

Math 1428: Syllabus

1 Course Information

- Course Title: College Algebra With Applications
- Course Number: 1428
- Credit Hours: 3; Clinical Hours: 0; Lecture Hours: 3; Lab Hours: 0
- Meet Times: Tuesday, Thursday 11:00AM - 12:15PM
- Meet Location: BIC 2D07
- Course Description: Students will learn algebra with an emphasis on applications. This course should not be taken by students planning to enroll in calculus. Topics include, but are not limited to, matrices, functions, conic sections, polynomials, exponential and logarithmic functions, and sequences and series.
- Prerequisite: Demonstrated geometry competency (level 2), and MATH 0482 or college equivalent with a grade of C or better or a qualifying score on the mathematics placement test.

2 Instructor Information

- Name: Michael McCabe, M.S.
- Email: mccabem85@cod.edu
- Office: 3436B
- Office Phone: 630 942 2152
- Office Hours: Labeled on Blackboard (always available by appointment)

3 General Course Objectives

- 1 Determine the domain and range of relations and functions
- 2 Use function notation
- 3 Analyze graphs to determine the maximum and minimum values of a variety of relations and functions
- 4 Analyze graphs to determine when a variety of relations and functions are increasing and/or decreasing
- 5 Analyze graphs to determine the zeros of a variety of relations and functions
- 6 Determine the composite of two functions and the inverse of a one-to-one function
- 7 Construct the graphs of conic sections
- 8 Solve systems of linear equations
- 9 Perform matrix arithmetic
- 10 Determine the inverse of a nonsingular matrix

- 11 Solve exponential and logarithmic equations
- 12 Apply properties of logarithms
- 13 Determine terms of a sequence
- 14 Determine specific and general terms in arithmetic and geometric sequences
- 15 Determine sums of arithmetic and geometric series
- 16 Solve a variety of application problems relating to topics covered

4 Topical Outline

1. Relations and functions
 - a. Definition
 - b. Domain and range
 - c. Tables of values
 - d. Function notation
 - e. Composition of two functions
 - f. Graphs
 - g. Graphs of a function ii. Symmetry to the x-axis, y-axis or origin iii. Graphs with symmetry iv. Horizontal and vertical translations
 - h. Functions
 - i. Absolute value functions ii. Square root functions iii. Piecewise functions iv. Polynomial functions
 - j. Rational functions
 - k. Inverse of a function
 - l. Function notation for f^{-1} ii. Domain and range of f^{-1} iii. Graphs of f and f^{-1}
2. Analytic Geometry
 - a. Parabolas
 - b. Graphs of vertical and horizontal parabolas ii. Vertex and axis of symmetry
 - c. Circles
 - d. Center-radius form of the equation ii. General form of equation iii. Graphs
 - e. Ellipses
 - f. Hyperbolas
 - g. Systems of non-linear equations
3. Matrices
 - a. Definition and dimension
 - b. Operations with matrices
 - c. Addition and subtraction ii. Scalar multiplication iii. Matrix multiplication
 - d. Gaussian elimination
 - e. Inverse of a matrix
 - f. Solution of a linear system using matrix inverse
4. Exponential and logarithmic functions
 - a. Exponential functions

- b. Definition ii. Graphs iii. Exponential equations iv. Applications
 - c. Logarithmic functions
 - d. Definition ii. Graphs iii. Properties of logarithms iv. Logarithmic equations
 - e. Exponential equations vi. Change of base formula vii. Applications
5. Binomial expansion theorem
6. Sequences and series
- a. Definitions
 - b. n th term of a sequence
 - c. Arithmetic sequences and series
 - d. Definition ii. n th term of an arithmetic sequence iii. Formula for an iv. Sum of an arithmetic series
 - e. Geometric sequences and series
 - f. Definition ii. n th term of a geometric sequence iii. Formula for an iv. Sum of a geometric series
 - g. Sum of an infinite geometric series

5 Required Texts, Materials, and Supplies

- Required Text: MyLab Math with Pearson eText -- Access Card -- for College Algebra: Graphs and Models (24 Months)
 - ISBN: 9780135834480
- Access to MyLab Math is required. This means an access code must be purchased.

6 Schedule

- Spring Break: 3/27 to 4/2
- Finals: week of 5/15 (specific date will be announced on Blackboard)
- Exam Dates (tentative)
 - Exam 1 (2/21)
 - Exam 2 (3/14)
 - Exam 3 (4/13)

7 Method of Evaluation

Grading scale will be 90-80-70-60-50 A-B-C-D-F. I do round and no curve.

Homework 30 percent of the overall grade will be MyLab Math (MML) Homework. Every sections we cover in the course will be assigned a MyLab Math Homework assignment. Look under Section Schedule for the due dates for those assignments. **No extensions will be given for MML assignments. However, there will be at least 3 of the lowest scores will be dropped from the overall homework average.** This means, worse case scenario, if 3 section assignments are not complete, then those 3 assignments will not effect the overall homework average.

Exams 40 percent of the overall grade will be an in class exams. There will be three exams taking place on Mondays. The dates for the exams are listed in Section Schedule. **There are no retakes for exams or test corrections for exams.** Students with accommodations (from the department of access and accommodations) are required to email me proper paperwork as needed. If unable to make it to the exam (excuse not required but accepted) the notification must be given prior to the time of the exam.

Final 20 percent of the overall grade will be an in class final exam. The date and time of the final exam will be announced in Blackboard. The exam will contain all the material covered in the class.

In-Class 10 percent of the overall grade will be an in class assignment. This will be something like an problem is provided and with a smart device the worked out problem will be photographed and uploaded to Blackboard. The assessment will be graded on completion.

8 Academic Honesty

As members of the College of DuPage community, we share a commitment to the highest standards of learning and ethical behavior. The College and its faculty strive to build meaningful and productive relationships with our students. The expectation of honesty and effort is the foundation of that relationship. Academic dishonesty damages the learning partnership built between student and faculty and is considered a serious breach of the principles of learning and growth. Violations of the Code of Academic Conduct will be dealt with appropriately and may become part of a student's educational record. Please don't risk it! For further information about the expectations, please review the Code of Academic Conduct found at the following website: Code of Academic Conduct.

9 Access and Accommodations

- As a course policy, I do not accept late work/make up for My Open Math assignments, attendance, and participation. I am committed to providing fair, equal, and unbiased accommodations. If you believe that your circumstances qualify you for accommodations, please contact the Center for Access and Accommodations at access@cod.edu. Staff from the Center can help you better understand if your situation qualifies you for an accommodation.
- If you are student who is registered with the Center for Access and Accommodations, please send me your Letter of Accommodation as soon as possible.
- Please do not send me personal medical records or similar personal documents.
- Here is a to start the process for accommodations: Center for Access and Accommodations Intake Form (https://cod-accommodate.symlicity.com/public_accommodation/).

The College of DuPage is committed to the equitable access of educational opportunities for students with disabilities in accordance with The Americans with Disabilities Act, As Amended and Section 504 of the Rehabilitation Act of 1973. Any student who feels they may need an accommodation on the basis of an illness, injury, medical condition, or disability should contact the Center for Access and Accommodations to determine eligibility for accommodations and to obtain an official Letter of Accommodation. The Center for Access and Accommodations can be reached via email at access@cod.edu. Students may also initiate a request for services by going to www.cod.edu/access and clicking on the green box labeled "complete form to request accommodations." If you are already registered with the Center for Access and Accommodations, please email me your Letter of Accommodation as soon as possible. Please DO NOT send any private health documentation or Doctor's notes to me.

10 Withdraw Policy

Withdrawal from a Class

The final day for a student to withdraw from any course will be equal to 75% of the time for the respective academic session (see the Registration Calendar) through MyAccess or in person at the Registration office, Student Services Center (SSC), Room 2221.

Administrative Withdrawal

After the deadline, students will be required to appeal for late withdrawal and provide appropriate documentation to the Student Registration Services Office for all requests. Students who are granted approval to withdraw by petition will not be eligible for refunds of tuition or fees and will receive a 'W' grade on their transcript. Appeals must be submitted prior to the designated final exam period for 16-week classes and before the last class meeting for all other session classes.

Coronavirus Information

Stay up to date with information provided by the college about alternative withdrawal policies. Coronavirus Information