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Math 103

College Algebra
Spring 2019

Mission

Central Methodist University prepares students to make a difference in the world by emphasizing academic and professional excellence, ethical leadership, and social responsibility.

Central Methodist University's Creed, Values, and Educational Goals can be found on pages 6-8 of the 2007-2008 Catalog. The University's policy on students with disabilities can be found on pages 27-28.

OVERVIEW

MA103 College Algebra. 3 hours. A study of equations and inequalities, functions and graphs, and systems of equations and inequalities.

PREREQUISITES

ACT Math subscore > 20 (Does not apply to Dual Credit Students)

OBJECTIVES

Students who successfully complete this course will:

1. Understand and be able to apply the mathematics of functional relationships
2. Understand and be able to apply the mathematics of quadratic equations
3. Be able to express findings in a mathematical format
4. Understand and use logarithmic functions and exponential scales
5. Solve systems of equations

TEXT

The following text is required:
Blitzer, Robert. College Algebra: An Early Functions Approach. Pearson Addison Wesley. 2007 (5^{th} ed.)

ATTENDANCE AND GRADING

Students are expected to attend all class meetings. Missing more than five class meetings will result in the final grade being reduced by one letter grade.

Final grades will be based on the following:

Quizzes (highest 5) :20 points each)	100
Exams (3 during semester & Final) :100 points each	400
TOTAL	500

Final exams will be mildly cumulative: 60% will cover the material since the second exam and the remaining 40% will cover material covered in the first two exams

A Word About Absences:

As college students you are considered adults capable of allocating your time among the different demands placed upon you by school, work, family, friends, and organizations. No one category of absence is any 'better' than another as they all result in you missing class and getting less of what you're in college to get. How you allocate your time is a good indication of what you consider most important to you, but keep in mind that if you're going into debt to finance your education you will be paying for the classes you take for a long time. If you're one of the 1 in 3 students who don't graduate within five years (see collegeresults.org), you'll be stuck with your student loan debt until you pay it or die.

DISABILITY SERVICES

The Center for Learning and Teaching (CLT) at Central Methodist University is committed to ensuring nondiscrimination and equal access to all programs, services, and activities for qualified students with a disability. Students requesting disability services must apply for accommodations through the CLT. Registration notification with the CLT is required for each semester or term that a student plans to use academic accommodations.

Please contact Teresa Argent, targent@centralmethodist.edu or by phone at 660-248-6287 for more details.

COURSE POLICIES

- Communications with students will be via e-mail. Make sure we have your e-mail address and be sure to check it often.
- All college and departmental policies on academic honesty will be strictly enforced. All cases will be reported to the Academic Dean of the university and to the Division Chair. In plain English, academic honest means that any work you submit for a grade (quizzes, exams, papers, reviews, etc.) will be you own work and that when you quote someone else's work, thoughts, or statements, that you give them the credit they are entitled to receive.
- Cell phone use should be discreet.

EXPLANATION OF THE CLASS

Traditionally, College Algebra has consisted largely of a repeat of Algebra II at the high school level. There are a few reasons for this. First, not everyone has taken Algebra II in high school. Second, not every Algebra II class covers the same material (although this is changing in the era of common curricular standards). Third, the material is useful and important and it's thought that repetition helps students learn it and, one hopes, be able to apply it someday down the road.

In this course we **will** be covering the traditional College Algebra topics, but we will do it by advancing the 'application sometime down the road' to the present time. It's my hope in this class that the question 'When am I ever going to use this sort of thing?' is answered before it's asked.

So how do we know how you're going to apply this stuff in your daily working life? Doesn't that imply that your future employment is scripted out, like in the movies or a TV sit-com? Obviously, you don't know exactly what the future holds for you so the applications used in this course are taken from the types of jobs many recent college graduates hold: program assistant (or manager) for a non-profit, sales representative, marketing assistant, and that occupational catchall (and boon to corporate payrolls everywhere) – the unpaid intern. The problems you'll solve will be similar to those you'll see in these types of jobs in the following ways:

- You'll have to specify what the problem is
- You'll need to decide which tools (concepts from College Algebra) to use
- You'll have to decide what information you need

In the world of textbooks the question is provided, it's a pretty sure guess that the tools you'll use are those in the material just before the question, and all the information you need is contained in the problem. In the 'real world' that all parents and professors go on and on about you don't have that luxury. (However, the potential rewards are far greater than a good grade in any course.)

STRUCTURE OF THE CLASS

Since this class is taken for academic credit, a portion of each class will be dedicated to the formal review of the material cited on the course schedule, followed by an occasional quiz over the material covered the previous class.

Course Schedule (tentative):

Week of:	Material	Class Events
Jan. 7	Review: basic rules of algebra, exponents, and radicals Chapter P.1-P.3	
Jan. 14	Polynomials, Factoring Polynomials, and Rational Expressions Chapter P.4-P.6	
Jan. 21	Linear Equations and Graphing Chapter 1.1-1.2	
Jan. 28	Models and Applications Chapter 1.3	Exam 1
Feb. 4	Complex numbers and Quadratic Equations Chapter 1.4-1.5	
Feb. 11	More on Quadratic Equations and Other types of Equations Chapter 1.6 and 3.1	
Feb. 18	Linear Inequalities and Absolute Value Inequalities Chapter 1.7	Exam 2
Feb. 25	Functions and their graphs, Linear Functions and slope Chapter 2.1-2.4	
Mar. 4	More on Slope and its applications in research and real life. (no text assignment)	
Mar. 11	Transformations and Combinations of Functions Chapter 2.5-2.6	
Mar. 18	Inverse Functions; Distance and Midpoint formulas & Circles Chapter 2.7 and 2.8	Exam 3
Mar. 25	Polynomial Functions and Their Graphs; Rational Functions and their Graphs Chapter 3.5 and 3.6	
Apr. 1	Modeling Using Variation Chapter 3.7	
Apr. 8	Exponential Functions & Exponential Growth and Decay Chapter 4.1 & 4.5	
Apr. 15	Systems of Linear Equations in 2-variables and in linear inequalities Chapter 5.1 and 5.5	
Apr. 22		
Apr. 29	Review	
May 6		**Final**