

Course Description: In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.

Prerequisites: Appropriate TSIM scores or consent of the instructor.

Core Objectives:

Critical Thinking Skills

- to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

Communication Skills

- to include effective development, interpretation and expression of ideas through written, oral and visual communication

Empirical and Quantitative Skills

- to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

Learning Outcomes:

Upon successful completion of this course, students will:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, and inverses. (Assesses EQS with Quiz for Student Understanding of THECB Learning Outcome One)
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations. (Assesses CT, EQS, and COM with Quizzes to Demonstrate Mastery of THECB Learning Outcome Two and Learning Outcome Three B)
3. Apply graphing techniques. (Assesses CT, EQS with Quiz to demonstrate Mastery of THECB Learning Outcome 2)
4. Evaluate all roots of higher degree polynomial and rational functions. (Assesses CT and EQS with Quiz to demonstrate Mastery of THECB Learning Outcome Four)
5. Recognize, solve and apply systems of linear equations using matrices. (Assesses EQS with homework assignment followed by a quiz to check for understanding and mastery)

Methods of Instruction:

1. Reading assignments.
2. Online lecture notes.
3. Problem assignment.
4. Discussion of problems.

Grading Policies:

All assignments must be completed on MathXL at www.mathxl.com.

I will send you login information for MathXL when you send me a message in OpenLMS (aka Moodle).

Homework: 30% Math takes practice, and the importance of homework cannot be exaggerated.

Quizzes: 5% There are a few quizzes which cover the most foundational topics for the course.

Practice Tests: 5% Practice Tests are available for each of the regular tests and the Final Exam. They are generated with the exact same parameters as the real test, and you can take them as many times as you wish. If you take each practice test at least once before the actual test, you will get these 5 points on your overall grade.

Tests: 30% There will be three regular tests, taken during class time. I will reverse replace test grades, so that a test can replace the immediately prior test if the grade is higher. For example, if a student scores higher on the second test than the first, I will replace the first test's grade with the second. Also, if a student scores higher on the final than on the third test, then I will replace the third test's grade with the grade of the final.

Long story short, if you do poorly on one test, working hard and doing better on the next test will allow you to drop the poor test grade.

Final: 30% The final is comprehensive.

For those of you who like formulas, the above says that your numerical grade will be computed using the formula

$$\begin{aligned} \text{Your grade} = & .3 (\text{HW ave}) + 0.05 (\text{Quiz Ave}) + \\ & .05 (\text{Number of practice tests attempted at least once,} + 1 \text{ extra for Final Exam} \\ & \text{practice test})/5 + \\ & .3 (\max\{T1, T2\} + \max\{T2, T3\} + \max\{T3, \text{Final}\}) / 3 + \\ & .3 (\text{Final}). \end{aligned}$$

Grading Scale:	90-100	A
	80-89	B
	70-79	C
	60-69	D
	<60	F

All work is to be turned in on time. All the homework and quizzes are already open. If you know you will be busy around the due date of an assignment, then you can do the homework early. **Arrange with me beforehand to reschedule exams to be taken early. The final exam date cannot be changed.** (Part of the reason that I drop the lowest h/w, the lowest quiz, and reverse replace tests is to not penalize unexpected absences due to illness, being in jail, etc.)

STUDENT ACADEMIC INTEGRITY AND CLASSROOM ETHICS

Clarendon College is committed to a philosophy of honesty and academic integrity. It is the responsibility of all members of the Clarendon College community to maintain academic integrity at Clarendon College by refusing to participate in or tolerate academic dishonesty. Any act of academic dishonesty will be regarded by the faculty and administration as a serious offense. Academic dishonesty violations include, but are not limited to:

1. obtaining an examination, classroom activity, or laboratory exercise by stealing or collusion;
2. discovering the content of an examination, classroom activity, laboratory exercise, or homework assignment before it is given;
3. observing the work of another during an examination or providing answers to another during the course of an examination;
4. using an unauthorized source of information during an examination, classroom activity, laboratory exercise, or homework assignment;
5. entering an office, classroom, laboratory, or building to obtain an unfair advantage;
6. taking an examination for another person;
7. completing a classroom activity, laboratory exercise, homework assignment, or research paper for another person;
8. altering grade records;
9. using any unauthorized form of an electronic communication device during an examination, classroom activity, or laboratory activity; and/or,
10. plagiarism. (Plagiarism is defined as the using, stating, offering, or reporting as one's own an idea, expression, or production of another person's work without proper credit. This includes, but is not limited to, turning in a paper purchased or acquired from any source, written by someone other than the student claiming credit, or stolen from another student.)

Students are responsible for reporting known acts of academic dishonesty to a faculty member, the program coordinator, the vice president, and/or dean. Any student with knowledge of a violation who fails to report it shall him/herself be in violation and shall be considered to have committed an act of academic dishonesty.

While academic integrity and honesty are the responsibility of the individual student, each individual faculty member, teaching assistant, and/or laboratory instructor is responsible for classroom management and for maintaining ethical behavior within the classroom and/or laboratory. Faculty who discover or suspect a violation should discuss the matter with the suspected violator(s) and attempt to resolve the case at that point. In cases of convincing evidence, the faculty member should take appropriate action. The faculty member and student should complete a Counseling Sheet regarding the violation. (The Counseling Sheet should contain at a minimum the date and time of the violation, the course, the instructor's name, the student's name, an explanation of the infraction or facts of the case, and the resolution to the incident.) This form should be signed by the student, faculty member, program coordinator, and the Vice President of Academic Affairs. The Vice President of Academic Affairs will maintain a file on all violations. If a faculty member prefers to report the case directly to Vice President of

Academic Affairs, it remains his/her prerogative to do so. Additionally, if the faculty member and the accused student cannot reach a resolution or if the faculty member believes that suspension from school is the only fair sanction, the case should immediately be reported, by the faculty member, in writing, to the Vice President of Academic Affairs. If the Vice President of Academic Affairs observes any trends in student behavior which involve more than one violation or act of academic dishonesty, the Vice President of Academic Affairs is responsible for notifying all faculty members involved, for contacting the student(s) involved, and after consultation with the faculty member(s) involved for taking the appropriate action. The Vice President of Academic Affairs is responsible for the timely notification (normally within two weeks) to all parties of an action taken.

Students wishing to appeal a disciplinary decision involving academic integrity or acts of academic dishonesty may do so through the Student Appeals and Grievance Procedure.

Classroom Policies:

1. **Final Exams:** The schedule of final exams times is published at the beginning of the semester. You can find the schedule for final exams at:
<https://www.clarendoncollege.edu/studentservices/student-resources-forms.html>
Do not make plans to leave school before your scheduled final exam. In exceptional circumstances if a student needs to take a final exam early, he/she may request early final exams by filling out the form at:
<https://www.clarendoncollege.edu/studentservices/student-resources-forms.html>
2. **Scholastic Honesty:** I adhere to a strict policy regarding academic honesty. Anyone who is dishonest in any way will receive a zero on that assignment or exam with no opportunity to make up the zero and may be dropped from the course with a grade of F. That student, if allowed to remain in the course, will not be allowed to receive any extra credit points from the time of the infraction through the remainder of the course. Furthermore, that student will not be allowed to drop their lowest quiz grade or exam grade. A second act of dishonesty will result in an F for the course. Students who commit an act of academic dishonesty will not be allowed to withdraw from the course with a "W." Note that dishonest behavior includes both the act of copying someone else's work as well as allowing someone to copy your work. Both students are equally guilty and will be equally punished.
3. **Electronic Communication/Entertainment Devices:** Are not allowed. Any students seen with their phone out (on desk, in hand, in lap) or with headphones on will be counted absent. Exceptions can be made for students who have a compelling reason to need to have their phone in class (for example, they have young children and therefore need to be accessible).
4. **No food, alcohol, or tobacco in the classroom:** Clarendon is a tobacco-free campus, so do not chew during class. Also, the presence of food is distracting to other students.
5. **Be respectful:** Arrive on time. Stay awake during class. Participate in classroom activities and discussions. Don't distract from the class. Do not use profane or inappropriate gestures and/or language.
6. **Course Withdrawal--**Students desiring to make schedule changes after their initial registration

each semester must do so during the designated “Drop and Add” period as scheduled in the College Catalog. Students will be required to pay tuition and fees applicable to any class(es) added to their schedule.

Official withdrawal from a course is initiated in the Office of the Registrar. However, each student should consult with his/her academic advisor or the Associate Dean of Enrollment before officially withdrawing from a course. A student who stops attending a class without officially dropping it may receive a grade of “F” for that class.

7. **Grievance/Appeals:** If you have a dispute concerning your grade or policies in this class, it is the student's responsibility to contact the instructor to discuss the matter. Should things remain unresolved, please follow the procedures described in the Clarendon College Student Handbook or College Policy Manual.
8. **Accommodation Statement** REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT:
In accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, any student who feels that he or she may need any special assistance or accommodation because of an impairment or disabling condition should contact the Associate Dean of Enrollment Services at 806-874-4837 / janean.reish@clarendoncollege.edu or visit the Clarendon campus at Clarendon College. It is the policy of Clarendon College to provide reasonable accommodation as required to afford equal educational opportunity. It is the student's responsibility to contact the Associate Dean of Enrollment Services.
9. **Nondiscrimination Policy**
Clarendon College, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status. It is the policy of Clarendon College not to discriminate based on gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation. Harassment of a student in class, i.e., a pattern of behavior directed against a particular student with the intent of humiliating or intimidating that student will not be tolerated. The mere expression of one's ideas is not harassment and is fully protected by academic freedom, but personal harassment of individual students is not permitted.

Clarendon College Campus Carry Policy: Please click the following link to become informed about our campus carry policy: <https://www.clarendoncollege.edu/aboutcc/campuscarry.html>

The full details of **Student Rights and Responsibilities** policies can be viewed on Clarendon College's website at: <https://www.clarendoncollege.edu/Sites/ClarendonCollegeNew/Resources/Legal/24-25/StudentRightsResponsibilities.pdf>

Course Schedule:

All assignments are due at 11:59pm **Central Time**. Notice that the “due date” does not mean the day that you are supposed to submit an assignment. The “due date” is the last possible day to submit an assignment.

I encourage you to stay a few days ahead of the due dates. You never know when computers/internet will crash

or when life situations will prevent you from being able to work on an assignment. If you are a few days ahead of the due dates, you won't be stuck with the possibility of missing an assignment due to unforeseen issues.

January 22	Last day to Add/Drop
February 3	HW 1 due
February 10	HW 2 due
February 17	HW 3 due
February 20	Exam 1 and Practice Exam due
February 24	HW 4 due
March 3	HW 5 due
March 10	HW 6 due
March 11	Quiz HW 6 due
March 13	Exam 2 and Practice Exam due
March 31	HW 7 due
April 1	Quiz HW 7 due
April 7	HW 8 due
April 9	Last day to drop with a "W"
April 14	HW 9 due
April 15	Quiz HW 9 due
April 21	HW 10 due
April 22	Quiz HW 10 due
April 24	Exam 3 and Practice Exam due
April 28	HW 11 due
April 29	Quiz HW 11 due
May 5	HW 12 due
May 11	Final Exam and Practice Exam due

Course Outline:

Unit 1: Expressions, Exponents, Roots, and Polynomials
(Sections P.1 thru P.4 in textbook)

Unit 2: Factoring and Rational Expressions
(Sections P.5 and part of P.6 in textbook)

Unit 3: The Binomial Theorem, Division, and Partial Fractions
(Sections 11.5, 3.3, rest of P.6, part of 8.3 in textbook)

Unit 4: Graphing Intro, Linear Equations, and Algebraic Modeling
(Sections 1.1 thru 1.3 in textbook)

Unit 5: Complex Numbers and Quadratic Equations

(Sections 1.4 and 1.5 in textbook)

Unit 6: Applications of Quadratic and Other Kinds of Equations
(1.5—just application problems, section 1.6 and 3.7 in textbook)

Unit 7: Functions and Graphing
(Sections 2.1, 2.2, 2.6 in textbook)

Unit 8: Linear Functions and Slope, Quadratic Functions
(Sections 2.3, 2.4, 3.1 in textbook)

Unit 9: Composite and Inverse Functions, Polynomial Functions
(Sections 2.6, 2.7, 3.2 in textbook)

Unit 10: Roots of Higher Order Polynomials, Rational Functions
(Sections 3.3 thru 3.5 in textbook)

Unit 11: Systems of Linear and Non-Linear Equations
(Sections 8.1 thru 8.4, and 9.1 in textbook)

Unit 12: Exponential and Logarithmic Functions
(Chapter 4 in textbook)