Larisa Alikhanova
Spring 2012
Calculus II, 10412, Mat K256, W 5:30 pm – 9:00 pm, room E204

Pre-requisite: Calculus I, MAT 254

Text: Calculus, Early Transcendentals by James Stewart, 7E

Course Description: The course is continuation of Calculus I. The topics include: areas, volumes,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**
E-mail lalikhanova@trcc.commnet.edu

Class Cancellation: 1.In case of increment weather, check the college website for class Cancellations or call 860-886-0177 for recorded message on the college phone.
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 and schedules may vary).

Section	Topic	Exercises
Ch. 5 (Rev.)	1/25/12	
5.2	The definite Integral	382/5, 17-19, 33, 47, 49
5.3	The Fundamental Theorem of Calculus	394/19 – 37
5.4	Indefinite Integrals	403/5 - 15, 19 - 39
5.5	The Substitution Rule	413/7 – 35
Ch. 6	2/01/12 – 2/15/12	
6.1	Areas Between Curves	427/1 – 27
6.2	Volumes	438/1 – 17
6.3	Volumes by cylindrical shelves	444/1 – 13, 15 – 25
6.4	Work	449/3, 5, 7, 15
6.5	Average value of the function	453/ 3, 5
	TEST 02/15/12	
Ch. 7	2/22/12 – 3/07/12	
7.1	Integration by parts	468/1 – 13, 17, 19, 37
7.2	Trigonometric Integrals	476/1 – 11, 15, 19, 21 - 25
7.3	Trigonometric Substitution	483/1 - 13
7.4	Integration by Partial Fractions	492/7 – 23
7.6	Table of Integrals	504/5, 7, 17
7.7	Approximate Integration	516/8
4.4	Indeterminate Forms and L'Hospital's Rule	307/7 – 25
7.8	Improper integrals	527/1, 5, 13, 21, 27,31
	TEST 03/14/2012	
Ch. 9, 10	03/14/12 – 03/28/12	
9.1	Differential Equations	584/1, 3, 5
9.3	Separable Equations	600/ 1 – 7, 11 – 15, 39
10.1	Parametric Curves	641/1 – 15, 19
10.2	Calculus with parametric curves	651/1-7, 11,13, 17,31,33
10.3	Polar Coordinates	662/1-5, 7-11, 15 - 25
10.4	Areas and Lengths in Polar Coordinates	668/1- 13
Ch.11	04/04/12 – 04/11/12	
11.1	Sequences	700/3 - 11,13 – 17,23 - 41
11.2	Series	711/3,5, 17 - 23, 27 - 31,43
11.3	The integral test	720/3 - 7,9 - 17
11.4	The Comparison Tests	726/3, 7, 9, 15
11.8	Power Series	745/3, 7, 9
11.9	Representations of functions as Power Series	751/3 – 7, 11, 15
11.10	Taylor and Maclaurin series	765/5, 7, 9, 15
	TEST 04/18/12	
Ch. 12	4/25/12 – 5/02/12	
12.1	Three Dimensional Coordinate System	790/1, 3, 7, 9
12.2	Vectors	798/5 - 9, 19 - 21, 23
12.3	The Dot Product	806/3, 5, 9, 15
12.4	The Cross Product	814/1, 3, 5, 15

FINAL EXAM 05/09/12

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.