**Angelina College**
**Division of Science and Mathematics**
**MATH 0324 – Pre-business Math**
**Instructional Syllabus – Fall 2018**

## I. BASIC COURSE INFORMATION:

**Mathematics – MATH 0324 – Pre-Business Math Co-requisite.** This course emphasizes the knowledge and skills necessary to succeed in MATH 1324. A study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. Three lecture hours each week. Required co-requisite: MATH 1324.

A. The intended audience is any student needing to strengthen their mathematics background while taking a business mathematics course.

B. Instructor: George Reed
Office Location: S203C
Office Hours:
Phone: 936-633-5485
E-mail Address: greed@angelina.edu

| Day | Office Hours |
|---|---|
| Monday | **1:30-3:00** |
| Tuesday | **2:30-3:30** |
| Wednesday | **1:30-3:00** |
| Thursday | **2:30-3:30** |
| Friday | **By Appointment** |

## II. INTENDED STUDENT OUTCOMES:

### A. Core Objectives Required for this Course

**1. Critical Thinking:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

**2. Communication:** to include effective development, interpretation and expression of ideas through written, oral and visual communication

**3. Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

### B. Course Learning Outcomes for all Sections

1. Define, represent, and perform operations on real and complex numbers.
2. Recognize, understand, and analyze features of a function.
3. Recognize and use algebraic (field) properties, concepts, procedures (including factoring), and algorithms to combine, transform, and evaluate absolute value, polynomial, radical, and rational expressions.
4. Identify and solve absolute value, polynomial, radical, and rational equations.
5. Identify and solve absolute value and linear inequalities.
6. Model, interpret, and justify mathematical ideas and concepts using multiple representations.
7. Connect and use multiple strands of mathematics in situations and problems, as well as in the study of other disciplines.

## III. ASSESSMENT MEASURES

### A. Assessments for the Core Objectives

1. **Critical thinking:** Students will demonstrate the application of critical thinking skills by utilizing reading, creative and appropriate problem solving techniques, and appropriate mathematical tools to solve problems. These skills will be assessed using a rubric in embedded test questions and/or written homework problems.
2. **Communication:** Students will communicate mathematical information using complete and correct notation and written and visual communication skills. A rubric will be used to assess written, oral, and visual communication skills.

3. **Empirical and Quantitative Skills:** Students will use empirical and quantitative skills to answer embedded test questions. These will be assessed using a rubric.

**B. Assessments for Course Learning Outcomes**

1. The student's ability to define, represent, and perform operations on real and complex numbers will be assessed through embedded test questions.
2. The student's ability to recognize, understand, and analyze features of a function will be assessed through embedded test questions.
3. The student's ability to recognize and use algebraic (field) properties, concepts, procedures, and algorithms to combine, transform, and evaluate absolute value, polynomial, radical, and rational equations will be assessed through embedded test questions.
4. The student's ability to identify and solve absolute value, polynomial, radical, and rational equations will be assessed through embedded test questions.
5. The student's ability to identify and solve absolute value and linear inequalities will be assessed through embedded test questions.
6. The student's ability to model, interpret, and justify mathematical ideas and concepts using multiple representations will be assessed on written homework problems.
7. The student's ability to connect and use multiple strands of mathematics in situations and problems, as well as in the study of other disciplines will be assessed through homework problems.

## IV. INSTRUCTIONAL PROCEDURES:

The course is taught using a combination of lectures, discussions, and practice exercises. The amount of time spent using any one technique will vary from class to class and from lesson to lesson as determined to be most appropriate by the instructor.

## V. COURSE REQUIREMENTS and POLICIES

**A. Required Textbooks, Materials and Equipment** –

1. Required Textbook: Mathematics with Applications In the Management, Natural, and Social Sciences, or Finite Mathematics with Applications11th ed., Lial, Hungerford, Holcomb, Mullins; Pearson publisher. An electronic copy is acceptable. Ref. 2 below.
2. Access to **www.angelina.mylabsplus.com** is required. The access code is included with a new book purchased at AC bookstore or the access code may be purchased separately at the bookstore or on the MyLabsPlus website noted above. An electronic copy of the text is provided as part of the MyLabsPlus access.
3. Specific equipment required of all students: A graphing calculator with matrix and "finance-TVM Solver" applications **is required**. The calculator must be able run TI software. Classroom demonstrations and instruction will support the use of calculator models TI-83+ or model TI-84; hence, one of these models is required.
4. A 3-ring binder, loose-leaf notebook paper, and dividers.

**B. Course Policies – This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.**

**VI. Educational Accommodations –** If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you may fill out the Educational Accommodations application within your AC Portal, under the "Student Services" tab. A Student Success team member will contact you once the application is received. At a post-secondary institution, you must self-identify as a person with a disability in order to receive services; for questions regarding the application process you can visit the

Office of Student Success and Inclusion in the Student Center (205A); text 936.463.8078; or email access@angelina.edu. To report any complaints of discrimination related to a disability, you should contact Mr. Steve Hudman, Dean of Student Affairs, in Room 101 of the Student Center. You may also contact Dean Hudman by calling (936) 633-5292 or by emailing shudman@angelina.edu.

**VII. Attendance –** Attendance is required as per Angelina College Policy and will be recorded every day. Any student with three (3) consecutive absences of four (4) cumulative absences may be dropped from the class. Not working on assignments, including MyLabsPlus homework, is considered non-participation which also subjects you to being dropped from the course. A student with six (6) cumulative absences by November 5th will be dropped with no option to readmit. Records will be turned in to the academic dean at the end of the semester. Do not assume that non-attendance in class will always result in an instructor drop. **You must officially drop a class or risk receiving an F**. This is official Angelina College Policy.

**VIII. Additional Policies Established by the Instructor**

MAKE-UP EXAMS
No make-up exams will be offered. The grade on the final exam can replace the lowest exam grade, including the grades from a missed exam.

STUDENT CONDUCT
A positive environment for learning will be maintained by students being courteous to each other and to the instructor. Eating, drinking, sleeping, and distracting conversations during lecture will not be allowed. Repeated tardiness will result in warning; if continued this will result in further action depending on upon seriousness of problem. Regular attendance is also expected as per college policy.

Cheating on tests is not tolerated as per Angelina College policy and may result in expulsion from the course. Plagiarism is not tolerated and will result in a zero for any assignment in which it is detected.

CELL PHONES
**Cell phones must be turned off or on the silent mode.** Students may not have access to cell phones during quizzes and/or tests.

**VI. COURSE OUTLINE**:
See attached COURSE SCHEDULE

**VII. EVALUATION AND GRADING:**

1. Your grade will be assessed by:
   a. Homework on MyLabsPlus (Integrated Review) valued at 100 points.
   b. Four quizzes valued at 100 points each (400 points total).
   c. A comprehensive final examination valued at 150 points.
      NOTE: TI-89, TI-92, or any calculator with CAS-software may not be used on the final.

2. No makeup tests will be allowed. The final exam will replace any one missed test or the lowest test grade during the semester.

***The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.***

**MATH 0324 COURSE SCHEDULE –**

Fall 2018

| Lesson | Date | Description |
|---|---|---|
| 1 | 08/28 | Syllabus, calculator, basics of exponents, like and unlike terms, combining like terms, FOIL |
| 2 | 08/30 | Basics of first degree equations, solving equations, solving for specified variables, clearing fractions |
| 3 | 09/04 | Factoring, square roots, quadratic formula, Cartesian coordinate plane, ordered pairs, intercepts, plotting points using a table, graphing with the graphing calculator |
| 4 | 09/06 | Slope, vertical and horizontal lines, slope-intercept, point-slope, linear equations in two variables, linear regression with the graphing calculator |
| 5 | 09/11 | Function notation, domain and range, graphs of functions, vertical line test |
| 6 | 09/13 | Solving application problems |
| **7** | **09/18** | **Review, take quiz, discuss exams and/or homework** |
| 8 | 09/20 | Graphs of quadratic functions, different forms of quadratic functions (standard, vertex) |
| 9 | 09/25 | Polynomial graphs, even and odd functions, vertical and horizontal asymptotes, using the calculator to view graphs |
| 10 | 09/27 | Exponential functions and their graphs, applications involving exponential functions |
| 11 | 10/02 | Basics of logarithms and their graphs, properties of logarithms, solving exponential and logarithmic equations by using properties |
| **12** | **10/04** | **Review, take quiz, discuss exams and/or homework** |
| 13 | 10/09 | Convert percents to decimals, multiplying by decimals and fractions, using the calculator on simple interest problems |
| 14 | 10/11 | Basics of compound interest (compounding periods, terminology, calculator use) |
| 15 | 10/16 | Future value of annuities: working with large formulas, using the calculator |
| 16 | 10/18 | Present value of annuities: working with large formulas, using the calculator, setting up amortizations |
| **17** | **10/23** | **Review, take quiz, discuss exams and/or homework** |
| 18 | 10/25 | Solving systems of linear equations in two variables: graphing, substitution and elimination methods, using Gauss-Jordan method on a calculator (rref) |
| 19 | 10/30 | Steps in solving applications using systems of equations |
| 20 | 11/01 | Review of matrices, terminology, using the calculator, operations on matrices |
| 21 | 11/06 | Setting up and solving matrix equations |
| 22 | 11/08 | Review graphing equations in two variables, basics of linear inequalities in two variables, review of ordered pairs, ordered pairs as corner points of a feasible region |
| 23 | 11/13 | Review of techniques for solving applications, review of matrices and their relationship to linear programming, using the calculator |
| 24 | 11/15 | Basics of setting up a linear programming maximization application |
| **25** | **11/20** | **Review, take quiz, discuss exams and/or homework** |
| 26 | 11/27 | Discuss terminology of sets and set notation as applies to probability (union, intersection, complement, etc.) |
| 27 | 11/29 | Discuss terminology and rules for conditional probability, define independent events |
| 28 | 12/04 | Review, discuss topics since last exam and/or homework |
| 29 | 12/06 | Review for final exam |
| **30** | | **Final Exam** |
| | | |

Last day to drop a course is November 5th.

Revised: 08/10/16