College Algebra
MATH 115

Section 006
(Monday 13:00–13:50; Wednesdays 13:00–13:50 and 14:00–14:50)

INSTRUCTOR

Stanley Max
Lecturer in Mathematics

OFFICE

Department of Mathematics
7800 York Road

E-MAIL

smax@towson.edu

TELEPHONE AND FAX NUMBERS

(410) 704-3084

OFFICE HOURS

Mondays: 14:00–14:50; 17:00–17:50; Tuesdays: 19:00–19:50; Wednesdays: 17:00–17:50; Thursdays: 19:00–19:50

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.

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 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 Blackboard, I have posted separate instructions as to the make and model of graphing calculator that I recommend and that I permit.

ATTENDANCE AND CLASS PARTICIPATION

Attendance will be taken at the beginning of every lecture and lab, and 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.

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:

https://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 (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%
Attendance	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	$0\% \leq x < 60\%$

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 (January 28 – February 01)	
Lecture	**Lab**
Syllabus and course outline. *Section P.2:* "Exponents and Scientific Notation" *Section P.3:* "Radicals and Rational Exponents"	Homework #1: Readiness for MATH 115, which shows how well prepared you may be to take this course — due on February 11 at 08:00. Homework #2, which covers Section P.2 — due on February 11 at 08:00. Homework #3, which covers Section P.3 — due on February 11 at 08:00.

February 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 (February 04 – February 08)	
Lecture	**Lab**
Section P.4: "Polynomials" *Section P.5:* "Factoring Polynomials" (begin)	Homework #4, which covers Section P.4 — due on February 11 at 08:00.

Week 3 (February 11 – February 15)	
Lecture	**Lab**
Section P.5: "Factoring Polynomials" (continued) *Section P.6:* "Rational Expressions"	**Handwritten portion of Test 1** Homework #5, which covers Section P.5 — due on February 18 at 08:00. Homework #6, which covers Section P.6 — due on February 18 at 08:00.

Week 4 (February 18 – February 22)	
Lecture	**Lab**
Section 1.2: "Linear Equations and Rational Equations" *Section 1.4:* "Complex Numbers"	**Online portion of Test 1** (covers Sections P.2–P.6) Homework #7, which covers Section 1.2 — due on February 25 at 08:00. Homework #8, which covers Section 1.4 — due on February 25 at 08:00.

Week 5 (February 25 – March 01)	
Lecture	**Lab**
Section 1.5: "Quadratic Equations" *Section 1.6:* "Other Types of Equations" *Section 2.1:* "Basics of Functions and Their Graphs"	Homework #9, which covers Sections 1.5 and 1.6 — due on March 04 at 08:00. Homework #10, which covers Section 2.1 — due on March 04 at 08:00.

Week 6 (March 04 – March 08)	
Lecture	**Lab**
Section 2.2: "More on Functions and Their Graphs" *Section 2.3:* "Linear Functions and Slope" *Section 2.4:* "More on Slope"	Homework #11, which covers Section 2.2 — due on March 11 at 08:00. Homework #12, which covers Section 2.3 — due on March 11 at 08:00. Homework #13, which covers Section 2.4 — due on March 11 at 08:00.

Week 7 (March 11 – March 15)	
Lecture	**Lab**
Section 2.5: "Transformations of Functions" *Section 2.6:* "Combinations of Functions: Composite Functions"	**Handwritten portion of Test 2** Homework #14, which covers Section 2.5 — due on March 25 at 08:00. Homework #15, which covers Section 2.6 — due on March 25 at 08:00.

March 18 – March 22
Spring Break: No classes

Week 8 (March 25 – March 29)	
Lecture	**Lab**
Section 2.7: "Inverse Functions" *Section 3.1:* "Quadratic Functions"	**Online portion of Test 2** (covers Sections 1.2, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, and 2.4) Homework #16, which covers Section 2.7 — due on April 01 at 08:00. Homework #17, which covers Section 3.1 — due on April 01 at 08:00.

Week 9 (April 01 – April 05)	
Lecture	**Lab**
Section 3.2: "Polynomial Functions and Their Graphs"	Homework #18, which covers Section 3.2 — due on April 08 at 08:00.
Section 3.3: "Dividing Polynomials: Remainder and Factor Theorems"	Homework #19, which covers Section 3.3 — due on April 08 at 08:00.

April 08
Last day to withdraw with a grade of 'W'
Last day to change to pass/fail option or audit options

Week 10 (April 08 – April 12)	
Lecture	**Lab**
Section 3.4: "Zeros of Polynomial Functions"	Homework #20, which covers Section 3.4 — due on April 15 at 08:00.

Week 11 (April 15 – April 19)	
Lecture	**Lab**
Section 3.5: "Rational Functions and Their Graphs"	**Handwritten portion of Test 3** Homework #21, which covers Section 3.5 — due on April 22 at 08:00.

Week 12 (April 22 – April 26)	
Lecture	**Lab**
Section 4.1: "Exponential Functions" *Section 4.2:* "Logarithmic Functions"	**Online portion of Test 3** (covers Sections 2.5, 2.6, 2.7, 3.1, 3.2, and 3.3) Homework #22, which covers Section 4.1 — due on April 29 at 08:00. Homework #23, which covers Section 4.2 — due on April 29 at 08:00.

Week 13 (April 29 – May 03)	
Lecture	**Lab**
Section 4.3: "Properties of Logarithms"	Homework #24, which covers Section 4.3 — due on May 06 at 08:00.

Weeks 14 and 15 (May 06 – May 14)	
Lecture	**Lab**
Section 4.4: "Exponential and Logarithmic Equations" *Section 4.5:* "Exponential Growth and Decay; Modeling Data"	**Handwritten portion of the Final Exam** Homework #25, which covers Sections 4.4 and 4.5 — due on May 15 at 08:00.

Final Exam period (May 15 – May 21)