Intermediate Algebra
MATH 102.102

Fall 2018
(Tuesdays 17:00–17:50; Thursdays 17:00–17:50, 18:00–18:50)

INSTRUCTOR

Stanley M. Max
Lecturer in Mathematics

OFFICE

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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

MATH 102 is intended primarily for students who will use algebraic skills in future mathematics courses. Topics include factoring of polynomials, rational expressions and equations, graphs, relations and functions, radicals and exponents, and quadratic equations. Prerequisite: qualifying score on placement test or DVMT 101.

COURSE OBJECTIVES

MATH 102 is intended for students who plan to take either MATH 115 or MATH 119 as their Core Curriculum mathematics course. (See the requirements for your intended major.) You must earn a grade of C in MATH 102 in order to take the Core Curriculum mathematics course.

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TEXTBOOK

One textbook is required for this course:

- Michael Sullivan III, Katherine R. Struve, and Janet Mazzarella, *Elementary and Intermediate Algebra* 4th 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.

- 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 $35. 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 by the appropriate date and time. 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.

- In whatever way you register for MyMathLab, you also need a class code to MyMathLab, which is the following: max01234

- The due dates for the online assignments are 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.

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COURSE OBJECTIVES

As a result of taking this course, students should be able to carry out the following tasks:

- Factor accurately and completely

- Solve quadratic equations by factoring and applying the zero-product rule

- Determine the points where a rational function is not defined

- Simplify a rational expression

- Add, subtract, multiply, and divide rational expressions

- Solve rational equations

- Simplify complex fractions

- Differentiate between rational functions and rational equations

- Graph equations

- Determine the domain, range, and intercepts for a given function

- Determine whether a relation is a function

- Find the value of a dependent or of an independent variable for a given function

- Identify input and output for a function given as $f(a) = b$

- List, as ordered pairs, points that satisfy a given function

- Graph a linear function

- Find a solution to compound inequalities and express it as a set and as an interval as well as graph the solution on the number line

- Simplify radicals

- Operate on radicals

- Evaluate numerical expressions with negative or rational exponents

- Use the laws of exponents to simplify expressions

- Solve quadratic equations by using the quadratic formula

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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.

TESTING

The Final Exam is cumulative, but special emphasis will be given to Chapter 9 and Section 10.2.

We will cover one or two textbook sections during each class session. Keep up with your homework assignments. Do not wait until the last minute to complete them.

Dates for each in-class Unit Test will be announced two weeks before the scheduled test date, and are also shown in the class schedule that follows. Make-up tests will be given only in extraordinary and unavoidable situations. In order to take a make-up test, you must have documentation, and you must contact your instructor within 24 hours of the scheduled test. Otherwise your test grade will be zero.

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/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.

GRADING

This course earns three credits for graduation, but it does not satisfy a Core Curriculum requirement. The course grade is calculated by using the following percentages.

DETERMINATION OF YOUR GRADE

GRADED COMPONENTS	
Test 1	18%
Test 2	18%
Test 3	18%
Final Exam	26%
Online homework	15%
Attendance (lab and lecture)	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.

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Week 1 (August 27 – August 31)	
Lecture	**Lab**
Syllabus and course outline.	Homework #1, which covers Section 6.1 — due on September 10 at 08:00.
Section 6.1: "Greatest Common Factor and Factoring by Grouping"	Homework #2, which covers Section 6.2 — due on September 10 at 08:00.
Section 6.2: "Factoring Trinomials of the Form $x^2 + bx + c$"	

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)	
Lecture	**Lab**
Section 6.3: "Factoring Trinomials of the Form $ax^2 + bx + c, \quad a \neq 1$"	Homework #3, which covers Section 6.3 — due on September 10 at 08:00.
Section 6.4: "Factoring Special Products"	Homework #4, which covers Section 6.4 — due on September 10 at 08:00.

Week 3 (September 10 – September 14)	
Lecture	**Lab**
Section 6.5: "Summary of Factoring Techniques"	Homework #5, which covers Section 6.5 — due on September 17 at 08:00.
Section 6.6: "Solving Polynomial Equations by Factoring"	Homework #6, which covers Section 6.6 — due on September 17 at 08:00.

Week 4 (September 17 – September 21)	
Lecture	**Lab**
Chapter 6 Review	**Test 1** (covers Sections P.2–P.6)
Section 7.1: "Simplifying Rational Expressions"	Homework #7, which covers Chapter 6 Review — due on September 24 at 08:00.
	Homework #8, which covers Section 7.1 — due on September 24 at 08:00.

Week 5 (September 24 – September 28)	
Lecture	**Lab**
Section 7.2: "Multiplying and Dividing Rational Expressions"	Homework #9, which covers Section 7.2 — due on October 01 at 08:00.
Section 7.3: "Adding and Subtracting Rational Expressions with a Common Denominator"	Homework #10, which covers Section 7.3 — due on October 01 at 08:00.

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Week 6 (October 01 – October 05)	
Lecture	**Lab**
Section 7.4: "Finding the Least Common Denominator and Forming Equivalent Rational Expressions" *Section 7.5:* "Adding and Subtracting Rational Expressions with Unlike Denominators"	Homework #11, which covers Section 7.4 — due on October 08 at 08:00. Homework #12, which covers Section 7.5 — due on October 08 at 08:00.

Week 7 (October 08 – October 12)	
Lecture	**Lab**
Section 7.6: "Complex Rational Expressions" *Section 7.7:* "Rational Equations"	Homework #13, which covers Section 7.6 — due on October 15 at 08:00. Homework #14, which covers Section 7.7 — due on October 15 at 08:00.

Week 8 (October 15 – October 19)	
Lecture	**Lab**
Section 7.8: "Models Involving Rational Equations" *Chapter 7 Review*	**Test 2** (covers Sections 1.2, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, and 2.4) Homework #15, which covers Section 7.8 — due on October 22 at 08:00. Homework #16, which covers Chapter 7 Review — due on October 22 at 08:00.

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Week 9 (October 22 – October 26)

<u>Lecture</u>	**<u>Lab</u>**
Section 8.1: "Graphs of Equations" *Section 8.2:* "Relations" *Section 8.3:* "An Introduction to Functions"	Homework #17, which covers Section 8.1 — due on October 29 at 08:00. Homework #18, which covers Section 8.2 — due on October 29 at 08:00. Homework #19, which covers Section 8.3 — due on October 29 at 08:00.

Week 10 (October 29 – November 02)

<u>Lecture</u>	**<u>Lab</u>**
Section 8.4: "Functions and Their Graphs" *Section 8.5:* "Linear Functions and Models"	Homework #20, which covers Section 8.4 — due on November 05 at 08:00. Homework #21, which covers Section 8.5 — 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

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Week 11 (November 05 – November 09)

<u>Lecture</u>	<u>Lab</u>
Section 8.6: "Compound Inequalities" *Chapter 8 Review*	**Test 3** (covers Sections 2.5, 2.6, 2.7, 3.1, 3.2, and 3.3) Homework #22, which covers Section 8.6 — due on November 12 at 08:00. Homework #23, which covers Chapter 8 Review — due on November 12 at 08:00.

Week 12 (November 12 – November 16)

<u>Lecture</u>	<u>Lab</u>
Section 9.1: "Square Roots" *Section 9.2:* "*n*th Roots and Rational Exponents"	Homework #24, which covers Section 9.1 — due on November 19 at 08:00. Homework #25, which covers Section 9.2 — due on November 19 at 08:00.

Week 13 (November 19 – November 20)

<u>Lecture</u>	<u>Lab</u>
Section 9.3: "Simplifying Expressions Using the Laws of Exponents"	Homework #26, which covers Section 9.3 — due on November 26 at 08:00.

November 21 – November 23

Thanksgiving Holiday: No classes

Week 14 (November 26 – November 30)	
Lecture	**Lab**
Section 9.4: "Simplifying Radical Expressions Using Properties of Radicals"	Homework #27, which covers Sections 9.4 and 4.5 — due on December 03.
Section 9.5: "Adding, Subtracting, and Multiplying Radical Expressions"	Homework #28, which covers Section 9.5 — due on December 03 at 08:00.

Weeks 15 and 16 (December 03 – December 10)	
Lecture	**Lab**
Section 9.6: "Rationalizing Radical Expressions"	Homework #29, which covers Section 9.6 — due on December 12.
Section 10.2: "Solving Quadratic Expressions by the Quadratic Formula"	Homework #30, which covers Section 10.2 — due on December 12.
Chapter 9 and Chapter 10 Review	Homework #31, which covers Chapters 9 and 10 Review — due on December 12.

Final Exam period (December 12 – December 18)