus emergency. Additionally, TRCC sends messages when the college is delayed or closed due to weather. All students are encouraged to sign up for myCommNet Alert. A tutorial is available on the Educational Technology and Distance Learning Students page of the web site.
http://www.trcc.commnet.edu/div_it/educationaltechnology/Tutorials/myCommNetAlert/MIR3.html

MATH K254 **CALCULUS** **Fall 2017**

INSTRUCTOR: Joe Amarello (860) 383-9326 - (C)
(860) 437-2940 - (W)

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.

TRCC Disabilities Service Providers Counseling & Advising Office Room A-119	
Matt Liscum (860) 383-5240	• Physical Disabilities • Sensory Disabilities • Medical Disabilities • Mental Health Disabilities
Chris Scarborough (860) 892-5751	• Learning Disabilities • ADD/ADHD • Autism Spectrum

Digication: 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 learning 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 opportunities. If desired, students will have the option to create multiple portfolios

MATH K254 **CALCULUS** **Fall 2017**

INSTRUCTOR: Joe Amarello

(860) 383-9326 - (C)
(860) 437-2940 - (W)

COURSE CONTENT:

8/29	1.1 – 1.3	10/24	4.1, 4.2
8/31	1.4, 1.5	10/26	4.3, 4.4
9/5	2.1, 2.2	10/31	4.5, 4.6
9/7	2.3, 2.4	11/2	4.7, 4.8
9/12	2.5, 2.6	11/7	4.9
9/14	2.7, 2.8	11/9	Test 3
9/19	Test 1	11/14	5.1
9/21	Joe Vacation	11/16	5.2
9/26	3.1, 3.2	11/21	5.3
9/28	3.3, 3.4	11/28	5.4
10/3	3.5, 3.6	11/30	5.5
10/5	Joe Vacation	12/5	6.1
10/10	3.7, 3.8	12/7	Review
10/12	3.9, 3.10	12/14	Final Exam
10/17	No Classes		
10/19	Test 2		

MATH K254 **CALCULUS** **Fall 2017**

INSTRUCTOR: Joe Amarello (860) 383-9326 - (C)
(860) 437-2940 - (W)

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.

MATH K254 **CALCULUS** **Fall 2017**

INSTRUCTOR: Joe Amarello (860) 383-9326 - (C)
(860) 437-2940 - (W)

Homework Assignments

1.1	25, 27, 31, 33, 41, 43
1.2	5, 15, 19
1.3	9, 11, 15, 21, 31, 33, 35
1.4	1, 3, 11, 17, 19, 23, 25
1.5	1, 9, 21, 25, 35, 37, 51, 63, 65
2.1	1, 5, 7
2.2	1, 5, 7, 19, 31, 33, 35, 41
2.3	1, 3, 5, 11, 13, 21, 23, 31, 37, 39
2.4	None
2.5	3, 17, 19, 21, 23, 53, 55
2.6	3, 15, 17, 19, 21, 23, 31, 47, 49
2.7	1, 5, 7, 11, 13, 21, 27, 31
2.8	1, 3, 21, 23, 25, 27, 29, 41, 43, 47
3.1	3-27, 33, 37, 45, 55