Course Syllabus MTH 229(CT) Section 102 Fall 2018

Course Title:	Calculus/Analytic Geometry I (CT)
Course Number:	MTH 229 -- Section 102 -- CRN 3032 -- Credit: 5 Hours
Textbook:	Calculus, Early Transcendental by Stewart, Eighth Edition
Sections Covered:	1.1-1.5, 2.1-2.8, 3.1-3.10, 4.1-4.9, 5.1-5.5
Course Description:	An introduction to analytic geometry. Limits, derivatives, and integrals of the elementary functions, 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: 10:00 – 10:50 AM
Classroom:	SH 511
Instructor:	Dr. Basant Karna
Office:	Smith Hall 715
Office Hours:	MTWRF: 9:00-10:00 AM, 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, Class 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, Class work, Quizzes, exams and final
A deeper understanding of the mathematics that is used in their science and engineering courses.	Homework, Class work, Quizzes, exams and final
Students will develop facility in using graphing calculators to solve mathematics problems.	Homework, Class 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, Class 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, Class 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, Class 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 4 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). 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 December 10 (Monday) at 10:15 AM.

Points Distribution:	Attendance 25 Pts 5 Homework/Class work Assignments 25 Pts Quizzes/Artifacts Upload 50 Pts 3 Exams 300 Pts Final Exam 100 Pts --- Total Points: 500 Pts
Grades	The semester grade will be based on the percentage of the 500 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: http://www.marshall.edu/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. 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. C. *Final*: If you don't take final exam, you will receive an "F" for the class.
Exam Dates	Exam 1 – Sep 21, Exam 2 – Oct 19, Exam 3 – Nov 16 (Fridays) Quizzes: Q1-Aug 31, Q2-Sep 14, Q3-Oct 5, Q4-Nov 2 (Fridays) Final Exam: December 10 @ **10:15 AM**(Monday)
Important Dates:	▪ August 27, Monday – "W" Withdrawal period begins ▪ September 3, Monday – Labor Day – No Class ▪ October 26, Friday – Last day to drop ▪ November 19, Monday – November 24, Saturday – Thanksgiving Break ▪ December 7, 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 Hall 625 (10:00 - 4:00 PM, 5:00 - 6:30 PM from Monday to Thursday and 10:00 – 12:00 PM on Friday).
Disable Students:	For University policies and the procedures for obtaining services, please go to MU Academic Affairs: University Policies and read the section, **Students with Disabilities**. http://www.marshall.edu/academic-affairs/policies/
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.
Artifact Upload:	You are required to upload an artifact to MUOnline. It will be assigned by November 16. Submission due date: December 3 (Monday)

General Homework Problems

Section 1.1: 1, 2, 3, 4, 7-10,25, 27, 28, 33, 36, 37, 40, 41, 44, 45, 49,51, 55, 57, 59, 63, 73, 74, 78
Section 1.2: 1, 2, 3, 10, 11, 17, 21, 22
Section 1.3: 1, 3, 4, 11, 12, 17, 31, 33, 35, 37, 39, 43, 44, 53
Section 1.4: 3, 4, 7, 9, 11, 13, 17, 18, 19, 21
Section 1.5: 5, 6, 7, 9, 11, 15, 18, 22, 35, 37, 39,51, 53, 63, 64
Section 2.1: 1, 3, 5, 8
Section 2.2: 1, 4, 6, 9, 11, 15, 17, 19, 21, 25, 26, 31, 32, 33, 41
Section 2.3: 1, 2, 3, 5, 11, 12, 13, 14, 16, 17, 18, 20, 21, 23, 27, 31, 38, 41, 44
Section 2.5: 3, 4, 5, 7, 11, 17, 19, 20, 22, 25, 35, 39, 41, 45
Section 2.6: 3, 4, 5, 7, 9, 10, 11, 13, 15, 17, 19, 23, 25, 27, 29, 37, 39, 47, 49, 51
Section 2.7: 1, 3(a,b), 5, 6, 7, 9, 13, 17, 20, 21, 23, 24, 25, 27, 31, 33, 35, 37, 39, 59, 60
Section 2.8: 1, 3, 4, 5, 7, 9, 10, 16, 21, 25, 26, 29, 41 - 44, 47
Section 3.1: 3, 5, 8, 11, 13, 17, 23, 29, 33, 35, 37, 39, 41, 47, 51, 55, 58, 61
Section 3.2: 3, 5, 6, 7, 9, 13, 17, 21, 23, 27, 29, 31, 33, 41- 45, 49, 51
Section 3.3: 1, 2, 5, 10, 13, 15, 16, 21, 22, 25, 39 - 50
Section 3.4: 1,2,4,6,7,9,11,13,17,19,21,22,25,28,29,30,32,33,35,37,38,39,40,41,45,50,53,54,61,71
Section 3.5: 1, 2, 3, 5, 7, 9, 10, 12, 13, 15, 17, 18, 19, 21, 23, 24, 27, 30, 35, 37,49,51, 53, 55, 60
Section 3.6: 2, 3, 4, 7, 8, 9, 11, 14, 15, 19, 21, 23, 25, 28, 29, 31, 33, 39, 41, 43-48, 51
Section 3.7: 1, 2, 5, 6, 7, 8, 10, 16(b), 23(a)
Section 3.8: 1, 3, 4, 9, 13 (optional)
Section 3.9: 2, 3, 4, 5, 6, 7, 10, 13- 16, 17, 18, 19, 23, 30, 31, 33, 41
Section 3.10: 1, 3, 11, 13, 17, 18, 19, 21, 23, 25, 27
Section 4.9: 1, 3, 5, 7, 11, 13, 19, 21, 23, 25, 26, 27, 29, 32, 35, 39, 41, 43, 48, 51, 59, 61, 64
Section 5.1: 2, 3, 5, 21, 23, 24
Section 5.2: 1, 4, 9, 17, 18, 21, 23, 33, 34, 35, 51, 52, 53, 60
Section 5.3: 3, 7, 9, 11, 12, 13, 15, 19, 23, 25, 27, 29, 32, 37, 38, 53, 73
Section 5.4: 1, 3, 5, 7, 9, 13, 15, 18, 21, 23, 25, 27, 32, 36, 37, 38
Section 5.5: 1, 3, 5, 7, 9, 12, 13, 15, 18, 21, 23, 25, 30, 32, 35, 38, 39, 42, 45, 57, 59, 67, 69
Section 4.1: 3-6, 7,9, 11, 14, 15, 19, 29, 30, 31, 33, 38, 43, 47, 49, 50, 53, 57, 61
Section 4.2: 1, 3, 5, 6, 9, 11, 12, 13, 17
Section 4.3: 1, 2, 5, 8, 9 - 14, 19, 20, 22, 25, 26, 27, 30, 31, 32, 35, 36, 37, 39, 41, 45, 47
Section 4.4: 1, 3, 5, 8, 9, 12, 13, 15, 17, 18, 20, 22, 23, 27, 30, 31, 46, 51, 53, 57
Section 4.5: 1, 2, 3, 4, 5, 6, 9, 11, 13, 18, 27, 37, 45, 49
Section 4.7: 2, 3, 4, 7, 8, 11, 12, 13, 14, 15, 16, 17, 21, 37

Exam Dates

Exam 1 (September 21-Friday), will cover the sections(tentative)
Sections 1.1, 1.3, 1.4, 1.5, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8
Exam 2 (October 19-Friday), will cover the sections(tentative)
Sections 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.9, 3.10
Exam 3 (November 16-Friday), will cover the sections(tentative)
Sections 4.9, 5.3, 5.4, 5.5, 4.1, 4.2, 4.3, 4.4, 4.5
Final (December 10-Monday) @ 10:15 AM in Room SH 511, will cover the sections (tentative)
Sections 2.2, 2.3, 2.6, 3.3, 3.4, 3.5, 3.6, 3.9, 4.4, 4.5, 4.7, 4.9, 5.4, 5.5