MAT 113: CALCULUS CONCEPTS I
ANDERSON UNIVERSITY (SC)
SYLLABUS

I. COURSE INFORMATION

MAT 113 – CALCULUS CONCEPTS I – 3 Credit Hrs.
PREREQUISITE: MAT 101/MAT 106 or score of 500 or above on math SAT.

COURSE DESCRIPTION: An Intuitive Approach to Differential Calculus - Designed for students seeking degrees in business, non-math and science secondary education, and related areas. Topics include functions, data models, derivatives and their applications including curve sketching, optimization, and indefinite and definite integrals.

***Class Meeting Time and Place*:** Online

First day of classes: See Syllabus on Canvas.
Last Day of Classes: See Syllabus on Canvas.
Last Day to drop with no grade – See Syllabus on Canvas.
Last Day to drop with grade of "W" – See Syllabus on Canvas.

II. INSTRUCTOR INFORMATION

Name: See Canvas

Phone Numbers: See Canvas

E-mail: See Canvas

III. COURSE PURPOSE, GOALS, AND SPECIFIC LEARNING OBJECTIVES/OUTCOMES

Purpose: The purpose of Math 113 is to incorporate calculus concepts and topics that are relevant and useful in non-scientific careers and to provide experience with mathematical modeling using real data.

Goals: Students should use the critical thinking skills of evaluation, synthesis, and analysis as they interact with the mathematics through the use of a graphics calculator to solve problems involving calculus and algebra skills. Students should recognize different types of problems and associate the appropriate problem-solving procedure with each type. Students should develop an understanding of the symbols and terminology of differential calculus and learn to appreciate the calculus methods covered as useful tools in the business world. A major goal of this course is to develop conceptual understanding rather than mastery of algebraic technique. To accomplish this goal, material will be presented that is data driven and technology based.

MAT 113 has the following learning outcomes:

Upon successful completion of the course, the student should be able to exhibit:

1. Understanding of the terminology of differential calculus and the business/economics terminology by applying this to calculus problems
2. The skills necessary to calculate derivatives
3. The ability to apply his/her knowledge of derivatives to a variety of business related problems Including optimization and marginal profit, cost, and revenue.
4. An understanding of anti-derivative as reverse of differentiation.
5. Relating anti-derivative and area through the fundamental theorem of calculus.
6. Understanding of applications of area below the curve in business and economics.

SPECIFIC OBJECTIVES

As often as possible, the class examples will be demonstrated and the homework problems will be assigned to help students accomplish each of these objectives will be selected from an area of business / education.

1. The student will demonstrate finding the limit of a variety of functions.
2. The student will calculate limits of functions involving polynomials, rational functions, exponential and logarithmic functions.
3. The student will demonstrate understanding by applying the definition of continuity of a function. 4. The student will demonstrate an understanding the concept of derivative of a function through discussion questions and applications to a variety of functions.
5. The student will calculate derivatives using the rules of differentiation and applying them to various functions.
6. The student will apply the chain rule for differentiation.
7. The student will demonstrate an understanding of the technique of implicit differentiation and its applications through various functions.
8. The student will demonstrate learning the formulas for the derivatives of functions involving polynomials, rational functions, exponential and logarithmic functions by applying the formulas to various functions.
9. The student will demonstrate understanding by interpreting the derivative and using its applications in analytic geometry and in Physics.
10. The student will apply their knowledge of derivatives through applications to Business and economics.
11. The student will use the graphic calculator to compute the limits of functions numerically.

IV. METHODS OF ASSESSING ACHIEVEMENT OF LEARNING OBJECTIVES

Students' achievement of course objectives will be evaluated by discussion questions/participation, graded homework completed in MyMathLab, three unit tests, and a comprehensive final exam.

V. STUDENT FEEDBACK AND GRADING POLICIES AND PROCEDURES

Students should take advantage of asking the instructor through canvas, email, the mymathlab website using the "Ask My Instructor" link, or by phone, (text any time, reserve phone calls between the hours of 7am – 9 pm) to receive individual assistance. The instructor will answer questions through the link on the Pearson website, or mainly through Canvas. You will receive a response within 24- 48 hrs. If you need an immediate response feel free to send me a text to alert me to your question or email.

HOMEWORK: Homework will be assigned through MyMathLab, http://www.pearson.com/mylab

TESTS and The FINAL EXAM will be on the Pearson website but will also be subject to Proctorio. You must go to canvas and click on the Quizzes tab. Answer Question 1, then LEAVE CANVAS OPEN, open a 2nd window to access the tests and final exam through the Pearson website. Once you have completed your test on the Pearson website, then go back to Canvas and answer Question 2 that will complete the Proctorio session. Exam 1 will be on mymathlab and all the exams after that will be on canvas in the quiz section and not on mymathlab. You get only one attempt for each exam.

Course Name: See Canvas. **Course ID**: **See Canvas**. It is crucial for your success in the class to work consistently and in a timely manner. If you need help, ask. Do not wait until you are overwhelmed and/or frustrated. Working the homework problems is essential to the learning of the material. Practice quizzes and tests are also available on the MyMathLab website, but these are not required. Assignments and/or tests turned in late will be penalized 10% per day beyond the due date. **The Final Exam will NOT be accepted late! GRADE**: The final grade for this course will be determined as follows:

Discussion: 5% (post and respond to 2 of your classmate's posts)
Graded Homework: 30%
Test 1: 15%
Test 2: 15%
Test 3: 15%
Final Exam: 20%

The grading scale is as follows, based on the average score given by the above weights.

90 - 100 = A	60 – 69 = D
80 - 89 = B	Below 60 = F
70 - 79 = C	

VI. METHODS OF INSTRUCTION

The course is completely online. The students will read and respond to discussion questions posted in canvas, do homework and complete tests/exam through MyMathLab, http://www.pearson.com/mylab
Course Name: See Canvas , Course ID: See Canvas

VII. ASSIGNMENTS AND COURSE CALENDAR

All assignments, course calendar, tests and the Final Exam will be posted online. Homework assignments will be open during the duration of the course. You can work the homework as many times as you like. The homework for each week should be completed no later than Sunday 11:59 pm**. If you are not completing each week's assignments by Sunday night, then you are falling behind.** The homework assignments will not be counted late until the end of that unit, giving you a little bit of flexibility in completing them and reworking them if need be. A late penalty of 10% per day applies to homework assignments completed after the closing date for the unit.

VIII. COMPUTER AND INFORMATION TECHNOLOGY USAGE

***Computer Usage**:* A computer with internet access is needed for this course.
Access Code for MyMathLab is required for this course. *http://www.pearson.com/mylab*
Calculator: The scientific calculator TI30XIIS is sufficient for the course. However, if you need assistance you may use a graphing calculator, TI-83 or TI-84 or download any app that will draw graphs. One example of such app is Desmos. You may download it from the google app store.

This course will use Proctorio for verification of student identity and for monitoring student activities while completing selected exam or Tests. **Proctorio** is used to authenticate students (verify their identity) and records student activity during the exam period. There is not a human watching you take your exam/quiz. Students must own a video camera associated with their laptop or PC to use **Proctorio**. Specific instructions regarding the use of **Proctorio** are offered on the Quiz and Exam homepage in the course. Instructions and procedures for onboarding with **Proctorio** (getting started and setting up) will be made available to you in advance of your first quiz/test. PROCTORIO TECHNICAL REQUIREMENTS • OS: Windows Vista or higher; MAC OS X 10.7 or higher • Browser: Chrome or Firefox • Camera Resolution: 640x480 or better • Internet Connection: Cable Modem, DSL or better (300 kbps download, 250 kbps upload)

IX. COURSE POLICIES

Disabilities and academic adjustments policy: If you have a disability that may interfere with your learning, testing, or assignment completion in this course, you may be eligible to receive an academic adjustment to help provide you with an equal opportunity to participate in and benefit from this course. Please contact Dr. Dianne King, Director of the Center for Student Success, who will advise you on appropriate documentation, determine reasonable adjustments, and notify me of any adjustments for which you are eligible. Once you have been approved for an academic adjustment through the Center for Student Success, please discuss with me its appropriate implementation in this course. Documentation must meet the guidelines specified by university policy, and no one else can be notified of your disability or adjustment without your written consent. This process must be repeated for every semester you are enrolled at Anderson University and wish to receive an adjustment. Academic adjustments are intended to "level the playing field" so that students with disabilities can demonstrate

their true abilities in their courses. Changes cannot be made to grades earned before a student has requested an adjustment, so please attend to this early in the semester.

ACADEMIC DISHONESTY:
Each student should refer to his/her Student Handbook for Anderson University's Academic Dishonesty Policy. Copying and posting other person's work as your own will be considered as academic dishonesty. Homework problems and exams need to be done by yourself only, not by discussion with others. You can discuss similar problems with others. Exams, quizzes, homework should be done by you the student only. Help from other persons and sources will be considered as a practice of academic dishonesty. This may involve disciplinary actions from the University. The policy, process, and penalties for academic dishonesty are described in the Student Handbook.

ATTENDANCE:
Attendance is defined as logging in and working on homework assignments in MyMathLab, at least twice a week, and posting a message and responses to 2 other posts in the Discussion forum through Canvas. If you do not satisfy the attendance requirement for two weeks, you will get a failing grade for the course.

*****You must have completed the introduction and be actively working on the unit 1 assignment in MyMathLab by May 17, 10 am to avoid being dropped from this class!**

PARTICIPATION/DISCUSSION:
Participation is defined as posting substantial, relevant, and meaningful discussions in the discussions forum. The guideline for substantial postings is 100 words. Please note that when it comes to participation, both quantity and quality are important considerations. One-liners such as "I agree," for example, would not constitute participation since it does not add anything of substance to the discussion. There are other similar responses that do not contribute to the discussion. In order to earn full participation points, you must add something of substance to the discussion. This would consist of your perspectives, and pointed follow-up questions, elaboration of ideas, examples, etc. The instructor will be the final judge on your participation points based on your responses. Make an earnest effort to answer the Discussion questions, whether you are right or wrong. The points for the discussion are not based on being right or wrong, but depends on your participation in the dialogue or discussions and asking questions that are contributing to learning something.

Post to the discussion by Thursday night. Then respond to 2 other posts by Sunday night.

Please post responses only in the threads provided. Please do not start a new thread for the discussion questions. Homework assignments will not be discussed in the Discussion forum. However, similar problems can be discussed in the discussion forum. Homework is the students' responsibility. Posting

negative comments about the class, Instructor, University, personal hardships, and suggestions on how the class can be better run are not suitable for the discussion forums and the classroom. Those messages will be deleted and they will not contribute to the learning environment of the class. They will not yield any participation point and may be considered as disruptions to the learning environment of the class.

You cannot copy something from the internet search engines and post it in the discussion forum. All copied material should be accompanied by proper citation of the sources. Be positive and be helpful to your fellow classmates and the Instructor. Your positive attitude can bring better results for everyone. Observe the open nature of the internet and you shall not violate the proprietary information and rights of others and other companies in your discussions. No political discussions will be allowed in the classroom. Be mindful and sensitive to the feelings of others when you post messages, since you do not know how the others read your messages.

Late Assignments:
Turning in the assignment on time is very important for success in the online classroom. The Instructor reserves the right not to accept the late homework. Instructor also reserves the right to assign a penalty of 10% per day that may be deducted. When it is more than three days after the test date for the current unit, your assignment may not be accepted. This policy will apply to graded homework, discussions, and tests. It is critical to your success in this course to stay current on all assignments! The **Final Exam will NOT be accepted late**.

Email Policy: The student is expected to follow the email policy of the University.
Here is the policy:

All students are expected to establish and maintain an e-mail address on the Anderson University email system. Students are expected to check their e-mail at least once each week during the Fall and Spring semesters. Students are responsible for all material, assignments, and announcements sent by email. Ignorance of course requirements, instructor statements and directions, and University announcements or policy statements sent through University e-mail is not an acceptable excuse for failure to meet the requirements of a course or to adhere to University policy.

Since this course is online, this course will require you to log in and access your class more often than indicated above. Make certain that your email is set to receive notifications.

X. LEARNING FACILITIES AND RESOURCES FOR STUDENTS PERTINENT TO COURSE
Students should take advantage of asking the instructor through canvas, email, the mymathlab website, or by phone, (text any time, reserve phone calls between the hours of 7am – 9 pm) to receive

individual assistance. Necessary computer programs will be available in the labs or free and downloadable from the internet.

Students are encouraged to take advantage of the tutoring services by students that is available in the Academic Services Center - Watkins 102. A student solution manual has been placed on reserve in the university library. Net Tutor is also available.

NOTE: The professor reserves the right to alter, add to, or delete requirements of the syllabus based upon the professor's judgment of what is best for the educational purposes of the particular class. Changes in class requirements and their influences on the final grade for the course will be discussed in class in advance and distributed in writing.