Angelina College
Division of Science and Mathematics
MATH 1314 – College Algebra
Instructional Syllabus – Fall 2017 (TR)

I. BASIC COURSE INFORMATION:

A. College Algebra – MATH 1314 – In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. Students are required to have a graphing calculator. Three lecture hours each week.

B. The intended audience is any student needing the fundamentals of college algebra but not preparing for the study of higher mathematics nor majoring in science.

C. Instructor: George Reed
Office Location: S211
Office Hours: See office door
Phone: 936-633-5485
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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. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

III. ASSESSMENT MEASURES

A. Assessments for the Core Objectives

1. **Critical thinking:** For a given project, students will analyze given information, evaluate methods for solving the problem, calculate results, and analyze the solution. A rubric will be used to assess critical thinking skills and correctness of the solution.

2. **Communication:** Students will solve an assigned problem, discuss the solution in a group setting and present the solution and reasoning. A rubric will be used to assess written, oral, and visual communications skills.

3. **Empirical and Quantitative Skills:** Students will be given data, organize it into systems of equations and use matrices to solve the systems within the given constraints. A rubric will be used to assess the empirical and quantitative skills.

B. **Assessments for Course Learning Outcomes**
1. Students will demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses within imbedded test questions.
2. Students will recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations within embedded test questions.
3. Students will apply graphing techniques within embedded test questions.
4. Students will recognize, solve and apply a system of linear equations using matrices within an embedded test question.

IV. <u>INSTRUCTIONAL PROCEDURES:</u>
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. <u>COURSE REQUIREMENTS AND POLICIES:</u>
A. **Required Textbooks and Recommended Readings, Materials and Equipment**
1. <u>College Algebra</u>, Paul Sisson (Hawkes Learning Systems), 2nd ed.
2. Access to Hawkes Learning Systems (included with new book bought at AC bookstore)
3. Graphing calculator – A TI (Texas Instruments) graphing calculator is required or highly recommended. The TI-84 graphing calculator will be used by the instructor in classroom demonstrations.

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

1. **Academic Assistance** – 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 should see Sellestine Hunt – Associate Dean of Student Services – Student Center, Room 200. At a post-secondary institution, you must self-identify as a person with a disability; Ms. Hunt will assist you with the necessary information to do so. To report any complaints of discrimination related to disability, you should contact Mr. Steve Hudman – Dean of Student Affairs, Student Center, Room 101, (936)633-5292 or by email shudman@angelina.edu.

2. **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. 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. Last day to drop is November 6th.

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

   MAKE-UP EXAMS
   No make-up exams will be allowed. The grade on the final exam can replace any one missed test or the lowest test grade during the semester.

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 and pagers 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 SUPPLEMENTAL ASSIGNMENTS

VII. <u>EVALUATION AND GRADING:</u>
  1. Your grade will be assessed by:
      a. Three tests valued at 100 points each for a total of 300 points.
      b. Homework on Hawkes Learning Systems valued at 50 points.
      c. Project valued at TBA points.
      d. A comprehensive final examination valued at 100 points.
          NOTE: TI-89, TI-92, or any calculator with CAS-software may not be used on the final.

  2. Homework will be completed on Hawkes Learning Systems and **is required**.
      a. Hawkes Learning System comes with new books from the AC bookstore. It may also be purchased with a major credit card on the website.
      b. The homework should be done on your home computer if possible. If not, there are campus sites available at the library and the math labs in Rooms S223 and S110. These may be used on a limited space available basis. (No printing or surfing may be done except in the library.)

  3. Those who drop the course on or before September 13th will not receive a grade for the class. Those dropping between September 14th and November 6th (inclusive) will receive a W in the course. November 6th is the last day for dropping a course.

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

Lesson	Date	Sections	Pages	Description
1	08/29	1.3	28 – 44	Properties of Exponents
		1.4	45 – 60	Properties of Radicals
2	08/31	1.5	61 – 76	Polynomials and Factoring
		1.6	77 – 85	The Complex Number System
3	09/05	2.1	97 – 111	Linear Equations in One Variable
		2.3	122 – 136	Quadratic Equations in One Variable
4	09/07	2.3	122 – 136	Quadratic Equations in One Variable
		2.4	137 – 142	Higher Degree Polynomial Equations
5	09/12	2.5	143 – 157	Rational Expressions and Equations
6	09/14	2.6	158 – 163	Radical Equations
		Review		Review
7	**09/19**	**Exam #1**		**Exam #1 (Sections 1.3 – 1.6, 2.1, 2.3 – 2.6)**
8	09/21	3.1	175 – 188	The Cartesian Coordinate System
		3.2	189 – 196	Linear Equations in Two Variables
9	09/26	3.3	197 – 214	Forms of Linear Equations
		3.4	215 – 222	Parallel and Perpendicular Lines
10	09/28	4.1	253 – 270	Relations and Functions
		4.2	271 – 286	Linear and Quadratic Functions
11	10/03	4.3	287 – 303	Other Common Functions
		4.4	304 – 321	Transformations of Functions
12	10/05	4.4	304 – 321	Transformations of Functions
		4.5	322 – 335	Combining Functions
13	10/10	4.6	336 – 348	Inverses of Functions
		Review		Review
14	**10/12**	**Exam #2**		**Exam #2 (Sections 3.1 – 3.4, 4.1 – 4.6)**
15	10/17	5.1	361 – 376	Introduction to Polynomial Equations and Graphs
16	10/19	5.2	377 – 389	Polynomial Division and the Division Algorithm
17	10/24	5.3	390 – 404	Locating Real Zeros of Polynomials
18	10/26	5.4	405 – 418	The Fundamental Theorem of Algebra
19	10/31	6.1	429 – 448	Rational Functions
20	11/02	7.1	505 – 516	Exponential Functions and Their Graphs
		7.2	517 – 532	Applications of Exponential Functions
21	11/07	7.3	533 – 544	Logarithmic Functions and Their Graphs
22	11/09	7.4	545 - 560	Properties and Applications of Logarithms
23	11/14	7.5	561 – 576	Exponential and Logarithmic Equations
		Review		Review
24	**11/16**	**Exam #3**		**Exam #3 (Sections 5.1 – 5.4, 6.1, 7.1 – 7.5)**
25	11/21	8.2	605 – 618	Matrix Notation
		8.4	635 - 649	The Algebra of Matrices

26	11/28	8.5	650 – 663	Inverses of Matrices
27	11/30	9.1	701 – 719	Sequences and Series
		9.2	720 – 731	Arithmetic Sequences and Series
28	12/05	9.3	732 – 749	Geometric Sequences and Series
29	12/07	Review		Review
30		**Final**		**Comprehensive Final Examination**