Larisa Alikhanova
Spring 2011
Calculus II, 10412, Mat K256, W 5:30 pm – 9:00 pm, room E204

Pre-requisite: Calculus I, MAT 254

Text: Calculus by James Stewart, 6E

Course Description: The course is continuation of Calculus I. The topics include: areas, volumes,transcendental functions, techniques of integration, applications of integration, parametric equations and polar coordinates, vectors and operations on vectors, sequences and series

Measurements: Quizzes, projects - 15%, each test – 20%, and final exam - 25%. 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: It is very important that you attend **ALL** classes. Your attendance in the classroom, participation in classroom work /projects and preparation for each class is required and is essential to your success in the course. If you cannot attend the class for a period of time, please contact me so we can make the arrangements for makeup work.

Support Services: Tutorial services. Meeting with me for an extra help.

Office Hours: M and W, 3:30 p.m. – 5:30 p.m. **Room C104**
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Class Cancellation: 1.In case of increment weather, check the college website for class Cancellations call 860-886-0177 for recorded message on the college phone. If the college **is not closed**, please check my voice mail by calling 860-885-2375 to listen to my announcement regarding the class cancellation or check the notice on Blackboard course shell because I may not be able to commute on that day.

2. At the start of the semester we'll establish a class phone tree to Enable us to contact one another in case of class cancellation for a reason other than a full college closing.

Plagiarism and Academic Honesty: At TRCC, we expect the highest standards of academic honesty. The Board of Trustees' Proscribed Conduct Policy prohibits cheating on examinations, unauthorized collaboration on assignments, unauthorized access to examinations or course materials, plagiarism.

Disabilities Statement: Students with disabilities, who may require special accommodations and support services, are encouraged to notify:

1. Chris Scarborough, who is coordinating services to students with disabilities.
2. The instructor during the first two weeks of class.

Course Outline, Schedule, Homework (Odd numbers. This is a guide only. Assignments may vary).

Section	Topic	Exercises
Ch. 5, 7	1/26/11 – 2/02/11	
5.1	Areas (review)	298/5
5.2	The definite Integral (review)	310/5,17-19,33,47, 49
5.3	The Fundamental Theorem of Calculus (review)	321/19 – 35, 69 - 73
5.4	Indefinite Integrals (review)	329/5 15, 19 - 41
5.5	The Substitution Rule (review)	339/7 – 27, 35 – 43
7.2	Exponential Functions, their derivatives	402/ 31 - 41, 73 - 81
7.4	Derivatives of Logarithmic Functions	419/3,5,7,17,19, 69 - 75
7.8	Indeterminate Forms and L'Hospital's Rule	478/5 – 21, 47, 49, 55
Ch. 6	2/02/11 – 2/16/11	
6.1	Areas Between Curves	352/5 – 25, 53, 55
6.2	Volumes	362/1 – 17
6.3	Volumes by cylindrical shelves	368/3 – 13, 15 – 19
6.4	Work	373/3, 5, 7, 15
6.5	Average value of the function	377/1, 3
	TEST 2/23/11	
Ch. 8	2/23/11 – 3/09/11	
8.1	Integration by parts	493/1 – 13, 33
8.2	Trigonometric Integrals	501/1 – 29
8.3	Trigonometric Substitution	508/1 - 13
8.4	Integration by Partial Fractions	517/7 – 23
8.6	Table of Integrals	529/5, 7, 17
8.7	Approximate Integration	541/8
8.8	Improper integrals	551/1, 5, 13, 21, 27,31
	TEST 3/09/11	
Ch. 10,11	3/23/11 – 4/06/11	
10.1	Differential Equations	607/1, 3, 5
10.3	Separable Equations	622/ 1 – 7, 11 – 15
11.1	Parametric Curves	662/1 – 13, 19
11.2	Calculus with parametric curves	672/1-7, 11,17,31,33
11.3	Polar Coordinates	683/1-5, 7-11, 15, 17, 21
11.4	Areas and Lengths in Polar Coordinates	689/1-9
Ch.12	4/06/11 – 4/27/11	
12.1	Sequences	720/3, 59, 13, 17 - 33
12.2	Series	730/3, 11 – 17, 21, 25, 35
12.3	The integral test	739/3 -9, 15, 21
12.4	The Comparison Tests	745/3, 7, 9
12.8	Power Series	763/3 – 15
12.9	Representations of functions as Power Series	769/ 3 – 7, 11, 15
12.10	Taylor and Maclaurin series	782/5, 7, 9, 15
	TEST 4/27/11	

Ch. 13	5/04/11 – 5/11/11	
13.1	Three Dimensional Coordinate System	805/1, 3, 13
13.2	Vectors	813/5-9, 13-17, 21
13.3	The Dot Product	820/3, 5, 9, 15
13.4	The Cross Product	828/1, 3, 5, 15

FINAL EXAM 5/18/11

Course Objectives:
Student should be able to:

1. Integrate the functions using substitution, integration by parts, the method of partial fractions, trigonometric substitutions, tables
2. Perform approximate integration
3. Show that the improper integral converges and find its value, or show that it diverges
4. Find the area bounded by the curves.
5. Find the volumes of revolution: disks, washers, and cylindrical shells.
6. Use integration on varies applications to physics and engineering
7. Find general and particular solution of separable differential equations
8. Determine whether the sequence is convergent or divergent, and find the limit of the convergent sequences.
9. Determine whether the geometric series converges or diverges, and find the sum of each convergent series.
10. Use divergence test, limit comparison test, Integral test, ratio test and direct comparison test to determine whether the series is convergent or divergent.
11. Represent functions as power series, Taylor and Maclaurin series
12. Plot polar-form points.
13. Convert from polar to rectangular coordinates and from rectangular coordinates to polar
14. Find areas and lengths in polar coordinates
15. Graph in polar coordinates.
16. Find the derivative of equations of curves defined by parametric equations.
17. Find the area of a region bounded by curves defined by parametric equations.
18. Perform operations on vectors.
19. Find the standard representative of a vector.
20. Compute a resultant vector.
21. Find the dot and the cross product of two vectors.