COURSE: MAT 110 | EFFECTIVE DATE: August 2015 | NEXT REVIEW DATE: August 2016

TITLE: College Algebra | CREDITS: 3 | CONTACTS: 3 0 3

PREREQUISITES: Acceptable placement score or completion of MAT 102 with a grade of "C" or better

DESCRIPTION: This course includes the following topics: Polynomial, rational, logarithmic, and exponential functions; inequalities; systems of equations and inequalities; matrices; determinants; and solutions of higher degree polynomials.


MATERIALS (specifying those to be purchased by student): Graphing and/or scientific calculators are required.

COLLATERAL READING: None

CLASS MANAGEMENT ACTIVITIES (Attendance, tardies, testing, academic dishonesty, etc.):

Academic Dishonesty: Students are expected to do their own work. Please refer to the NETC Student Code and Grievance Procedure for a definition of academic dishonesty and an outline of the disciplinary action that may result.

Attendance: Students are expected to attend all scheduled classes and are responsible for all classwork, homework, notes, etc., whether or not they are present. In the event of extenuating circumstances, such as illness, the student is allowed to miss up to 8 hours. The student will be dropped after missing more than 8 hours of the scheduled classes. If an instructor drops a student for excessive absences at any time during the semester, a grade of “F” will be assigned. If the student withdraws from the course, a grade of “W” or “WF” will be assigned as outlined in the college catalog.

Tardies: A student is considered tardy if he/she is not present for roll call, which is taken at the beginning of class. Three tardies constitutes one (1) hour of absence.

Make-up Test Procedure: No make-up tests are given except in extenuating circumstances. The student is responsible for contacting the instructor prior to the time the test is scheduled to arrange a meeting to discuss the process of making up the missed test.
Student ID:
It is mandatory that every student wear his or her student ID at all times. During the first week of classes, the instructor will issue a reminder to wear the ID. This reminder is a warning.

After the first week of classes, instructors are required to dismiss students without ID from class. The student may get his/her ID (or a new one in Student Services for $3.00) and return to class before the midpoint of the class. If the student cannot get his/her ID and return to class by midpoint, the instructor will record the absence.

DISABILITIES STATEMENT:
Students with disabilities are encouraged to contact the Dean of Student Services to discuss needs or concerns as they pursue an academic program and participate in campus life. The Dean of Student Services will provide guidance regarding official documentation of disabilities and/or accommodation of needs. (See College Catalog)

Classroom Etiquette:
1. Electronic communication devices (pagers, cell phones, etc.) are not allowed in the classroom. On-call emergency personnel should see the instructor for an exemption.

2. No visible food or drinks are allowed in the classrooms.

3. No radio or headphones are allowed in the classrooms.

RESOURCES (AV, persons, tools/equipment):

COURSE TOPICAL OUTLINE: (List topics and sub-topics of course) and Calendar or approximate length of time devoted to topic.

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<th>PAGES</th>
<th>SUGGESTED PROBLEMS</th>
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<td>1</td>
<td>2.1</td>
<td>Basics of Functions and Their Graphs</td>
<td>P.210-223</td>
<td>P.224-228: 1-91 odd</td>
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<td>2.2</td>
<td>More on Functions and Their Graphs</td>
<td>P.229-237</td>
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<td>2.5</td>
<td>TEST 1 (2.1-2.2) Transformations of Functions</td>
<td>P.270-281</td>
<td>P.282-285: 1-118 odd</td>
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<td>2</td>
<td>2.6</td>
<td>Combination of Functions; Composite Functions</td>
<td>P.286-297</td>
<td>P.297-300: 1-82 odd</td>
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<td>2.7</td>
<td>Inverse Functions</td>
<td>P.300-308</td>
<td>P.309-311: 1-52 odd</td>
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<td>3</td>
<td>3.1</td>
<td>TEST 2 (2.5-2.7) Quadratic Functions</td>
<td>P.330-342</td>
<td>P.343-347: 1-73 odd</td>
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### Course Outline

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| 5    | 3.2     | Polynomial Functions and Their Graphs | P.347-359 | P.360-364: 1-64 odd  
P.373-376: 1-46 odd |
|      | 3.3     | Dividing Polynomials               | P.364-373 |                     |
| 6    | 3.4     | Zeroes of Polynomials              | P.376-386 | P.386-390: 1-52 odd  |
| 7    | 3.5     | **TEST 3 (3.1-3.4)** | Rational Functions and Their Graphs | P.391-405 | P.406-410: 1-88 odd |
| 8    | 3.6     | Polynomials and Rational Inequalities | P.410-419 | P.420-422: 1-60 odd  |
| 9    | 4.1     | **TEST 4 (3.5-3.6)** | Exponential Functions | P.442-451 | P.451-455: 1-68 odd |
| 10   | 4.2     | Logarithmic Functions              | P.455-465 | P.465-468: 1-100 odd  
P.477-478: 1-82 odd |
|      | 4.3     | Properties of Logarithms           | P.469-476 |                     |
| 11   | 4.4     | Exponential and Logarithmic Equations | P.479-489 | P.489-493: 1-106 odd  
P.504-508: 1-46 odd |
|      | 4.5     | Exponential Growth and Decay; Modeling Data | P.494-503 |                     |
| 12   | 8.1     | **TEST 5 (4.1-4.5)** | Systems of Linear Equations in Two Variables | P.792-802 | P.803-808: 5-42 odd |
| 13   | 8.2     | Systems of Linear Equations in Three Variables | P.808-813 | P.813-816: 5-18 odd  
P.928-930: 1-40 odd |
|      | 9.5     | Determinants and Cramer’s Rule     | P.918-927 |                     |
| 14   | 8.5     | Systems of Inequalities            | P.837-847 | P.847-850: 27-61 odd  
P.900-903: 1-44 odd |
|      | 9.3     | Matrix Operations                  | P.888-899 |                     |
| 15   |         | **TEST 6 (8.1-8.2,8.5,9.1-9-2)** | Review Final Exam |                     |

**Cramer’s Rule – Optional**

**STUDENT LEARNING OUTCOMES/OBJECTIVES OF COURSE:** The student will be able to:

1. solve algebraic equations and inequalities

2. evaluate and graph algebraic relations and functions.
COLLEGE WIDE COMPETENCIES: Apply mathematical/computational skills to solve problems.

GENERAL EDUCATION OUTCOMES: Graduates will be able to:
1. use a systematic approach to solving problems.

INSTRUCTIONAL METHODS TO COMPLETE OBJECTIVES: Lectures covering course topics will be supplemented by exercises to be completed outside of class. Emphasis will be placed on problem solving techniques and understanding underlying theory.

EVALUATIVE METHODS TO APPRAISE OBJECTIVES: Chapter or topical tests and a departmental final exam will be given. The average of the chapter tests will constitute 80% of the student’s final grade in the course and the final exam will constitutes the remaining 20% of the grade. A final exam will be given and NO test grades will be dropped.

GRADING SCALE: The grade point scale that will be used is as follows:

100 - 93 = A
92 - 85 = B
84 - 77 = C
76 - 70 = D
Below 70 = F