RANGER COLLEGE

RANGER, TEXAS

COURSE SYLLABUS

Calculus 1

MATH 2413

3 credit hours

Spring 2021

INSTRUCTOR:

Rebbecca Plowman

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HOURS: M: Erath Office 8:30am-10:30am
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W: Ranger Office 9am-10:30am
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I. Texas Core Curriculum Statement of Purpose

Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

II. Course Description

Functions, limits, continuity, differentiation, integration, applications, and topics in analytic geometry. Use of computer technology and lab assignments will be required in this course.

III. Required Background or Prerequisite

Passed MATH 1314 and MATH 1316.

IV. Required Textbook and Course Materials

eText: *Contemporary Calculus* by Dale Hoffman at Bellevue College

Lumen Ohm

Graphing Calculator (Recommended are a TI 83 or 84)

Laptop, Chromobook, tablet, etc. for in class exams

V. Course Purpose

This course focuses on quantitative literacy in logic, patterns, and relationships. The course involves the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experiences.

VI. Learning Outcomes

Upon successful completion of this course the student will:

1). Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals.

2). Draw graphs of algebraic and transcendental functions considering limits, continuity, and differentiability at a point.

3). Use differentiation rules to differentiate algebraic and transcendental functions.

4). Determine whether a function is continuous and/or differentiable at a point using limits.

5). Identify appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.

6). Evaluate definite integrals using the Fundamental Theorem of Calculus.

7). Articulate the relationship between derivatives and integrals using the Fundamental Theorem of Calculus.

VII. Core Objectives

This course meets the following of the six Core Objectives established by Texas:

X **Critical Thinking Skills (CT) –** Creative thinking, innovation, inquiry, and analysis; evaluation and synthesis of information

X **Communication Skills (COM) –** effective development, interpretation and expression of ideas through written, oral, and visual communication

X **Empirical and Quantitative Skills (EQS) –** The manipulation and analysis of numerical data or observable facts resulting in informed conclusions

☐ **Teamwork (TW) –** The ability to consider different points of view and to work effectively with others to support a shared purpose or goal

☐ **Social Responsibility (SR) –** Intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

X **Personal Responsibility (PR) –** The ability to connect choices, actions, and consequences to ethical decision-making

VIII. Methods of Instruction

In class lectures that may be accessed over Zoom or as a recording afterclass.
Collaborative work in the classroom.
Additional videos offered on Blackboard.

IX. Methods of Assessment

We will use a weighted average in this course to score your assessment. The methods of assessment and it portion of total grade are:

15% Homework: You will be provided access to Lumen Ohm, which is an online homework management system. You can access Lumen in Blackboard. Homework will be prior to the exams. Homework is an integral part of learning. Those who do the work, are those who learn. **(CT, COM, EQS, PR)**

20% Quizzes: There will be 4 to 6 paper quizzes given in this course. They will require you to show your work or to justify your answers. **(CT, COM, EQS, PR)**

40% Midterm Exams: There will be two middle of the term exams in this cover. Each one will cover between 2 to 3 chapters. They will be available on Lumen or as a paper exam. You will take the exams during normal class times, unless we have to go virtual. Like the quizzes, they will require you to show your work or to justify your answers.You will need to bring a laptop, chromebook, tablet, etc. to take the exams if they are on Lumen. **(CT, COM, EQS, PR)**

25% Final Exam: The final exam will be given during the last week of the semester. It will be a cumulative exam, available either on Lumen or as a paper exam. The exam will be taken in person. You will need to bring a laptop, chromebook, tablet, etc. to take the exam. **(CT, COM, EQS, PR)**

Grading scale: A = 90-100% B = 80-89 C = 70-79 D = 60-69 F = Below 60

X. Course/Classroom Policies

Please attend class everyday. You may come to the classroom to attend or over Zoom. A link will be provided if you need to attend, via Zoom, from homework or work.

Be courteous to your instructor and other students. Bear in mind that this is a difficult time for all of us and mishaps may happen.

Please contact your instructor first if you have any issues. I am the one who has to fix the problem and contacting me is the fastest way to solve it.

If you have accommodations, I need the paperwork stating which accommodations are allowed. You will also have to inform me if you wish to use your accommodations. They are not automatically given.

You may use cellphones **only** for calculators and to take pictures of notes. Do not text in class. If you have an emergency, please exit the classroom to use your phone.

Come prepared to class. You will need to bring paper and pencils/tablet/powerpoints notes to class to take notes. The method of note taking is up to you.

You will have to bring your own laptop, tablet, chromebook etc. for exams. Make sure you can run MyMathLab on the device you choose.

You may wear earbuds and listen to music during exams, only.

It is a college policy that we can choose to drop you from the course if you have 6 or more unexcused absences. If you are dropped from this course, it may cause you to be dropped from other courses.

The semester ends May 6th, 2021. No work will be taken after this date.

XI. Course Outline/Schedule

Weeks 1 – 3	Limits and Continuity
Weeks 4 – 7	Derivatives (Exam 1 in Week 5)
Week 8	Spring Break
Weeks 9 – 12	Graph and Derivatives (Exam 2 in Week 11)
Weeks 13 – 15	Integrals
Week 16	Finals

XII. Non-Discrimination Statement

Admissions, employment, and program policies of Ranger College are nondiscriminatory in regard to race, creed, color, sex, age, disability, and national origin.

XIII. ADA Statement

Ranger College provides a variety of services for students with learning and/or physical disabilities. Students are responsible for making initial contact with the Ranger College Counselor, Gabe Lewis (glewis@rangercollege.edu). It is advisable to make this contact before or immediately after the semester begins.