**STEM Division**
Modular Math
MATH 1314-42745, 3 Credit Hours
College Algebra
Wintermester 2017-2018

Classes are Mon, Tues, Wed, Thurs, Fri
Meeting Dates: Dec 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, Jan 2, 3, 4, 5
Classes meet 6:00 p.m. to 9:00 p.m.
Room C314

| **INSTRUCTOR:** | Brad Payne |
| **OFFICE:**     | C-236 (Adjunct Office) |
| **TELEPHONE:**  | 972-391-1047 |
| **EMAIL:**      | brad.payne@sunnyvaleisd.com |
| **EMAIL POLICY:** | Will reply to emails within 24-48 hours on weekdays. |
| **OFFICE HOURS:** | None |

**INSTRUCTOR CONTACT INFORMATION**
My preferred method of contact is by email. Please keep in mind that it is against the law (FERPA) for me to discuss grades with you via phone or email. See me in person if you need to discuss your personal academic progress or grades in this course.

**Course Description:**
This course is an in-depth study and applications of polynomial, rational, radical, exponential, logarithmic, absolute value and piecewise-defined functions, and systems of equations using matrices. Also covered are the graphing calculator, non-linear inequalities, sequences and series, circles, the Binomial Theorem and a review of the classification of the real number system. (3 or 4 LEC) 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 Lec.)

**PREREQUISITE**
Two years of high school algebra and an appropriate assessment score or Developmental Mathematics 0310.

**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 knowledge of polynomial, rational, radical, exponential, logarithmic, absolute value and piecewise-defined functions.
- Solve polynomial (including equations reducible to quadratic), rational, radical, exponential (including same base and different bases), logarithmic and absolute value equations related to these functions.
- Solve polynomial, rational and absolute value inequalities.
3. Use graphing techniques, including, but not limited to, the use of a graphing calculator: increasing/decreasing/constant intervals, symmetry, even/odd functions, transformations (including translations, reflections, stretching and shrinking), completing the square, and finding relative maxima and minima graphically.
- Recognize and be able to graph the basic equation of a circle.
4. Use the different theorems of polynomials (including the Rational Zeros Theorem) to evaluate all roots of higher degree polynomial and rational functions.
5. Recognize and solve systems of linear equations and their applications using matrices.
6. Demonstrate an understanding of sequences and series, including finding nth term & partial sums for arithmetic and geometric sequences.
7. Use the Binomial Theorem to expand binomials.
8. Recognize the different classifications within the real and complex number systems.

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.

**COURSE INTRODUCTION**
You have enrolled in a Modular Mathematics class. This mode of instruction has distinct differences from others. In this course, you will work through individualized computer-based modules with the support and guidance of two instructors. You will receive both one-to-one assistance and full group instruction. This is not a self-paced class although there are some elements of that mode of instruction. You can always work ahead, however, deadlines will be enforced. Don’t fall behind.

**COURSE MATERIALS**
- My Math Lab Website
- Students must provide their own personal headphones for watching instructional videos during class

**CALCULATOR**
A graphing calculator is required for this course. You may choose your own graphing calculator model; however, TI 83 or TI 84 version is strongly preferred. Graphing calculators may not be allowed during some examinations.

**GRADING RATIONALE**
A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: below 60%
GRADING POLICY
Your grade will be determined as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Core Artifact Assignment</td>
<td>5%</td>
</tr>
<tr>
<td>Attendance and Participation*</td>
<td>10%</td>
</tr>
<tr>
<td>Homework and Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Module Tests</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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</table>

*All students must achieve a minimum of 70% in this area to pass this course.

MASTERY LEARNING
Mastery learning is a major tenant of this course. This means that you will not be able to proceed to the next topic until you have mastered the skills being covered. All homework and quizzes require mastery. For the purpose of this course, mastery is defined as a minimum score of 80%.

POLICY ON MISSED TESTS AND ASSIGNMENTS
All assignments have strict deadlines. Due dates are non-negotiable and can be viewed in My Math Lab.

Core Artifact Assignment
This assignment will be administered in class. It is a required, departmental assessment of the core objectives described above.

INSTRUCTIONAL COMPONENTS
In this course, you will meet once a week in a traditional lecture classroom and the other day of the week you will meet in a computer lab. On the lecture meeting day, you will receive lecture instruction to prepare you for that week’s assignments. On the computer lab day, you will work on My Math Lab assignments and receive assistance from your instructor and tutor as needed. The course will follow the format below.

1. Videos (optional) – Video lectures reinforce lecture objectives and may be accessed as necessary
   - Grade omitted from course average
   - Can be viewed outside of class
   - Headphones required to view in class

2. Homework – Consists of problems from each section
   - Problem can be repeated until mastered – select “Similar Exercise” after each 3rd incorrect attempt
   - All “Help” buttons available
   - Can be accessed after due date
   - Late problems penalized 10%
   - Must be in “Homework,” not “Review” mode to save progress
   - Problems saved individually
   - Can be completed outside of class
   - 80% mastery required to proceed to next topic

3. Quiz – Consists of problems that summarize multiple sections
   - Problem can be repeated until mastered – select “Similar Exercise” after each 3rd incorrect attempt
   - “Help” buttons not available
   - Can be accessed after due date
   - Late problems penalized 10%
   - Must be in “Homework,” not “Review” mode to save progress
   - Problems saved individually
   - Can be completed outside of class
1. 80% mastery required to proceed to next topic

4. Test Review (optional) – Helps prepare students for module test
   - Score omitted from student grades
   - Can be accessed after due date
   - Can be completed outside of class

5. Test – Assesses student understanding of module
   - Can be completed outside of class
   - Reviewed by student only immediately after submission
   - Late submission not allowed

6. Test Remediation (if necessary) – Practice skills not mastered
   - Contains only problems not mastered in module test
   - Each problem not mastered creates 2 similar remediation problems
   - Score omitted from student grades
   - 80% mastery required to access 2nd test attempt
   - Can be completed outside of class

7: 2nd Test Attempt (if necessary) – Retest module concepts
   - Can be completed outside of class
   - Reviewed by student only immediately following submission
   - Lower Score (1st or 2nd attempt) omitted following 2nd attempt

8: Test Remediation II (if necessary) – Practice skills not mastered
   - Homework assignment containing only problems not mastered in 2nd module test attempt
   - Each problem not mastered creates 2 similar remediation problems
   - Score omitted from student grades
   - 80% mastery required to access 3rd test attempt
   - Can be completed outside of class

9: 3rd Test Attempt (if necessary) – Final test attempt permitted
   - Can be completed outside of class
   - Reviewed by student only immediately following submission
   - Lowest test attempt scores are omitted

MIDTERM AND FINAL EXAM
After you have mastered the first two modules, you will be prepared to take the midterm exam. The midterm exam will be administered in class on the date indicated on the schedule. If you have not completed any homework, quizzes, or tests from modules 1 or 2 by the date indicated on the schedule, you will be given a grade of zero on those assignments. You can increase your grade on these past due assignments following the late submission guidelines described above. Late midterm exam submissions are not accepted under any circumstance.

After you’ve mastered the remaining course modules, you will be prepared to take your comprehensive final exam. Since the final exam is comprehensive, you may not take the final exam until you’ve completed all module coursework including homework, quizzes, and tests. If you have not completed homework, quizzes, or tests for modules 3 or 4 by final exams week, you will be given a final grade of zero on those past due assignments. Late final exam submissions are not accepted under any circumstance.

Midterm and Final Exam Policies:
- Bring instructor approved calculator, scantron, pencil and eraser
- Written exam, not computer based
- Must be completed independently
- No remediation option
- One attempt for each
INDEPENDENT PRACTICE
The majority of each computer lab meeting is reserved for student classwork. During this time you can work on module assignments at your own pace. If you need assistance, use the coaster to indicate that you need help. An instructor or tutor will go to your workstation to help you as soon as possible. This class time may not be sufficient to complete all assignments. With the exception of the midterm and final exams, all assignments can be completed outside of class time. To remain on track or get ahead, continue practicing concepts outside of class.

Drop Date:
Last date to drop with a grade of “W” is Friday, December 22nd.

Standard of Conduct/Classroom Etiquette:
No food, drinks or tobacco products are allowed in Eastfield College classrooms.

ADDITIONAL RESOURCES
Calculator Checkout Policy for Eastfield College Modular Math Courses
Modular Math students have calculators available to check out during class at the instructor’s discretion. The calculator checkout policy is designed to ensure access for students in classes and to make sure the equipment remains in good condition. In order to checkout a calculator students must exchange a picture ID or Driver’s License (car keys or a cell phone may be used to checkout calculators at the instructor’s discretion).

- All calculators must be checked out during class and returned by the end of class. Calculators are not available for checkout outside of the students’ assigned class time.
- Students are not allowed to check out calculators for other students.
- Calculators will be tracked by number. According to the assigned calculator number, students will be asked to initial their name on the checkout form.
- At the end of the class period all students are responsible for returning the calculator they checked out.
- The student who most recently checked out a calculator which is found to be lost, damaged, or stolen will be responsible for replacing the calculator. Further, if the calculator is not replaced by the end of the semester, a registration block will be placed on the student’s record until the calculator is replaced.

**Math tutoring is available in the second floor of the library (L200). Students are encouraged to take advantage of this service for additional help in their course work. In addition, TI-84 calculators are available for daily check-out in the library.

INSTITUTIONAL POLICY AND SERVICES:
Institutional Policies relating to this course can be accessed from the following link:

Course Coverage:

<table>
<thead>
<tr>
<th>Sections</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1, 1.5-1.7, 2.1-2.2, 2.5-2.8</td>
<td>Real number system, Equations, Relations and Functions; Circles</td>
</tr>
<tr>
<td>3.1-3.6</td>
<td>Polynomial and Rational functions; Theory of Functions</td>
</tr>
<tr>
<td>4.1-4.5</td>
<td>Exponential, Logarithmic and Special functions</td>
</tr>
<tr>
<td>6.3-6.5, 8.1-8.3, 8.5</td>
<td>Progressions, The Binomial Theorem, Matrices, Determinants, mathematical reasoning skills, Sequences, Series and Applications</td>
</tr>
</tbody>
</table>

Revised: 08/11/2017