THREE RIVERS COMMUNITY COLLEGE
Calculus 1
Spring 2011

Instructor: Henry Kopij
e-mail: hkopij@trcc.commnet.edu

Office Hours: by appointment

Text: Calculus, James Stewart, 6th Ed.

Course Name: Math 254
CRN: 11397

Course Description:
This course introduces functions, limits, continuity, derivatives of algebraic and transcendental functions, applications of differentiation and integration. The graphing calculator is used to illustrate concepts and applications of differentiation and integration.

Prerequisites:
Pre-Calculus (M186) or appropriate placement test score.

Required Materials:
A graphing calculator is required**.** TI-83 or TI-84 calculators are recommended for this course. You will be allowed to use a calculator to do homework assignments and on most tests.

Attendance:
Attendance is required for successful completion of the course. You are encouraged to participate in class and will be expected to come to class prepared to discuss any homework and/or projects that have been assigned.

Grading Criteria:
4-5 announced exams each worth 50% of final grade
Take home Assignments 10% of final grade (practice quizzes, exams, projects)
Final Exam worth 40% of final grade

Exams: Will be administered in class. **No make-up exams will be allowed unless there is an unavoidable situation that can be documented.** A student must contact the instructor on the day of the exam or earlier in order to be allowed to take a make up exam. A make-up test will be given at the end of the semester for a student to make up a missed exam. Students can also use this make-up test to replace their lowest grade. Any subsequent missed tests will result in a zero.

Extra Credit – No "extra credit" is given in this course.

Cell Phones:
Cell phones and beepers must be turned off during class and may not be used as a calculator. Students who ignore this policy will be asked to leave class. If there is an extenuating situation, the student must contact the instructor prior to class.

Disabilities Statement: If you have a visible or hidden disability that the instructor should be aware of please see me as soon as possible. Please register with Chris Scarborough if you have not done so.

Academic Integrity: You are encouraged to work collaboratively on homework assignments and on projects that are to be turned in provided that you can demonstrate that you understand any work that you submit. You must do your own work on any exams that are administered.

Important Dates:
Feb 2 – Last day to add/drop for partial refund
Feb 3 No Class in session
Feb 17 – Last day to select audit
March 13-19 Spring Break
Apr 7 – Last day to select Pass/Fail option
May 9 – Last day to withdraw from class
May 17 Make-up Supplemental Session/Instructor Discretion

GOOD LUCK

Math 254 CALCULUS I

Text: Calculus – James Stewart 6th edition

Homework problems are odd numbered examples.

Chapter	Section	Assignment
1	1.1	20: 1, 5, 7, 23-29, 35-43, 612-69
	1.3	43: 1, 3, 5, 11, 17, 29, 31, 33, 45
2	2.1	65: 5, 7
	2.2	75: 5, 7, 9, 15, 25, 29
	2.3	84: 11- 29
	2.4	105: 3, 15, 17, 37, 39
3	3.2	131: 1-11, 17, 19, 33, 35
	3.3	144: 1-19, 23-39, 53-59
	3.4	154: 1-15, 25
	3.5	161: 1-25, 29
	3.6	169: 5, 7, 11,
	3.7	179: 1
	3.8	187: 5, 9, 11, 15
	3.9	193: 1, 3, 11, 19, 33
4	4.1	211: 3, 5, 45, 47, 51
	4.2	219: 1, 3, 7, 11, 13
	4.3	227: 1, 5, 9, 11, 13, 23, 29, 35
	4.4	240: 3, 7, 9, 11, 13, 23, 33, 37, 43
	4.5	248: 1, 5, 9, 27, 35, 47
	4.7	262: 3, 5, 9, 13
	4.8	273: 6
	4.9	279 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 39, 51, 53
5	5.2	311: 17, 21, 33, 47, 49
	5.3	321: 7, 9, 19-33
	5.4	329: 5-13, 19-35
	5.5	338: 1-27, 35-43
6	6.1	352: 1-19
	6.2	362: 1-17
7	7.2	402: 31-41, 73-81
	7.4	419: 3,5,7, 17, 19, 69-75
		Final Exam

MAT254 Course Outcomes

1. Determine the limit at a point (from the left, from the right, and two sided) for functions presented in graphical form.
2. Estimate the limit at a point (from the left, from the right, and two sided) for functions presented in symbolic form using an appropriate table.
3. Determine the limit at a point (from the left, from the right, and two sided) for functions presented in symbolic form.
4. Estimate the limits at infinity (both positive and negative) for functions presented in graphical form.
5. Estimate the limits at infinity (both positive and negative) for functions presented in symbolic form using an appropriate table.
6. Determine the limits at infinity (both positive and negative) for functions presented in symbolic form.
7. Identify points of discontinuity for functions presented in graphical and symbolic form.
8. Identify intervals of continuity for functions presented in graphical and symbolic form.

9. Find average velocities for objects whose position functions are presented in graphical, tabular, and symbolic form.
10. Estimate instantaneous velocities for objects whose position functions are presented in graphical, tabular, and symbolic form.
11. Find average accelerations for objects whose position functions and velocity functions are presented in graphical, tabular, and symbolic form.
12. Estimate instantaneous accelerations for objects whose position functions and velocity functions are presented in graphical, tabular, and symbolic form.
13. Estimate derivative values for functions presented in graphical , tabular, and symbolic form.
14. Sketch the graph of the derivative for functions presented in graphical form.
15. Use the formal definition of the derivative to find derivative values.
16. Find the units for, and interpret the meaning of, derivative values for applied functions presented in graphical, tabular, symbolic, and written form.
17. Identify points of nondifferentiability for functions presented in graphical form.
18. Identify the concavity and points of inflection for functions presented in graphical form.
19. Determine the shape of a function from numerical and
20. graphical information about that function’s first and second derivatives.

21. Utilize the rules of differentiation for power, exponential, logarithmic, and trigonometric functions.
22. Differentiate the sum, difference, product, and/or quotient of two or more functions.
23. Differentiate a composite function.
24. Differentiate implicit functions.
25. Solve applications involving related rates.

26. Find the critical numbers for a function.
27. Use the First Derivative Test to identify intervals where the function is increasing and decreasing and to identify maxima and minima.
28. Use the Concavity Test to identify intervals where the function is concave up or concave down, and identify points of inflection.
29. Graph a function by hand after identifying the increasing/decreasing behavior, concavity, asymptotes and intercepts

30. Evaluate indefinite and definite integrals of elementary functions, including selected trigonometric functions
31. Evaluate indefinite and definite integrals by substitution.
32. Integrate natural and general exponential functions.,
33. Integrate functions whose anti-derivatives involve logarithms
34. Integrate functions whose anti-derivatives involve inverse trigonometric functions.
35. State the basic properties of the definite integral
36. Apply the fundamental theorem of calculus.
37. Find the area of a region bounded by a curve using n-rectangles and limits
38. Find the area of a region bounded by a curve using indefinite integrals.