Course Syllabus MTH 229(CT) Section 204 Spring 2017

Course Title:	Calculus/Analytic Geometry I (CT)
Course Number:	MTH 229 -- Section 204 -- CRN 4138 -- Credit: 5 Hours
Textbook:	Calculus, Early Transcendental by Rogawski and Adams, Third Edition
Sections Covered:	1.1-1.6, 2.1-2.9, 3.1-3.10, 4.1-4.8, 5.1-5.5, 5.7, 5.8
Course Description:	An introduction to analytic geometry. Limits, derivatives, and integrals of the elementaryfunctions, functions of one variable, including the transcendental functions.
Calculator:	TI-83 or higher, graphing calculators may not be allowed for some problems in exams.
Core Credits	This course fulfills a Core I CT requirement (Mathematical & Abstract Thinking, Information and Technical Literacy, and Oral, Written, and Visual Communication) and a Core II Math requirement.
Prerequisites:	ACT Math 27 or SAT Math 610 or MTH 132 "C" or higher
Meeting Time:	MTWRF: 2:00 – 2:50 PM
Classroom:	SH 513
Instructor:	Dr. Basant Karna
Office:	Smith Hall 715
Office Hours:	10:00-10:50 AM MTWRF, others by appointment
Phone/Email:	Phone: (304) 696-4332, Email: karna@marshall.edu
Webpage:	http://www.science.marshall.edu/karna/
Course Goals	1. To give students an understanding of the fundamental concepts of calculus and an appreciation of its many applications. 2. To develop critical thinking skills by asking students to convert real-world problems into forms suitable for calculus, and interpret the results of calculus in real-world problems. 3. To provide students with a deeper understanding of the mathematics that is used in their science and engineering courses. 4. To develop facility in using graphing calculators to solve mathematics problems. 5. To satisfy program requirements.
Course Objectives:	1. Students should be able to evaluate limits, derivatives, and integrals symbolically. 2. Students should be able to approximate limits, derivatives, and definite integrals from tabular and graphical data. 3. Students should be familiar with the definitions of limits, derivatives, and integrals; be able to apply these definitions to test properties of these concepts; and be able to produce verbal arguments and examples showing that basic properties hold or do not hold. 4. Students should be able to apply the techniques of calculus to answer questions about the analytic geometry of functions, including vertical and horizontal asymptotes, tangent lines, local extrema, and global extrema. 5. Students should be able to verbally explain the meaning of limits, derivatives, and integrals in their own words, both in general terms and in the context of specific problems.

Course Student Learning Outcomes	How student achievement of each outcome will be assessed
Students will have an understanding of the fundamental concepts of calculus and an appreciation of its many applications.	Homework, Board work, Quizzes, exams and final
Develop critical thinking skills by asking students to convert real-world problems into forms suitable for calculus, and interpret the results of calculus in real-world problems.	Homework, Board work, Quizzes, exams and final
A deeper understanding of the mathematics that is used in their science and engineering courses.	Homework, Board work, Quizzes, exams and final
Students will develop facility in using graphing calculators to solve mathematics problems.	Homework, Board work, Quizzes, exams and final
Reasoning: Calculus is a collection of reasoning techniques that allows one to understand how changing quantities behave. This understanding is fundamental to progress in science and engineering. Students will use mathematical reasoning in their study of calculus concepts to verify properties of the concepts they study, and they will use scientific reasoning to determine whether possible solutions are reasonable for a given situation.	Homework, Board work, Quizzes, exams and final
Representations: Students will work with information specified in verbal, graphical, tabular, and symbolic forms. Many problems will require students to take information in one of these forms, analyze it, and create a solution in a different form. Students will be required to produce verbal explanations of the meanings of mathematical concepts, both in general and in the context of specific problems.	Homework, Board work, Quizzes, exams and final
Information literacy: To solve the applied problems in this course, students must determine which information in the problem is relevant to the solution, access this information and use it to obtain a mathematical solution, and then translate the mathematical solution back into the language of the original problem.	Homework, Board work, Quizzes, exams and final

Course Contents:	- Review of college algebra - Limits of functions of one variables - Derivatives of functions of one variable - Applications of Derivatives - Integrals of functions of one variables
Attendance Policy:	Attendance is required and you must come with your text. Attendance will be taken every class day either by sign-in-sheet or by quiz. Having more than **25%** absences may result in a course grade of **F**! Absences which can be excused include illness, emergencies, or participation in another university activity. Excused absences must be approved by the office of the dean of students.
Grading Policy:	A. *Quizzes*: Throughout the semester, there will be 12 quizzes given during the last 15 minutes of the class on Fridays. Problems in quizzes will be given from assigned homework problems (textbook will not be allowed). Two lowest quizzes scores will be dropped. B. *Exams*: There will be 3 exams given in class during the semester. C. *Homework Problems*: Homework problems will be assigned and collected. You are responsible for reading the text, working the exercises, coming to office hours for help when you're stuck, and being aware of the dates for the major exams. D. *Final Exam*: There will be a two-hour final exam on May 1, 2017.

Points Distribution:	Attendance and Project 35 Pts 5 Homework Assignments 50 Pts Quizzes(10) 100 Pts 3 Exams 300 Pts Final Exam 115 Pts --- Total Pts: 600 Pts
Grades	The semester grade will be based on the percentage of the 600 total possible points, using the following scale. A: 90 -100 % , B: 80 - 89 %, C: 70 - 79 %, D: 60 - 69 %, F: 0 - 59 % Note: The class score will be posted on MUOnline.
Make-ups:	A. Quizzes: For unavoidable missed quizzes with valid documentation, I will give you make up quiz within a week of the original quiz date (two quizzes). B. *Exams*: Making up a missed exam is possible only if you receive prior permission from me and only for serious and unavoidable circumstances. Make-ups must be taken within a week of the original exam date. You can't make up a make-up exam. C. *Final*: If you don't take final exam, you will receive an "F" for the class.
Exam Dates	Exam 1 –Feb 10, Exam 2 – March 10, Exam 3 – April 14 (Fridays) Quizzes: Q1-J13, Q2-J20, Q3-J27, Q4-F3, Q5-F17, Q6-F24, Q7-M3, Q8-M17, Q9-M31, Q10-A7, Q11-A21, Q12-A28 (Fridays) Final Exam: May 1 @ **12:45** AM(Monday)
Important Dates:	• January 16, Monday – MLK, Jr. Holiday – No Class • January 17, Tuesday – "W" Withdrawal period begins • March 17, Friday – Last day to drop • March 20, Monday – March 25, Saturday – Spring Break- No Class • April 28, Friday – Last class day
Disruptive Actions:	If your actions become disruptive or distracting for me or another student, you will be asked to cease your behavior. If you choose to continue, you will be asked to leave. Disruptive behavior may include, but are not limited to the following: cell phone use in class, talking during class, and the use of iPods or MP3 players during class. These will count as unexcused absences.
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to http://www.marshall.edu/academic-affairs/policies/ Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment
Free Tutoring:	Free tutoring in Smith Music Hall 115 (10:00-4:00 PM Monday to Thursday and 10:00 to Noon on Friday) and in Smith Hall 620 (5:00 PM-6:30 PM Monday to Thursday).
Disable Students:	The Disabled Student Services web site is now available. You may visit it at http://www.marshall.edu/disabled . Students seeking special accommodations need to follow the university policy detailed at this web site. It is their responsibility to initiate the process for receiving accommodations based upon their disability. If you have any questions or comments, please contact Sandra Clements, the Director of Disabled Student Services.
Coming Late:	Students should come on time and stay in the class for entire class. If you are late by more than 5 minutes, you will be considered to be absent.
Project	You are required to upload a project to MUOnline by the end of semester.

Homework Problems

---------- HW 1 ----------
Section 1.1: 4, 8, 11, 16, 20, 23, 25, 36(a), 37, 44, 55, 59, 65, 66, 68, 74
Section 1.2: 3, 7, 9, 11, 15, 19, 23, 37
Section 1.3: 1, 12, 13-17, 27, 33, 35
Section 1.4: 15, 16, 19, 22, 51
Section 1.5: 2, 48, 10, 27-32, 35-37, 43, 47
Section 1.6: 2, 5, 8, 11-21, 27, 29, 31, 35, 36
Section 2.1: 1, 6, 11, 25
Section 2.2: 1, 3, 6, 9, **17**, **19**, **25**, 29, **41**, **47**, 51, 53, 55, 57
Section 2.3: 7, **11**, 19, **26**, 30
Section 2.4:**1**, **2, 3 4**, **5**, 6, 9, 12, **17**, **23**, 27, 29, **49**, **51**, **57**, 69, **79**
Section 2.5: **5-34** (odds), 37, **42**, 51, 54
Section 2.6: 2, **3**, 4, **7**, 11, **17**, 19, **21**, 23, **27**, 30, **33**, 36, **40**, 45, 51
Section 2.7: **1**, **2**, 4, **7-29** (odds), 35
---------- HW 2 ----------
Section 2.8: **1**, 3, **7**, 11, **14**, 17, **18**, 25
Section 3.1: **3**, 5, **13-16**, 17, 21, **29**, 33, 37, 41, **53**, 55
Section 3.2: 1, **5**, 7, 15, **17**, 20, 23, 27, **32**, 35, **43**, **49**, 66, 70
Section 3.3: 2, **3**, 7, **11**, 18, **23**, 27, 32, **33**, **39-42**, 50
Section 3.4: 1, 3, 5, 7, 11, 22, 27
Section 3.5: **3**, 7, 9, **14**, 19, **25**, 28, 29, 39, 40
---------- HW 3 ----------
Section 3.6: 1, 3, **5**, 7, **11**, 13, 17, 23, **24**, 29, 39, 43, 44
Section 3.7, 5, **7**, 9, 11, **13**, 15, **17**, **19**, 22, 24, 27, 29, **33**, 37, 39, **43**, **50**, 51, 58, 67, 87-90
Section 3.8: 3, **6**, **9**, **11**, 15, 17, **19**, **21**, 23, 25,**31**, **33**, **37**, 41, 51, 53, **57**, 64, 71,
Section 3.9: 1, **3**, 5, 7, **8**, 9, 11, 13, **17**, 20, 21, **25**, 29, 39, **43**, 44, **45**, 46, **47**, **49**
Section 3.10: 1, 2, **3**, 4, 5, **6**, **7**, 8, **9**, 10, **11**, 12, **13**, **14**, 15, **16**, 17 (from Handout)**5**,**9**, **13**, **17**, **21**, **25**, 39
Chapter Review (p190): 29-75 (all Odds), 95, 97, 99, 101, 103, 109, 111
---------- HW 4 ----------
Section 5.1: **7**, **11**,**13**, **20**, 24, 27, **29**, 35, 39, **48**
Section 5.2: 1, 7, 20, **39**, 51, **65**, 76
Section 5.3: 3, **5**, 7, 9, **15**, 19, 22, **26**, 30, 33, **36**, 41, **47**, **53**, 57, 61, **63**, 65, 68, 72, **77**
Section 5.4: 5, **7**, 13, 20, **25**, 31, 35, **42**, 43, 49, **54**, 55
Section 5.5: **4**, 6, **7**, 9, 11, **16**, 17, **19**, 21, 23, **28**, **32**, 33
---------- HW 5 ----------
Section 5.7: 1, 3, 5, **7**, 11, 12, **15**, 17, 18, **23**, 25, **29-74** (odds), **81**, 83, 93
Section 4.1: 1, **9**, **13**, 17, **20**, 24
Section 4.2: **3**, 7, 10, 13, **29**, **33**, 37, 41, 45, 51, **56**, **65**, 69
Section 4.3: **1**, 5, **17**, **18**, **19**, 20, 23, 24, **27**, **29**, 35, 41, 49, 52
Section 4.4: **1**, 2, **3**, 6, 9, **13**, 24, **27**, 31, 33, 37, **41**, 45, 53, **59**
---------- HW 6 ----------
Section 4.5: 1, **3**, 6, **9**, 11, **13**, 15, 16, **17**, 19, 21, **27**, 28, **35**, 41, **48**, **49**, **50**
Section 4.6: **1**, 2, 3, **7**, **15**, 19, **21**, 23, 31, 38, 43, 51, **52**, 53, **55**, 61
Section 4.7: 1, **2**, 3, **4**, 5, 6, **7**, **8**, **9**, **10**, **11**, 12, **13**, **14**, **15**, 16 (from Handout), **1**, **2**, **6**, 11, **13**, **19**, **23**, 27
Section 4.8: 3, 7, 9, 11, 15

Turn in at least boldface problems.
Due dates are Mondays after the Sections are covered.