**Course Purpose**
This course is designed to assist students to become informed, critical, and creative thinkers who communicate effectively. Students who successfully complete MAT 107 will also meet general education goals and objectives as well as the course objectives.

**Catalogue Description**
Prerequisite: MAT 098 with a minimum grade of “C” OR a minimum score of 22 on the mathematics portion of the ACT OR a minimum score of 530 on the mathematics portion of the SAT OR a passing score on the EKU MAT 107 Prerequisite Skills Test. Real and complex numbers, integer and rational exponents, polynomial and rational equations and inequalities, graphs of functions and relations, exponential and logarithmic functions, systems of equations, matrices. Use of graphing calculator. 3 hours credit. Gen. Ed. II, VII (QS)

**Required Materials**

**Graphing Calculator:** A TI-84 is strongly recommended. A TI-83, TI-85, or TI-86 may be used. The instructor will use a TI-84.

**General Education Goals**
This course contributes to the following EKU General Education goals.
Students will be able to
- Use appropriate methods of critical thinking and quantitative reasoning to examine issues and to identify solutions. (Goal two)
- Distinguish the methods that underlie the search for knowledge in the arts, humanities, natural sciences, history, and social and behavioral sciences. (Goal seven)
- Integrate knowledge that will deepen their understanding of, and will inform their own choices about, issues of personal and public importance. (Goal eight)

In particular, the General Education Objectives for achieving Goal two include the following:
1. Using mathematical methods to state and solve quantitative problems, including those stated in verbal form.
2. Using numerical and graphical data to make reasonable and valid conclusions.
3. Applying mathematical methods to real-life problems.

**General Education Student Learning Outcomes**
(1) Students in quantitative general education courses will comprehend the major concepts, use appropriate terminology/notation, execute appropriate strategies for problem solving, and use appropriate mathematical/logical operations
(2) Students in quantitative general education courses will interpret the meaning of solutions and integrate relevant information.
**Course Objectives**
MAT 107 offers the student the opportunity to gain deeper understanding of algebraic relationships and processes as well as new and improved algebraic skills. Students who successfully complete MAT 107 should have the algebraic skills necessary for further study of mathematics (especially trigonometry and precalculus) or for applications of algebraic techniques in other fields. Upon successful completion of MAT 107, the student should be able to
- Simplify algebraic expressions.
- Solve linear and quadratic equations.
- Solve equations reducible to quadratic.
- Solve equations and inequalities involving absolute value.
- Solve systems of linear equations.
- Solve exponential and logarithmic equations.
- Find the roots of polynomial functions and solve polynomial equations.
- Graph linear, quadratic, exponential, logarithmic and polynomial functions.
- Perform complex number arithmetic.
- Use the graphing calculator to solve and graph various types of equations and inequalities.
- Find terms of sequences given the nth term.

**Homework and Course Expectations**
Students are expected to work all odd-numbered problems in each section covered unless instructed otherwise. Homework should be completed before the next class meeting unless otherwise specified by the instructor. Students should expect to spend a minimum of two hours outside of class studying for each hour in class.

**Attendance Policy**
Students are expected to attend every class meeting and will be held responsible for announcements made in class. Absences in excess of 10% of the scheduled class meetings (either excused or unexcused) may result in a lower course grade.

**Make-up Policy**
Students who miss a test will be allowed to take a general makeup test covering the entire semester if the absence is excused. This makeup is scheduled during the last week of classes. To qualify for the makeup test, a written excuse with verification from an official such as a doctor must be presented to the course instructor within one week of the absence; otherwise, a zero will be recorded.

**Help Available**
The Mathematics and Statistics Tutoring Center is located in Wallace 342, (859) 622-6508 V/TTY. This service includes tutoring, computer assisted instruction, videotape instruction, and instructional materials and is provided free of charge by the Department of Mathematics and Statistics. The staff will assist with homework completion, improving study skills, decreasing mathematics anxiety, and test preparation. Students are encouraged to take advantage of this facility. Current hours, locations, and phone numbers for the tutoring facilities on campus are found at http://www.advising.eku.edu/tutoring/hours/.

**Services for Individuals with Disabilities**
If you are registered with the Office of Services for Individuals with Disabilities, please obtain your accommodation letters from the OSID and present them to the course instructor to discuss any academic accommodations you need. If you are not registered with the OSID, please contact the Office in the Student Services Building Room 361, by email at disserv@eku.edu or by telephone at (859) 622-2933 V/TDD. Upon individual request, this syllabus can be made available in an alternative format.

**Grading Policy**
The midterm grade will be the average of all tests taken prior to midterm. Mid-term grades will be viewable online (EKUDirect/Student Services/Midterm Grades) on March 6, 2010. Each test is worth 100 possible points and the final exam is worth 200 points. Your instructor may give homework and/or quizzes that may count up to a total of 100 possible points. The course grade will be computed by dividing the total points earned by the total points possible. No test scores will be dropped or curved. The grading scale for the course is:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>90 - 100</th>
<th>80 - 89</th>
<th>70 - 79</th>
<th>60 - 69</th>
<th>&lt; 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Grade</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

In accordance with departmental policy, grades will not be posted or given over the telephone.

**Official E-mail**
An official EKU e-mail is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this EKU e-mail address.
Withdrawal

The last day to drop this class is Monday, January 18, 2010.
The last day to withdraw from this class is Friday, March 19, 2010.

Academic Honesty and Responsibility

1. Anyone violating the usual standards for academic honesty, for example, anyone attempting to obtain or exchange information regarding any quiz or test, or anyone using a fraudulent excuse to qualify for a make-up, may receive a course grade of 'F'.
2. Anyone behaving in a disruptive manner or refusing to follow the usual standards for academic behavior may be barred from attending class and may receive a course grade of 'F'.
3. Students are advised that EKU’s Academic Integrity policy will be strictly enforced in this course.
   The Academic Integrity policy is available at [www.academicintegrity.eku.edu](http://www.academicintegrity.eku.edu). Questions regarding the policy may be directed to the Office of Academic Integrity.

Department Policies

- During class, cell phones and pagers must be turned off or set to a silent mode.
- During resource-limited activities, such as in-class exams, students may not use the calculator function of a wireless communication device such as a cell phone or PDA.
- Any student enrolling in a multiple section course for which s/he has already received a grade of “D”, “F”, or “W” from the instructor who is teaching the section may change to a section taught by a different instructor by seeing the Chair of the Department of Mathematics and Statistics. This change must be completed by the end of the drop/add period.

If you need further information concerning this course, contact your instructor or the Mathematics Service Coordinator, Dr. Margaret Yoder (Wallace 306 or margaret.yoder@eku.edu).

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### MAT 107 TENTATIVE SCHEDULE Spring 2010 – TR

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 9:30 am – 10:45 am</td>
<td>Lab 8:25 am – 9:15 am Lecture 9:30 am – 10:45 am</td>
</tr>
<tr>
<td>1/12 Lecture: Introduction, 1 - 1</td>
<td>1/14 Lab: Quiz 1 Lecture: 1 - 2</td>
</tr>
<tr>
<td>1/19 Lecture: 1 - 3</td>
<td>1/21 Lab: Quiz 2 Lecture: 1 - 4</td>
</tr>
<tr>
<td>1/26 Lecture: 1 - 5</td>
<td>1/28 Lab: Quiz 3 Lecture: 1 - 6</td>
</tr>
<tr>
<td>2/2 Lecture: 2 - 1</td>
<td>2/4 Lab: Test 1 Lecture: 2 - 2</td>
</tr>
<tr>
<td>2/9 Lecture: 2 - 3</td>
<td>2/11 Lab: Quiz 4 Lecture: 2 - 4</td>
</tr>
<tr>
<td>2/16 Lecture: 2 - 5</td>
<td>2/18 Lab: Quiz 5 Lecture: 2 - 6</td>
</tr>
<tr>
<td>2/23 Lecture: 2 - 7</td>
<td>2/25 Lab: Test 2 Lecture: 3 - 1</td>
</tr>
<tr>
<td>3/2 Lecture: 3 - 2</td>
<td>3/4 Lab: Quiz 6 Lecture: 3 - 3 Midterm grades will be available online on 3/6.</td>
</tr>
<tr>
<td>3/9 SPRING BREAK</td>
<td>3/11 SPRING BREAK</td>
</tr>
<tr>
<td>3/16 Lecture: 3 - 4</td>
<td>3/18 Lab: Quiz 7 Lecture: 3 – 5 The last day to drop with a “W” is 3/19.</td>
</tr>
<tr>
<td>3/23 Lecture: 3 - 6</td>
<td>3/25 Lab: Test 3 Lecture: 4 - 1</td>
</tr>
<tr>
<td>3/30 Lecture: 4 - 2</td>
<td>4/1 Lab: Quiz 8 Lecture: 4 - 2</td>
</tr>
<tr>
<td>4/6 Lecture: 4 - 3</td>
<td>4/8 Lab: Quiz 9 Lecture: 4 - 4</td>
</tr>
<tr>
<td>4/27 Lecture: 7 - 1</td>
<td>4/29 Lab: General Makeup Lecture: Course Review</td>
</tr>
</tbody>
</table>

**The comprehensive, departmental final exam is Tuesday, May 4, 2010 from 3:30 to 5:30 pm.**

Delays will be announced on local TV and radio stations. You may also call 622-BADW (622-2239) or check the EKU web page ([www.eku.edu](http://www.eku.edu)).