Calculus II, Spring 2014, 12648, Mat K256, M,W 1:00 pm – 2:40 pm, room D210
Professor Larisa Alikhanova

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, N if the student completed less than 60% of work

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.

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

Office Hours: M, W 3:00 p.m. - 5:00 p.m. **Room C104**

E-mail lalikhanova@trcc.commnet.edu

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.

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.

Alert System: MyCommNet Alert 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(see the link below).

http://www.trcc.commnet.edu/div_it/educationaltechnology/Tutorials/myCommNetAlert/MIR3.html

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) 215-9265	• Physical Disabilities • Sensory Disabilities • Medical Disabilities • Mental Health Disabilities
Chris Scarborough (860) 215-9289	• Learning Disabilities • ADD/ADHD • Autism Spectrum

Digication Statement: 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

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

Section	Topic	Exercises
Ch. 5 (Rev.)	**1**/27/14 - 2/12/14	
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**/17/14 – 2/26/14	
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 2/26/14	
Ch. 7	**3**/03/14 – 3/26/14	
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 3/26/2014	
Ch. 9, 10	**3**/31/14 – 4/16/14	
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, 55 - 61
10.4	Areas and Lengths in Polar Coordinates	668/1- 13
Ch.11	**4/**16/14 – 4/30/14	
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 4/23/14	

Ch. 12　　5/07/14 - 5/12/14
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 5/14/14

Course Objectives.

Upon completion of the course, 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.