RANGER COLLEGE

RANGER, TEXAS

COURSE SYLLABUS

Intermediate Algebra

MATH 0314

3 credit hours

SPRING 2021

INSTRUCTOR:

Rebbecca Plowman

INSTRUCTOR: Rebbecca Plowman
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                            T: Ranger Office 9am-10:45am
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I. Texas Core Curriculum Statement of Purpose

The purpose of Developmental Mathematics is to help students improve basic mathematics skills. The aim of Developmental Mathematics is to prepare students, so that they can be successful in academic courses at the c college level to meet the requirements of the Texas Success Initiative. Based on holistic placement, using diverse data for developmental studies placement, a student is placed in MATH 0342, MATH 0314, or NCBM (course-pairing). A student placed in developmental mathematics coursework is able to advance, either to an advanced level or out of developmental mathematics, by passing the TSI Math assessment or achieving a 70% or better in his/her respective MATH coursework.

II. Course Description

0314 – Intermediate Algebra (3-1) 3201045219 Reviewing of factoring and special structures. Functions and equations as followings: rational, radical, root, and quadratics. Sustems of linear equations and inequalities in two and three variables. Non-linear inequalities. Credit 3 semester hours. In order to move beyond developmental mathematics (0314) and into first college-level mathematics coursework, a student must achieve a 70% or better in class, with the mid-term exam accounting for 25% of the overall grade, OR successfully pass the TSI Math assessment. Failure to obtain either academic stipulation will result in repeating 0314.

III. Required Background or Prerequisite

The student has scored between a 340 and 349 on the TSI or has not

taken the

IV. Required Textbook and Course Materials

· Access to Blackboard

· Lumen OHM login and access to coursework

· Handheld calculator (TI-83, 84, or Nspire are recommended).

· Notes printed from Blackboard

V.   Course Purpose

Courses in Mathematics focus on quantitative literacy in logic, patterns, and relationships. Courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience. At the completion of this course, the student should be prepared to succeed in College Algebra.

VI. Learning Outcomes

Upon successful completion of this course, students will:
1. Use appropriate symbolic notation and vocabulary to communicate, interpret, and explain mathematical concepts.
2. Define, represent, and perform operations on real numbers, applying numeric reasoning to investigate and describe quantitative relationships and solve real world problems in a variety of contexts.
3. Use algebraic reasoning to solve problems that require ratios, rates, percentages, and proportions in a variety of contexts using multiple representations.
4. Apply algebraic reasoning to manipulate expressions and equations to solve real world problems.
5. Use graphs, tables, and technology to analyze, interpret, and compare data sets. 6. Construct and use mathematical models in verbal, algebraic, graphical, and tabular form to solve problems from a variety of contexts and to make predictions and decisions.

Student Learning Outcomes and Learning Objectives as defined by Ranger College: At the end of the semester the student will bet able to demonstrate the abilities to work with: 1

1. Polynomial Expressions: Perform algebraic operations, factor, and solve polynomial equations and inequalities.
2. Rational Expressions: Simplify, perform algebraic operations, and solve rational equations and inequalities.
3. Radical Expressions: Simplify, perform algebraic operations, and solve radical equations and inequalities.
4. Systems of Equations: Solve problems involving systems of equations and inequalities. 5. Word Problems and Applications: Students effectively model verbal information with algebraic equations and inequalities and interpret the solutions.

VII. Core Objectives

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

[FOR CORE CLASSES: Check all of the **required** core objectives for the course, as shown on the Table of Foundational Component Areas (provided separately). If you choose to check any **optional** core objectives, be sure to justify this elsewhere in the syllabus by indicating the nature of the coursework that addresses these optional objectives. Regarding this, see the note in Section IX, Methods of Assessment, below.]

FOR ELECTIVE CLASSES: Check any of the core objectives that will be met by the course. Be sure to justify these choices elsewhere in the syllabus by indicating the nature of the coursework that addresses these objectives. Regarding this, see the note in Section IX, Methods of Assessment, below.]

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

X **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

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

VIII. Methods of Instruction

The instructional delivery of this class may be face-to-face, online, or hybrid. Students may be expected to watch instructional videos outside class, attend Zoom class sessions, work in groups via Zoom, or attend regular class in person. Students are also expected to complete assignments online through Blackboard and Lumen OHM.

In order to be successful in Intermediate Algebra, a student must achieve a 70% OR successfully pass the TSI Math assessment. Failure to obtain either academic stipulation will result in repeating the course**.**

- **Attendance and Participation: 10%** (CT, COM, EQS, TW, PR)
  You will be expected to attend class everyday, either face to face or on Zoom. You will also be asked to participate in class. Participation will include answering questions, in class work, and potential group work.
- **Homework: 40%** (CT, COM, EQS, PR)
  The homework will be on Lumen Ohm. You can access the homework through Blackboard.
- **Unit Test: 25%** (CT, COM, EQS, PR)
  There will be 5 or 6 unit tests. This will also be available on Lumen. If possible, we will take these tests in class. If we go online, you will take them outside of class and they will be timed. You will need to bring a laptop to class to take the tests. If this is a problem, let me know.
- **Final Exam: 25%** (CT, COM, EQS, PR)
  This exam will be given at the end of the semester and cover all material covered in the course. You will need to bring a laptop to class to take the exam. If this is a problem, let me know.

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

X. Course/Classroom Policies

XI. Course Outline/Schedule

Week	Tuesday	Thursday
Week 1 **January 19 and 21**	**First day info** **Student contact info**	**Domain and Range** **Interval Notation** **Parent Functions**
Week 2 **January 26 and 28**	**Function Notation**	**Writing Equations of Lines**

	Evaluating Functions	
Week 3 **February 2 and 4**	**Functions Unit Test**	**Solving and Graphing Compound Inequalities**
Week 4 **February 9 and 11**	**Systems of Equations: Substitutions**	**Systems of Equations: Elimination**
Week 5 **February 16 and 18**	**Linear Functions Unit Test**	**Graphing Quadratics** **Factoring Quadratics**
Week 6 **February 23 and 25**	**Continue Factoring** **Solving Quadratics with Factoring**	**Solving Quadratics with the Quadratic Formula**
Week 7 **March 2 and 4**	**Review and Caught Up**	**Quadratics Unit Test**
Week 8 **March 9 and 11**	**Spring**	**Break**
Week 9 **March 16 and 18**	**Basics of Polynomials**	**Finding Zero of Polynomials**
Week 10 **March 23 and 25**	**Graphing Polynomials**	**Simplifying Rational Expressions**

| Week 11
March 30 and

April 1 | Polynomials Unit Test | Multiply and Add

Rational Expressions |
|---|---|---|
| Week 12
April 6 and 8 | Asymptotes and Domains
Graphing Rational Functions | Simplifying Square Roots |
| Week 13
April 13 and 15 | Rational Functions Unit Test | Adding and Multiplying Square Roots |
| Week 14
April 20 and 22 | Dividing Square Roots | Review and Caught Up |
| Week 15
April 27 and 29 | Square Roots Unit Test | Review |
| Week 16
May 4-6 | Finals | Final |

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.