

## MAT 115: College Algebra

**Course Number:** MAT 115

**Course Title:** College Algebra

**Credits:** 3:3

**Prerequisites/Corequisites:** None.

**For Whom Planned:** This course is part of the GEC mathematics requirement. It is a prerequisite course for MAT 120. You must receive a grade of C or better in this class to be able to move on to MAT 120. Credit cannot be earned for both this class and MAT 150.

### **Instructor Information:**

*Instructor:* Dr. Igor Erovenko ([igor@uncg.edu](mailto:igor@uncg.edu))

*Office Hours:* TR 11:00–12:30 and by appointment in Petty 106

**Bulletin Description:** Algebraic expressions, exponents, radicals, factoring, solving equations and inequalities, graphing, polynomial and rational functions.

**Student Learning Outcomes:** MAT 115 satisfies the Mathematics (GMT) requirement of the General Education Program. It is open to and appropriate for all undergraduate students, regardless of major. The General Education learning goals attached to the GMT marker are as follows:

- LG1 Foundational Skills: Think critically, communicate effectively, and develop fundamental skills in quantitative and information literacies.
- LG2 The Physical and Natural World: Understand fundamental principles of mathematics and statistics, and recognize their relevance in the world.

At the successful completion of this course, the student will be able to:

- SLO1 Reason in mathematical systems beyond data manipulation. (LG1, LG2)
- SLO2 Formulate and use mathematical models to solve real-world problems. (LG1, LG2)
- SLO3 Communicate mathematical solutions clearly and effectively. (LG1)

### *Course Objectives:*

- (1) Identify functions and their domains, describe their properties, and draw their graphs.
- (2) Give examples of piecewise functions.
- (3) Compute values of functions, solve algebraic equations and inequalities.
- (4) Compare and contrast one-to-one functions with non-invertible functions.
- (5) Combine different methods to find real and complex roots of polynomials.
- (6) Support and justify statements with mathematical arguments.

**Teaching Methods and Assignments for Achieving Learning Outcomes:** Abstract reasoning (SLO1) and clear, effective communication (SLO3) are a part of every lesson and homework in this course. The student, through regular and frequent attention to the lessons and homework questions, will make progress on each of these learning objectives. The formulation and use of mathematical models in real-world problems (SLO2) are integrated in the application of the fundamental techniques covered in the course. Homework questions are designed to reinforce these mathematics learning objectives.

The course material will be presented online at

<http://www.pearsonmylabandmastering.com>.

Achievement of learning outcomes will be facilitated via:

*Online homework assignments:* There will be a homework assignment for each section of the textbook covered. You may attempt each homework assignment as many times as you wish until it expires; only the highest score on each problem will count towards your grade.

*Online quizzes:* There will be eight quizzes, two quizzes per chapter. You will have two attempts at each quiz; only the highest score of the two will count towards your grade.

*Tests:* There will be four on campus multiple choice tests with each test covering one chapter. All tests will take place in Petty 136 at 5 pm on Thursdays. For the test dates see course calendar.

*Final exam:* The comprehensive final examination will be in the multiple choice format.

**Evaluation and Grading:** The primary student products are the tests and final exam. Due to the nature of the course, each test will address all of the SLOs. Specifically, SLO1 will be present in most of the questions. Several questions on each test will be designed to address SLO2 and SLO3. Since the final exam is cumulative, all of the SLOs will be addressed there. The student will demonstrate achievement of learning objectives through satisfactory completion of graded assignments and tests. The questions on graded assignments and tests are designed to evaluate each of the three learning objectives, and in this way the grade reflects the attainment of the objectives.

The following weight distribution is going to be used to determine your final grades.

Homework	20%
Quizzes	10%
Tests	40% (four at 10% each)
Final Exam	30%

Letter grades are assigned on a 10 point scale.

A+ : 97–100	B+ : 87–89	C+ : 77–79	D+ : 67–69		
A : 93–96	B : 83–86	C : 73–76	D : 63–66	F : 0–59	
A– : 90–92	B– : 80–82	C– : 70–72	D– : 60–62		

### Required Texts/Readings/References:

Mark Dugopolski, *College Algebra*, 6th ed., Pearson Education, 2015.

The actual printed textbook is optional, you are only required to purchase a MyMathLab access code. The code gives you access to an online version of the textbook, all online assignments, and various interactive learning aids. If you wish to have a traditional textbook, you should buy a bundle which consists of the book and the MyMathLab access code. The Course ID for our class is `erovenko79155`.

**Topical Outline/Calendar:** A calendar for the course containing sections of the textbook covered in class and due dates of all online assignments is given in Table 1.

Each homework assignment and quiz are available from the very first day of the semester; this allows you to be flexible in scheduling your studying time. You will not be able to access quizzes past their due dates; all homework assignments are accessible until December 1, but there is a 50% penalty for any homework submitted after its due date. There will be no make-ups for missed work, so you should start working on each assignment at least several days before it is due.

**Academic Integrity Policy:** You are expected to abide by the UNCG Academic Integrity Policy at all times, and any cases of academic dishonesty will not be tolerated. Each student is required to sign the Academic Integrity Policy on all major work submitted for the course.

*I have abided by the UNCG Academic Integrity Policy on this assignment.*

Signature \_\_\_\_\_ Date \_\_\_\_\_

More information can be found at

<http://sa.uncg.edu/handbook/academic-integrity-policy/>.

**Attendance Policy:** Regular and punctual attendance is expected. You are responsible for any missed work and material.

TABLE 1. Topical outline

Section	Homework Assignments	Quizzes	Tests
P.1	Homework 0.1 due 08/28/14		
P.2	Homework 0.2 due 08/28/14		
P.3	Homework 0.3 due 08/28/14	Quiz 1 due 08/29/14	
P.4	Homework 0.4 due 09/03/14		
P.5	Homework 0.5 due 09/05/14		
P.6	Homework 0.6 due 09/08/14		
P.7	Homework 0.7 due 09/09/14	Quiz 2 due 09/10/14	<b>Test 1 on 09/11/14</b>
1.1	Homework 1.1 due 09/15/14		
1.2	Homework 1.2 due 09/17/14		
1.3	Homework 1.3 due 09/19/14		
1.4	Homework 1.4 due 09/22/14	Quiz 3 due 09/24/14	
1.5	Homework 1.5 due 09/26/14		
1.6	Homework 1.6 due 09/29/14		
1.7	Homework 1.7 due 09/30/14	Quiz 4 due 10/01/14	<b>Test 2 on 10/02/14</b>
2.1	Homework 2.1 due 10/06/14		
2.2	Homework 2.2 due 10/08/14		
2.3	Homework 2.3 due 10/10/14	Quiz 5 due 10/15/14	
2.4	Homework 2.4 due 10/17/14		
2.5	Homework 2.5 due 10/20/14	Quiz 6 due 10/22/14	<b>Test 3 on 10/23/14</b>
3.1	Homework 3.1 due 10/28/14		
3.2	Homework 3.2 due 10/30/14		
3.3	Homework 3.3 due 11/04/14	Quiz 7 due 11/06/14	
3.4	Homework 3.4 due 11/11/14		
3.5	Homework 3.5 due 11/13/14	Quiz 8 due 11/18/14	<b>Test 4 on 11/20/14</b>

**Final Examination:** There will be a comprehensive final examination common to all sections of MAT 115 on Wednesday, December 3, 8:00–11:00 am. The location of the exam will be announced additionally at the end of the semester.

**Additional Information:**

*Calculator Policy:* You are allowed to use a non-graphing calculator only in this class.

*MyMathLab Support:* The MyMathLab Technical Support number is 1-800-677-6337. Also you can reach MyMathLab Tech Support 24/7 from the MyMathLab Sign In page: under *For Students*, click on *Support* and then click on *Live Chat*.

*Add/drop dates and holidays affecting this class:*

- (1) The last day to adjust your schedule with absolutely no penalty is Friday, August 22nd.
- (2) Withdrawing from this course between August 23rd and October 10 will use 3 out of the 16 hour withdrawal limit and will be indicated on a transcript with a grade of WX.
- (3) Dropping this course after October 10 or in excess of the 16 hour limit will result in a grade of WF, which is equivalent to a grade of F for your GPA.
- (4) Labor Day holiday is September 1, Fall Break is October 11–14, and Thanksgiving holiday is November 26–30.

*Students with Disabilities:* You are responsible for contacting the OARS in 215 EUC (334-5440, <http://ods.uncg.edu>) and for filling out the necessary forms if you wish to have special accommodations. Without these forms the services provided by the OARS will not be available. OARS cannot schedule or reschedule tests without consent from the instructor.

*Copyright Policy:* Selling or purchasing notes from classes for commercial gain is a violation of the UNCG Copyright Policy. Any student who sells notes taken in class for commercial gain, or who purchases notes taken by another student for commercial gain, is in violation of this policy and, by extension, is committing a violation of the Student Code of Conduct.

<http://sa.uncg.edu/handbook/student-code-of-conduct/>

*Free Tutoring:* The Department of Mathematics and Statistics provides free walk-in tutoring in the Curry 210 beginning August 25. For the details, see

<http://www.uncg.edu/math/mathhelpcenter>

*Student Success Center:* Find more academic support at the Student Success Center.

<http://success.uncg.edu/>

*Special Support Services:* Tutoring may be available from Special Support Services.

<http://success.uncg.edu/sss/tutoring.php>

## MAT 115: Explanation for GEC GMT Category Designation

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The content of MAT 115 is delivered in different formats, but with the exception of minor differences necessitated by the difference of format, the types of activities and assignments used to facilitate student achievement of the learning outcomes are the same. Due to the large class sizes of MAT 115, the predominant work products are multiple-choice quizzes and tests. The questions are carefully designed to ensure the successful student attains the three GMT learning objectives.