MATH 1314 Syllabus
Eastfield College

Instructor Information
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Office Location: N.A.
Office Hours:
Division Office and Phone: STEM Division, C-Building, Room 202 | 972-860-7297

Course Information
Course Title: College Algebra
Course Number: MATH 1314
Section Number: 42745
Semester/Year: Spring 2020
Credit Hours: 3
Class Meeting Time/Location: MTWThF
Certification Date: December 18, 2019
Last Day to Withdraw: January 6, 2020

Course Prerequisites
College level ready in Mathematics algebra-based level.

Course Description
This course is an 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. This course is cross-listed as MATH 1414. The student may register for either MATH 1314 or MATH 1414 but may receive credit for only one of the two.

Student Learning Outcomes
Upon successful completion of this course, students will:
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.

Texas Core Objectives
The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - 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
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
5. **Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making
6. **Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Required Course Materials
3. A graphing calculator may be needed for some assignments. Students may check out a TI-84 calculator for the Reserve Desk in the Eastfield College library for the day. TI-84 calculators are also available during testing at the Eastfield College testing center.
Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**Graded Work**
The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

**Summary of Graded Work**

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Weight</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>MML Homework</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Tests</td>
<td>4 @ 6.25% each</td>
<td>25%</td>
</tr>
<tr>
<td>MidTerm Exam</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td><strong>TOTAL</strong>: 100%</td>
<td></td>
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**Final Grade**

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>

**Description of Graded Work**

**Homework:** All homework must be completed by January 9, 2020.

**Tests:** You will be allowed three attempts at the chapter tests and your highest score will be counted towards your final course grade. All tests must be completed by January 9, 2020.

**Mid-term Exam:** Mid-term exam will cover all lessons from the beginning to Chapter 3. This represents 25% of the class grade.
**Final Exam:** A comprehensive, departmental final examination, which will represent at least 25% of the class grade, will be administered in all Math 1314 classes.

**Attendance and Participation:** This constitutes 10% of the class grade. To get full attendance credit for the class session, the student must stay in class for the whole period unless permission is granted ahead of time by the instructor.

**Attendance and Your Final Grade**
You are expected to regularly attend all classes in which you are enrolled. Students have the responsibility to attend class and to consult with the instructor when an absence occurs.

**Late Work Policy**
Any missing tests and assignments must be completed within a week after the due date. Missing tests or assignments will be graded as zero.

**Standard of Conduct/Classroom Etiquette**
No food, drinks or tobacco products are allowed in Eastfield College classrooms. However, if your class is in a non-lab classroom, your instructor may allow food or drink.

**Additional Resources**
[**Tutoring Services**](https://www.eastfieldcollege.edu/services/academic-support/tutoring/pages/default.aspx) are provided for Mathematics and Developmental Mathematics in the Eastfield library, Building L, Room 200. Students are encouraged to take advantage of this service for additional help in their course work. Visit the link above or call 972-860-7174 for more information on tutors, hours of operation and policies.

**Other Course Policies**
Cellphones, laptops, and other similar devices must be turned off during class period. You may be asked to leave the classroom if the instructor feels it is destruction to your learning.
Institutional Policies

Institutional Policies relating to this course can be accessed using the link below. These policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.

[Eastfield Institutional Policies](http://www.eastfieldcollege.edu/syllabipolicies)

Course Content

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section(s)</th>
<th>Topic(s)</th>
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</thead>
<tbody>
<tr>
<td>Chapter P</td>
<td>P1</td>
<td>Classification of Real Numbers</td>
</tr>
<tr>
<td>Chapter 1</td>
<td>1.5-1.7</td>
<td>Equations, Relations and Functions</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>2.1-2.2, 2.5-2.8</td>
<td>More on Functions, Circles</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>3.1-3.6</td>
<td>Polynomial and Rational functions; Theory of Functions</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>4.1-4.5</td>
<td>Exponential, Logarithmic and Special functions, and applications</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>6.3-6.5</td>
<td>Matrices, Determinants, Solving Systems of equations using Matrices and applications</td>
</tr>
<tr>
<td>Chapter 8</td>
<td>8.1-8.3, 8.5</td>
<td>Progressions, The Binomial Theorem, mathematical reasoning skills, Sequences, Series and Applications</td>
</tr>
</tbody>
</table>

Course Schedule

<table>
<thead>
<tr>
<th>Day 1 - December 16</th>
<th>MATH 1314</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.1 Algebraic expressions/ 1.5 Quadratic equations</td>
<td>Certification Date</td>
<td></td>
</tr>
<tr>
<td>1.6 Other types of equations/ 1.7 Linear Inequalities</td>
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<table>
<thead>
<tr>
<th>Day 2 - December 17</th>
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</thead>
<tbody>
<tr>
<td>2.1 Basics of functions and their graphs</td>
<td></td>
</tr>
<tr>
<td>2.2 More on functions and their graphs</td>
<td></td>
</tr>
<tr>
<td>2.5 Transformations of functions</td>
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</table>

<table>
<thead>
<tr>
<th>Day 3 - December 18</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>2.6 Combinations of functions; composite functions</td>
<td></td>
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<tr>
<td>2.7 Inverse functions/2.8 distance, midpt, circles</td>
<td></td>
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</tbody>
</table>
Day 4 - December 19
   3.1 Quadratic functions
   3.2 Polynomial functions and their graphs
   3.3 Dividing polynomials; Remainder and Factor Theorems

Day 5 - December 20
   3.4 Zeros of polynomial functions
   3.5 Rational functions and their graphs

Day 6 - December 23
   3.6 Polynomial and rational inequalities
   Review for Mid-Term

Day 7 - January 2
   Review for Mid-Term
   Mid-Term Exam

Day 8 - January 3
   4.1 Exponential functions
   4.2 Logarithmic functions
   4.3 Properties of logarithm

Day 9 - January 6
   4.4 Exponential and logarithmic equations
   4.5 Exponential growth and decay; modeling data
   6.3 Matrix operations and their applications

Day 10 - January 7
   6.4 Multiplicative inverses of matrices and matrix equations
   6.5 Determinants and Cramer’s Rule
   8.1 Sequences and summation notation

Day 11 - January 8
   8.2 Arithmetic sequences
   8.3 Geometric sequences and series
   8.5 The Binomial Theorem

Day 12 - January 9
   Final Exam Review

Day 13 - January 10
   Final Exam (Comprehensive)