

College Algebra MATH 115

Fall 2018

Section 007

(Tuesday 12:00–12:50, 13:00–13:50; Thursday 13:00–13:50)

Section 010

(Tuesday 15:00–15:50; Thursday 14:00–14:50, 15:00–15:50)

Section 014

(Monday 15:00–15:50; Wednesday 14:00–14:50, 15:00–15:50)

INSTRUCTOR

Stanley Max
Lecturer in Mathematics

OFFICE

Department of Mathematics
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E-MAIL

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TELEPHONE AND FAX NUMBERS

(410) 704-3084

OFFICE HOURS

Mondays: 18:00–18:45; Tuesdays: 14:00–14:50, 16:00–16:50, 18:00–19:00;
Wednesdays: 18:00–18:45; Thursdays: 16:00–16:50

MY WEBSITE

I will sometimes post important and useful information pertaining to the course on my website. (For example, this syllabus is posted there.) To see the correct page, use this URL: www.stanleymax.net, then click on the tab that says “Course material.”

COURSE DESCRIPTION

Equations and the concept of function; linear, quadratic, higher-degree polynomial, exponential, logarithmic, rational, and power and root functions; complex numbers. Not open to those who successfully completed MATH 119. Prerequisites: qualifying score on Math Placement exam or MATH 102.

*** MATH 115 — College Algebra ***

LEARNING GOALS

This University core course is designed to meet these four learning goals:

- Construct and evaluate logical arguments
- Apply and adapt a variety of appropriate strategies to solve mathematical problems
- Recognize and apply mathematics in contexts outside of mathematics
- Organize and consolidate mathematical thinking through written and oral communication

COURSE OBJECTIVES

As a result of taking this course, students should learn about various types of mathematical functions. Students should also learn how to apply such functions to solving real-world problems in the life and physical sciences as well as in personal finance.

ONLINE TEXTBOOK

This semester we will be using a first-day tool called Direct Access, which the University Store offers through Blackboard. Direct Access includes both the textbook and MyMathLab, which is a required and important feature of the course.

Unless you opt out of Direct Access, you will be direct billed on your student account after the first two weeks of class. To access and review your materials for the class, log into your Blackboard account. If you do opt out, you still need to acquire MyMathLab by some other method. Using Direct Access will be less expensive for you.

The due dates for the online assignments are indicated in the schedule of topics further on in this syllabus, and they are also listed in your MyMathLab account when you log onto it. All the online homework assignments averaged together will count towards 15% of your final grade.

REQUIRED CALCULATOR

A graphing calculator is required for this course, and I recommend that students use some model of TI-83 or TI-84. You may use another make or model of graphing calculator (with some limitations), but I will teach using the TI-83/84. On my website, I have posted separate instructions as to the make and model of graphing calculator that I recommend and that I permit.

TESTS AND EXAMINATIONS

Overall, the tests (including the Final Exam) count for 80% of the grade. This means that each test is worth 20% of the overall course grade. The tests are split into two parts — the first part is a written assessment (15% of that test grade) and the second part is an online assessment (85% of that test grade). The written part is taken in the lab, on MyMathLab, with a LockDown Browser. If you fail to show up for a test, you must provide written documentation or else you will get a zero for that test.

A handwritten part of the test will take place usually the week before the online portion of the test.

Take note of the following examination schedule:

- Test 1 takes place during Week 4.
- Test 2 takes place during Week 8.
- Test 3 takes place during Week 12.
- The Final Exam takes place during Final Exam.

ATTENDANCE AND CLASS PARTICIPATION

Attendance will be taken at the beginning of every lecture and lab. Class participation will count for 5% of the course grade. **Students remain responsible for all instructional activity conducted in each class.**

Regarding absences, the university catalog makes this statement:

“It is policy of the university to excuse the absences of students for the following reasons:

- illness or injury when the student is unable to attend class
- religious observance where the nature of the observance prevents the student from attending class
- participation in university activities at the request of university authorities (e.g., Intercollegiate Athletics, Forensics Team, Dance Company, etc.)
- compelling verifiable circumstances beyond the control of the student

Students requesting an excused absence must provide documentation to the instructor two weeks prior to the scheduled absence when known in advance or as soon as possible when not known in advance.

*** MATH 115 — College Algebra ***

TUTORING

The Academic Achievement Center (ACC) makes tutoring services for this course available on a drop-in basis and by appointment. You can receive tutoring at the Mathematics Lab at 7800 York Road, Room 109. For detailed information, look at the ACC's website, located at this URL:

<https://www.towson.edu/aac/>

ACADEMIC INTEGRITY

This class is conducted in accordance with the Towson University Code of Student Conduct as described in the TU Catalog or accessed at the following website:

https://www.towson.edu/provost/academicresources/documents/03_01_00_student_academic_integrity_policy.pdf

This code prohibits all forms of dishonesty including cheating and plagiarism. Plagiarism is copying the words of another or using the ideas of another without proper citation. Cheating or plagiarism in any form is unacceptable and a penalty commensurate with the offense will be applied. The range of penalties includes deduction of points or rejection of the assignment, failure of the course, or a more severe disciplinary action by university authorities.

DIVERSITY

In accordance with the Towson University Strategic Plan, the Fisher College of Science and Mathematics Diversity Action Plan, and the Department of Mathematics Diversity Action Plan, everyone participating in this course is expected to be respectful of each other without regard to race, class, linguistic background, religion, political beliefs, sex, gender identity or expression, sexual orientation, ethnicity, age, veteran status, or physical ability. If you feel these expectations have not been met, please speak with your instructor or the designated diversity liaison.

DISABILITY SUPPORT SERVICES

Towson University is committed to providing equal access to its programs and services for students with disabilities, in accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with disabilities Act of 1990. To learn how to arrange for any appropriate accommodations, students with disabilities should visit the Disabilities Support Services (DSS) webpage at this URL:

<http://www.towson.edu/dss>

If you are a student with disabilities, then you have the responsibility to let me know that you have needs in this area. You will need a memo from DSS authorizing accommodations.

*** MATH 115 — College Algebra ***

DETERMINATION OF YOUR GRADE

GRADED COMPONENTS	
Test 1 (online portion)	17%
Test 1 (handwritten portion)	3%
Test 2 (online portion)	17%
Test 2 (handwritten portion)	3%
Test 3 (online portion)	17%
Test 3 (handwritten portion)	3%
Final Exam (online portion)	17%
Final Exam (handwritten portion)	3%
Online homework	15%
Class participation	5%

FINAL GRADE CUT-OFFS (where x is your overall score)	
A	$93\% \leq x \leq 100\%$
A-	$90\% \leq x < 93\%$
B+	$87\% \leq x < 90\%$
B	$83\% \leq x < 87\%$
B-	$80\% \leq x < 83\%$
C+	$76\% \leq x < 80\%$
C	$70\% \leq x < 76\%$
D+	$66\% \leq x < 70\%$
D	$60\% \leq x < 66\%$
F	$0\% \leq x < 60\%$

*** MATH 115 — College Algebra ***

SCHEDULE OF TOPICS

The rest of the syllabus contains a detailed list of the textbook sections that we will go over in class, as well as exam dates and the sections with which the exams will deal.

Week 1 (August 27 – August 31)	
<u>Lecture</u>	<u>Lab</u>
Syllabus and course outline. <i>Section P.2:</i> “Exponents and Scientific Notation” <i>Section P.3:</i> “Radicals and Rational Exponents”	Homework #1: Readiness for MATH 115, which shows how well prepared you may be to take this course — due on September 10 at 08:00. Homework #2, which covers Section P.2 — due on September 10 at 08:00. Homework #3, which covers Section P.3 — due on September 10 at 08:00.

September 03
Labor Day Holiday: No class

September 05
Change-of-schedule period ends Last day to drop a course with no grade posted to academic record Last day to add a course

Week 2 (September 04 – September 07)	
<u>Lecture</u>	<u>Lab</u>
<i>Section P.4:</i> “Polynomials” <i>Section P.5:</i> “Factoring Polynomials” (begin)	Homework #4, which covers Section P.4 — due on September 10 at 08:00.

*** MATH 115 — College Algebra ***

Week 3 (September 10 – September 14)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section P.5:</i> “Factoring Polynomials” (continued)</p> <p><i>Section P.6:</i> “Rational Expressions”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Homework #5, which covers Section P.5 — due on September 17 at 08:00.</p> <p>Homework #6, which covers Section P.6 — due on September 17 at 08:00.</p>

Week 4 (September 17 – September 21)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 1.2:</i> “Linear Equations and Rational Equations”</p> <p><i>Section 1.4:</i> “Complex Numbers”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Test 1 (covers Sections P.2–P.6)</p> <p>Homework #7, which covers Section 1.2 — due on September 24 at 08:00.</p> <p>Homework #8, which covers Section 1.4 — due on September 24 at 08:00.</p>

Week 5 (September 24 – September 28)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 1.5:</i> “Quadratic Equations”</p> <p><i>Section 1.6:</i> “Other Types of Equations”</p> <p><i>Section 2.1:</i> “Basics of Functions and Their Graphs”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Homework #9, which covers Sections 1.5 and 1.6 — due on October 01 at 08:00.</p> <p>Homework #10, which covers Section 2.1 — due on October 01 at 08:00.</p>

*** MATH 115 — College Algebra ***

Week 6 (October 01 – October 05)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 2.2:</i> “More on Functions and Their Graphs”</p> <p><i>Section 2.3:</i> “Linear Functions and Slope”</p> <p><i>Section 2.4:</i> “More on Slope”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Homework #11, which covers Section 2.2 — due on October 08 at 08:00.</p> <p>Homework #12, which covers Section 2.3 — due on October 08 at 08:00.</p> <p>Homework #13, which covers Section 2.4 — due on October 08 at 08:00.</p>

Week 7 (October 08 – October 12)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 2.5:</i> “Transformations of Functions”</p> <p><i>Section 2.6:</i> “Combinations of Functions: Composite Functions”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Homework #14, which covers Section 2.5 — due on October 15 at 08:00.</p> <p>Homework #15, which covers Section 2.6 — due on October 15 at 08:00.</p>

Week 8 (October 15 – October 19)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 2.7:</i> “Inverse Functions”</p> <p><i>Section 3.1:</i> “Quadratic Functions”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Test 2 (covers Sections 1.2, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, and 2.4)</p> <p>Homework #16, which covers Section 2.7 — due on October 22 at 08:00.</p> <p>Homework #17, which covers Section 3.1 — due on October 22 at 08:00.</p>

*** MATH 115 — College Algebra ***

Week 9 (October 22 – October 26)	
<u>Lecture</u> <i>Section 3.2: “Polynomial Functions and Their Graphs”</i> <i>Section 3.3: “Dividing Polynomials: Remainder and Factor Theorems”</i>	<u>Lab</u> Homework #18, which covers Section 3.2 — due on October 29 at 08:00. Homework #19, which covers Section 3.3 — due on October 29 at 08:00.

Week 10 (October 29 – November 02)	
<u>Lecture</u> <i>Section 3.4: “Zeros of Polynomial Functions”</i>	<u>Lab</u> Homework #20, which covers Section 3.4 — due on November 05 at 08:00.

November 05
Last day to withdraw with a grade of ‘W’ Last day to change to pass/fail option or audit options

Week 11 (November 05 – November 09)	
<u>Lecture</u> <i>Section 3.5: “Rational Functions and Their Graphs”</i>	<u>Lab</u> Homework #21, which covers Section 3.5 — due on November 12 at 08:00.

*** MATH 115 — College Algebra ***

Week 12 (November 12 – November 16)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 4.1:</i> “Exponential Functions” <i>Section 4.2:</i> “Logarithmic Functions”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Test 3 (covers Sections 2.5, 2.6, 2.7, 3.1, 3.2, and 3.3)</p> <p>Homework #22, which covers Section 4.1 — due on November 19 at 08:00.</p> <p>Homework #23, which covers Section 4.2 — due on November 19 at 08:00.</p>

Week 13 (November 19 – November 20)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 4.3:</i> “Properties of Logarithms”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Homework #24, which covers Section 4.3 — due on November 26 at 08:00.</p>

November 21 – November 23	
Thanksgiving Holiday: No classes	

Week 14 (November 26 – November 30)	
<p style="text-align: center;"><u>Lecture</u></p> <p><i>Section 4.4:</i> “Exponential and Logarithmic Equations” <i>Section 4.5:</i> “Exponential Growth and Decay; Modeling Data”</p>	<p style="text-align: center;"><u>Lab</u></p> <p>Homework #25, which covers Sections 4.4 and 4.5 — due on December 10 at 08:00.</p>

*** MATH 115 — College Algebra ***

Weeks 15 and 16 (December 03 – December 10)	
<u>Lecture</u> Catch up and review	<u>Lab</u>

Final Exam period (December 12 – December 18)
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