Term: (Fall 2019) 8-Week Course  
Course: MATH-1314-48412  
Course Dates: 10/22/19 – 12/19  
Class Location: Online

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Michelle Burt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone:</td>
<td>817-598-8895</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:MichelleBurt@dcccd.edu">MichelleBurt@dcccd.edu</a></td>
</tr>
<tr>
<td>Office &amp; Office Hours:</td>
<td>By Appointment Only, Online</td>
</tr>
</tbody>
</table>

| STEM Division: | C-Building, Room 202 | 972-860-7297 |

| Course Drop Date: | 11/29/19 |
| Certification Date: | 10/28/19 |
| Disclaimer: | The instructor reserves the right to amend this syllabus as necessary. |

**Course Description:**
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 the prerequisite for MATH 1316. 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. (3 or 4 Lec.)
The corequisite for this course is DMAT 0315-47412. (3 Lec.)

**Corequisite/Concurrent**
This is a corequisite course and requires continuous concurrent enrollment with DMAT 0315.

**Textbook and Other Course Materials (SHOULD HAVE BEEN PURCHASED IN DMAT 0315 AND ONLY NEEDS TO BE PURCHASED ONCE):**
- Required: MyMathLab Student Access Kit. Access kit should have already been purchased and used in DMAT 0315 and can also be used in Math 1314. MyMathLab access is *not* included with the purchase of a used book, and may not be included with the purchase of a new book. Therefore, use caution when purchasing your course materials. Microsoft Windows 7 and 8 users should use one of the following browsers with MyMathLab courses--Chrome, Firefox or Internet Explorer 10 and 9. For other system requirements go to

Students are required to have access to a TI-83 or TI-84 calculator. Graphing calculators may not be allowed during some examinations.

MyMathLab Technical Support:
It is the responsibility of the student to contact MyMathLab Technical Support to resolve any technical issues. Please visit the following website for assistance:
https://www.pearsonmylabandmastering.com/northamerica/mymathlab/students/support/technical-support/index.html

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.

Core Objectives:
MATH 1314 develops the following Core Objectives:

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

Core Objective Development Statements: MATH 1314 develops **Critical Thinking, Communication**, and **Empirical and Quantitative Skills** by requiring students to solve and analyze applications of various functions and systems of equation.

Grading Policy: Grades will be submitted via MyMathLab online homework/Ebook system.

Grading Rationale: A: 89.5-100 B: 79.5-89.4 C: 69.5-79.4 D: 59.5 – 69.4 F: 59.4 and below

Homework: 10%
Quizzes: 10%
Chapter Exams: 30%
Midterm Exam: 25%
Final Exam: 25%

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.

Policy on Missed Tests and Assignments: No make up exams will be given except in the case of extreme circumstances as determined by your instructor. Instructor will drop 5 homework grades at the end of the semester. Students are given 1 week extension for late homework and quizzes.
Attendance Policy:
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.

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 for food or drink.

ADDITIONAL RESOURCES
The Math Tutoring Center provides FREE TUTORING to current Eastfield College students enrolled in a Mathematics or Developmental Mathematics course. Students are encouraged to take advantage of this free resource for additional help in their course work. Please visit the Math Tutoring Center located in the Learning Commons in L200, check eastfieldcollege.edu/tutoring, or call 972-860-7174 for more information. In addition, TI-84 calculators are available for daily check-out in the library. Click on the following website for more information: https://www.eastfieldcollege.edu/services/academic-support/tutoring/pages/default.aspx

Learning Goals:
This is a mathematics course in which you will learn to use, understand, and communicate about mathematical information. The course has five goals:

- **Communication goal:** You will interpret and communicate quantitative information and mathematical concepts using language appropriate to the context and intended audience.
- **Problem Solving goal:** You will make sense of problems, develop strategies to find solutions, and persevere in solving them.
- **Reasoning goal:** You will reason, model, and make decisions with mathematical and quantitative information.
- **Evaluation goal:** You will critique and evaluate quantitative arguments that utilize mathematical and quantitative information.
- **Technology goal:** You will use appropriate technology in a given context.

**COURSE OUTLINE:**

<table>
<thead>
<tr>
<th>Sections</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 – 6.8</td>
<td>Radical Expressions and Functions; Rational Numbers as Exponents; Simplifying Radical Expressions, Addition, Subtraction, Multiplication and Division of Radical Expressions; Solving Radical Equations; Applications Involving Powers and Roots: Pythagorean Theorem; Increasing, Decreasing, and Piecewise Functions</td>
</tr>
<tr>
<td>7.1 – 7.5; 8.1 – 8.6</td>
<td>Symmetry; Transformations; The Complex Numbers; Quadratic Equations, Functions, Zeros, and Models; Analyzing Graphs of Quadratic Functions; Polynomial Functions and Models; Graphing Polynomial Functions; Polynomial Division; The Remainder Theorem and the Factor Theorem; Theorems about Zeros of Polynomial Functions; Rational Functions; Polynomial and Rational Inequalities</td>
</tr>
<tr>
<td>9.1 – 9.7</td>
<td>The Composition of Functions; Inverse Functions; Exponential Functions and Graphs; Logarithmic Functions and Graphs; Properties of Logarithmic Functions; Solving Exponential and Logarithmic Equations; Applications and Models; Growth and Decay; Compound Interest</td>
</tr>
<tr>
<td>11.2; 12.1 – 12.3, 12.7</td>
<td>Circles; Sequences and Series; Arithmetic Sequences; Geometric Sequences and Series; The Binomial Theorem</td>
</tr>
</tbody>
</table>

Revised: 6/21/19