MATH-0482-002: SYLLABUS

1. Course Information

- Course Title: Foundations for College Mathematics II
- Course Number: 0482
- Credit Hours: 5; Clinical Hours: 0; Lecture Hours: 5; Lab Hours: 0
- Meet Times: Monday, Wednesday, and Friday from 11:00 am to 12:25 pm
- Meet Location: BIC 2D04
- Course Description: Students will survey topics from elementary algebra and intermediate algebra. Topics include: operations with algebraic fractions, solving equations with the algebraic fractions, radicals and rational exponents, complex numbers, solving quadratic equations, variation, solving equations and inequalities involving absolute value, function notation, graphing functions, inverse functions, exponential and logarithmic functions, applications, and problem solving.
- Repeatable for Credit: NO
- Pre-Enrollment Criteria: N/A
- Prerequisite: Demonstrated geometry competency (level 2) and MATH 0481 (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)

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3. General Course Objectives

Upon successful completion of the course the student should be able to do the following:

1 Demonstrate the ability to reduce rational expressions

2 Demonstrate the ability to add, subtract, multiply, and divide rational expressions

3 Express complex rational expressions in simplest form

4 Solve equations containing rational expressions

5 Solve equations and formulas containing rational expressions for a designated variable

6 Use rational expressions in problem solving

7 Convert a radical expression into an exponential expression

8 Convert an exponential expression into a radical expression

9 Express radical expressions in simplest form

10 Demonstrate the ability to add, subtract, multiply, and divide radical expressions

11 Solve equations that contain radicals

12 Demonstrate the ability to add, subtract, multiply, and divide complex numbers

13 Use radicals and complex numbers in problem solving

14 Solve quadratic equations using factoring, completing the square, and using the quadratic formula

15 Use the discriminant to describe the nature of the roots

16 Solve equations that are in quadratic form

17 Use quadratic equations in problem solving

18 Solve direct, inverse, and joint variation problems

19 Solve absolute value equations and inequalities

20 Analyze relations and functions

21 Identify the domain and range of relations from a graph

22 Demonstrate use of function notation

23 Construct the graphs of linear, quadratic, square root, and absolute value functions

24 Construct the graphs of step functions in the context of applied problems

25 Find the inverse of a linear function

26 Evaluate an exponential function

27 Construct the graph of the exponential function

28 Evaluate a logarithmic function

29 Construct the graph of the logarithmic function

30 Convert an exponential expression to logarithmic form

31 Convert a logarithmic expression to exponential form

32 Solve problems using functions

4. Topical Outline

1.: Review of topics from Math 0481

2.: Algebraic fractions

    a.: Operations with fractions

        i.: Reducing fractions to lowest terms and finding equivalent fractions

        ii.: Multiplication and division of fractions

        iii.: Addition and subtraction of like fractions

        iv.: Addition and subtraction of fractions with different denominators

        v.: Simplification of complex fractions

    b.: Solution of algebraic equations involving fractions

        i.: Algebraic equations with one variable

            1.: Linear

            2.: Factorable quadratics

        ii.: Literal equations

        iii.: Applications

3.: Rational exponents and radicals

    a.: Definition of rational exponents and their radical form

    b.: Simplification of radicals

      c.: Equations involving radicals

      d.: Complex numbers

      e.: Applications

4.: Quadratic equations

      a.: Solutions of equations by factoring

      b.: Solutions of quadratic equations by completing the square

      c.: The quadratic formula and the use of the discriminant

      d.: Equations in quadratic form

      e.: Applications of the Pythagorean Theorem

5.: Variation

      a.: Direct

      b.: Inverse

      c.: Joint

6.: Absolute value equations and inequalities

7.: Functions

      a.: Definition, domain, and range

      b.: Function notation

      c.: Graphing functions

          i.: Linear functions

          ii.: Quadratic functions

          iii.: Absolute value functions

          iv.: Step functions

      d.: Inverse functions

      e.: Exponential functions

      f.: Logarithmic functions and their properties

      g.: Applications

5. Required Texts, Materials, and Supplies

- **Required Text**: Beginning and Intermediate Algebra by Sherri Messersmith.
- **Materials**: Access code for ALEKS, notebook for taking notes in class, writing tools, and if possible a internet enabled device.
- **Supplies**: Internet, extra notebooks, and extra writing tools

6. Schedule

6.1. Academic Calendar.

- First Day: 01/22/2024
- No Class: Spring Break 03/25/2024 to 03/31/2024
- Last Day to Withdraw: 04/14
- Final Exam: Wednesday, May 15 from 1100 to 1250

6.2. Exam Dates (Tentative).

- Exam 1: 02/16/2024
- Exam 2: 03/15/2024
- Exam 3: 04/12/2024

6.3. **Content Coverage.**

- Week 1 and 2 chapter 7
- Week 3 start chapter 8
- Week 4 some more of chapter 8 and exam 1
- Week 5 and 6 finish chapter 8 and start chapter 9
- Week 7 finish chapter 9 and start chapter 10
- Week 8 so more of chapter 10 and exam 2
- Week 9 more of chapter 10
- Week 10 Spring Break
- Week 11 finish chapter 10 and start chapter 11
- Week 12 more of chapter 11 and exam 3
- Week 13 finish chapter 11 review functions (section 4.6) and start chapter 12
- Week 14 finish chapter 12
- Week 15 to 16 finish chapter 13

7. METHOD OF EVALUATION

(1) Exams [Weight 40%]
   (a) No drops and no retakes.
(2) Quizzes [Weight 20%]
   (a) At least 3 drops and no retakes.
(3) ALEKS Homework Sets [Weight 10%]
   (a) At least three of the lowest scores will be dropped.
(4) Extra Assignments [Weight 10%]
   (a) Extra "Turn-In" assignments will be graded on correctness with no partial credit but unlimited attempts and hard due date.
   (b) Extra "In-Class" assignments will be graded on participation with soft due date.
   (c) At least three of the lowest scores will be dropped.
(5) Final Exam [Weight 20%]
   (a) Test on everything covered throughout the semester (Cumulative Exam).
   (b) Constructed to be completed during a 2 hour time limit on the scheduled Final Exam day.
   (c) I plan to construct the Final Exam with about 20 questions.
   (d) I plan to construct the Final Exam similar to twice the amount of a regular exam.

7.1. **Grade Scale.**

A: 90% to 100%
B: 80% to 89%
C: 70% to 79%
D: 60% to 69%
F: 59% or less

I do round.

8. Ultra Course View Pilot

Welcome to Math 0482! This course is part of a pilot program for Blackboard Ultra Course View, a user-friendly learning management system designed to enhance your online learning experience. You may engage with various newly available tools and features within the platform to access course materials, participate in discussions, submit assignments, and receive feedback. This pilot of Blackboard Ultra does not change course credits or the instructor established grading basis and course requirements.

Throughout the term, you may be asked to provide feedback through anonymous course surveys. Please be as candid as possible as this is an opportunity for both instructors and students to explore and provide feedback on the Blackboard Ultra Course View experience.

If you, at any time, experience any difficulties using the Ultra Course View, the College has technical support available just for you. Please send us an email at studentultrahelp@cod.edu. Staff are available during traditional business hours ($8am - 5pm$) and we will get back to you as soon as possible. For on-demand help, please use Blackboard Learn Help for Students –{} Ultra Course View.

9. 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.

10. 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.symplicity.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.

11. 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