RANGER COLLEGE

STEPHENVILLE, TEXAS

COURSE SYLLABUS

Calculus I

MATH 2313

3 credit hours

Fall, 2017

INSTRUCTOR:

Dr. Norman Fletcher

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EMAIL: nfletcher@rangercollege.edu
OFFICE: Science No. 1, RC
PHONE: 254 – 647 – 3234 ext. 7031
HOURS: 8:00 – 4:30 Monday through Thursday

1. Texas Core Curriculum Statement of Purpose

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.

2. 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.

3. Required Background or Prerequisite

MATH 1314 and MATH 1316

4. Required Textbook and Course Materials

James Stewart, Calculus, 8th Edition, Cengage Learning, ISBN 13: 978-1-285-74062-1
Loose-leaf Edition, ISBN 13: 978-1-305-27176-0

5. 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.

6. 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.

7. Core Objectives

This course meets the following of the six Core Objectives:

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

⊗ **Communication Skills (COM) –** Effective development, interpretation and expression of ideas through written, oral, and visual communication.

⊗ **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

⊗ **Personal Responsibility (PR) –** The ability to connect choices, actions, and consequences to decision making.

8. Methods of Instruction

This course will employ informal lecture/demonstration/discussion and occasional student group work. Ancillary study documents will be used including, but not limited to the following:

- Limits
- Properties of Limits
- The derivative

9. Methods of Assessment

- **Quizzes (25%) (CT, COM, EQS, PR) –** There will be 3 – 5 short in-class quizzes which usually include verbal response items as well as typical algebraic/calculus problems.

- **Major Exams (50%) (CT, COM, EQS, PR) –** There will be 2 – 4 class period length exams, each covering multiple chapters from the textbook.

- **Final Exam (25%) (CT, COM, EQS, PR) –** This is a comprehensive exam covering the entire content of the course.

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

10. Classroom Policies/procedures

- Regular and punctual attendance in all classes is considered essential for optimum academic success.

- Students are expected to be seated by the beginning of class.

- If a student has the equivalence of three weeks of unofficial absences, the student may be dropped with a grade of F (Ranger College Catalog).

- It is the responsibility of the student to inform the instructor of an excused absence. An absence may be excused by the Dean for participation in an authorized college activity or for a valid medical reason.

- Any student who is disruptive to the class will be dismissed from the class and may be dropped from the course. Any student misconduct will be reported to the Dean of Student Services (Ranger Handbook).

- Any student found with unauthorized material(s) such as cheat sheets, electronic devices, etc. during a quiz/exam or copying from another student's work will be subject to disciplinary action.

- Please do not bring cell phones, ipods, or other electronic devices to class or be sure they are turned off. Computers (lap tops) may be used with special permission and only for math class material.

- No use of any tobacco products is permitted on campus.

11. Course Outline/Schedule

Weeks 1 – 3   Chapter 1

Weeks 4 – 5   Chapter 2

Weeks 6 – 8   Chapter 3

Weeks 9 – 10   Chapter 4

Weeks 11 – 12   Chapter 5

Weeks 13 – 14   Chapter 6

Week 15   Final Exam

12. Non-Discrimination Statement

Admissions, employment, and program policies of Ranger College are non-discriminatory with regard to race, creed, color, sex, age, disability, and national origin.

13. ADA Statement

Ranger College provides a variety of services for students with learning and/or physical disabilities. The student is 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.