College Algebra
MATH 115

Section 005 (Monday, Wednesday, and Friday 12:00–12:50)

Section 006 (Monday, Wednesday, and Friday 13:00–13:50)

Section 104 (Tuesday 18:30–19:20; Thursday 18:30–20:20)

INSTRUCTOR

Stanley M. Max
Lecturer in Mathematics

OFFICE

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TELEPHONE AND FAX NUMBERS

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OFFICE HOURS

Mondays: 14:30–15:30; Tuesdays: 15:15–16:15; Wednesdays:1 4:30–15:30;
Thursdays: 15:15–16:15

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.

TEXTBOOK

One textbook is required for this course:

- Robert Blitzer, *Algebra and Trigonometry* 6th edition (Upper Saddle River NJ: Pearson, 2018). You will automatically get this book as an e-book via Direct Digital Access. This includes both the textbook and MyMathLab, which is a required and important feature of the course. The total price is $99.95, and that amount will be included on your semester bill. You will access this through Blackboard, and your instructor will explain how to do it.

Optional, and not required:

- In addition to the e-book, you may also purchase from the University bookstore a hard copy of the textbook in loose-leaf format for $30. You might want to wait a week or so before making that purchase, as many students find that the e-book and all of the extensive help provided in MyMathLab offers enough information to be successful in MATH 115. But the choice is yours.

Note: If you are retaking MATH 115 and have previously paid for an access code, you do not have to pay for it twice, as long as you do the following two things:

- You must opt out of Direct Digital Access, and you must do so by 23:00 on Sunday (September 10). Otherwise you are automatically enrolled in Direct Digital Access and you will owe for the cost of this access, even though you have paid for access in a previous semester.

- If you opt out, you will still need to acquire the textbook and MyMathLab directly from Pearson. To do this, you will need to immediately inform your instructor, who will contact MyMathLab on your behalf and get a new access code for you. You will then go into MyMathLab under your old account, and register for this semester's course.

REQUIRED CALCULATOR

A graphing calculator is required for this course. I have posted separate instructions as to the make and model of graphing calculator that I recommend on my website.

TESTS AND EXAMINATIONS

The testing for the course consists of three online tests and one online final exam. These tests and final exam are held in the lab.

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

Attendance will be taken at the beginning of every lecture and lab, and will count for 10% 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.

PREPARING FOR EXAMS AND LEARNING THE MATERIAL

To learn the material and prepare for the exams in this course, above all you should attend class regularly. Furthermore, the online homework assignments provide an excellent learning source, besides being an important component of the course grade.

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 105. 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/studentaffairs/policies/documents/code_of_student_conduct.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.

DETERMINATION OF YOUR GRADE

GRADED COMPONENTS	
Test 1	15%
Test 2	18%
Test 3	18%
Final Exam	20%
Online homework	19%
Attendance	10%

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	$0\% \leq x < 60\%$

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 28 – September 01)	
Lecture	**Lab**
Syllabus and course outline.	Teaching day in the lab.
Section P.2: "Exponents and Scientific Notation"	Homework #1, which covers Section P.2 — due on September 11 at 08:00.
Section P.3: "Radicals and Rational Exponents"	Homework #2, which covers Section P.3 — due on September 11 at 08:00.

September 06
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 08)	
Lecture	**Lab**
Section P.4: "Polynomials" *Section P.5:* "Factoring Polynomials" (begin)	Homework #3, which covers Section P.4 — due on September 11 at 08:00.

Week 3 (September 11 – September 15)	
Lecture	**Lab**
Section P.5: "Factoring Polynomials" (continued)	Teaching day in the lab.
Section P.6: "Rational Expressions"	Homework #4, which covers Section P.5 — due on September 18 at 08:00.
	Homework #5, which covers Section P.6 — due on September 18 at 08:00.

Week 4 (September 18 – September 22)	
Lecture	**Lab**
Section 1.2: "Linear Equations and Rational Equations" *Section 1.4:* "Complex Numbers"	**Test 1** (covers Sections P.2–P.6)

Week 5 (September 25 – September 29)	
Lecture	**Lab**
Section 1.5: "Quadratic Equations" *Section 1.6:* "Other Types of Equations" *Section 2.1:* "Basics of Functions and Their Graphs"	Teaching day in the lab. Homework #6, which covers Section 1.2 — due on October 02 at 08:00. Homework #7, which covers Section 1.4 — due on October 02 at 08:00. Homework #8, which covers Sections 1.5 and 1.6 — due on October 02 at 08:00. Homework #9, which covers Section 2.1 — due on October 02 at 08:00.

Week 6 (October 02 – October 06)	
Lecture	**Lab**
Section 2.2: "More on Functions and Their Graphs" *Section 2.3:* "Linear Functions and Slope"	Homework #10, which covers Section 2.2 — due on October 09 at 08:00. Homework #11, which covers Section 2.3 — due on October 09 at 08:00.

Week 7 (October 09 – October 13)	
Lecture	**Lab**
Section 2.4: "More on Slope" *Section 2.5:* "Transformations of Functions"	<u>Teaching day in the lab</u>. Homework #12, which covers Section 2.4 — due on October 16 at 08:00. Homework #13, which covers Section 2.5 — due on October 16 at 08:00.

Week 8 (October 16 – October 20)	
Lecture	**Lab**
Section 2.6: "Combinations of Functions: Composite Functions" *Section 2.7:* "Inverse Functions"	**Test 2** (covers Sections 1.2, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, and 2.4)

Week 9 (October 23 – October 27)	
Lecture	**Lab**
Section 3.1: "Quadratic Functions"	<u>Teaching day in the lab</u>. Homework #14, which covers Section 2.6 — due on October 30 at 08:00. Homework #15, which covers Section 2.7 — due on October 30 at 08:00. Homework #16, which covers Section 3.1 — due on October 30 at 08:00.

Week 10 (October 30 – November 03)	
__Lecture__	__Lab__
Section 3.2: "Polynomial Functions and Their Graphs"	Homework #17, which covers Section 3.2 — due on November 06 at 08:00.

November 06
Last day to withdraw with a grade of 'W'
Last day to change to pass/fail option or audit options

Week 11 (November 06 – November 10)	
__Lecture__	__Lab__
Section 3.3: "Dividing Polynomials: Remainder and Factor Theorems"	Teaching day in the lab. Homework #18, which covers Section 3.3 — due on November 13 at 08:00.

Week 12 (November 13 – November 17)	
__Lecture__	__Lab__
Section 3.4: "Zeros of Polynomial Functions" *Section 3.5:* "Rational Functions and Their Graphs"	**Test 3** (covers Sections 2.5, 2.6, 2.7, 3.1, 3.2, and 3.3)

Week 13 (November 20 – November 21)	
Lecture	**Lab**
Section 4.1: "Exponential Functions" *Section 4.2:* "Logarithmic Functions"	Teaching day in the lab. Homework #19, which covers Section 3.4 — due on November 27 at 08:00. Homework #20, which covers Section 3.5 — due on November 27 at 08:00. Homework #21, which covers Section 4.1 — due on November 27 at 08:00. Homework #22, which covers Section 4.2 — due on November 27 at 08:00.

November 22–24
Thanksgiving Day holiday: No class

Weeks 14 (November 27 – December 01)	
Lecture	**Lab**
Section 4.3: "Properties of Logarithms"	Homework #23, which covers Section 4.3 — due on December 04 at 08:00.

Weeks 15 and 16 (December 04 – December 11)	
Lecture	**Lab**
Section 4.4: "Exponential and Logarithmic Equations" *Section 4.5:* "Exponential Growth and Decay; Modeling Data"	Teaching day in the lab. Homework #24, which covers Sections 4.4 and 4.5 — due on December 13 at 08:00.

Final Exam week (December 13 – December 19)