



Semester: Spring 2010	Instructor: Delois R McCormick
Class Info: MTH 163-43	Phone: (540) 891-3037
Location/Room: Stafford, Room 103	Office Location 1: Room 206, FAC 2
	Office Location 2: Room 103, Stafford
Class Name: Precalculus I	Days at Location 1: M Tu Th
	Days at location 2: F
Class Days/Times: F 9-11:45 AM	Office Hours: Monday: 8:30AM - 12:30PM
	Tuesday: 8:30AM - 12:30PM
	Thursday: 8:30AM - 12:30PM
	Friday: 8:30AM - 9:00AM
Class Credits: 3	Instructor E-mail: dmccormick@germanna.edu

GCC E-mail Policy:

Students, faculty, and staff of Germanna Community College must use GCC email for all official college communications. This includes course-related communications between students and faculty. If you need help accessing your student email account please visit the ACC on either campus.

Course Description:

Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. Prerequisites: a placement recommendation for MTH 163 and Algebra I, Algebra II, and Geometry or equivalent. (Credit will not be awarded for both MTH 163 and MTH 166.) Lecture 3 hours per week.

Textbook and Supplies:

- Textbook: Aufmann, Barker, & Nation: College Algebra and Trigonometry; Sixth Edition; Houghton Mifflin; 2008. ISBN-13:978-0-618-82517-2
- TI-83/84+ Graphing Calculator
- Loose-leaf Notebook and Paper
- Pencil

Learning Outcomes:

As a result of the learning experience in this course, the student should be able to:

- A. Solve problems involving equations, inequalities, and systems of equations
- B. Operate on functions (addition, multiplication, composition, and inverses)
- C. Graph linear, quadratic, rational, exponential, and logarithmic functions
- D. Factor polynomials and find zeros of polynomials
- F. Use matrices to solve systems of linear equations
- G. Use a graphing utility as an aid to problem solving

Additional Learning Outcomes:

As a result of the learning experience in this course, the student should be able to:

Chapter 1:

1. Solve linear equations and inequalities.
2. Solve fractional equations.
3. Solve literal equations.
4. Solve quadratic equations and inequalities.
5. Perform operations on and simplify complex numbers.
6. Use the discriminant to determine the number of real and non-real solutions to a quadratic equation.
7. Solve linear and quadratic applications problems.
8. Solve radical equations.
9. Solve third and higher degree inequalities using the Critical Value Method.
10. Solve absolute value equations and inequalities.

Chapter 2:

1. Graph a point on the coordinate plane.
2. Find the distance between two points on the coordinate plane.
3. Find the midpoint of a line segment.
4. Graph an equation by plotting points.
5. Find the x- and y- intercepts of the graph of an equation.
6. Given the equation of a circle, find its center and radius.
7. Find the equation of a circle given its center and radius.
8. Evaluate a function for a given value.
9. Find the domain and range of a given function.
10. Graph a function.
11. Apply the vertical line test for a function.
12. Determine where a function is increasing, decreasing or constant.
13. Apply the horizontal line test for a one-to-one function.
14. Determine the slope of a non-vertical line from two points on the graph.
15. Given the slope-intercept form of the equation of a line, find its slope and y-intercept.
16. Given the slope and y-intercept of a line, find the equation of the line.
17. Given a point on the line and the slope of the line, determine an equation of the line.
18. Given two points on the line, find an equation of the line.
19. Given the equation of a parabola, determine its vertex and whether it opens upward or downward.
20. Write a quadratic equation in standard form.
21. Determine the maximum or minimum of a quadratic function,
22. Solve quadratic applications.
23. Determine if the graph of an equation is symmetric with respect to the x-axis, y-axis, and origin.
24. Determine whether a function is even, odd, or neither.
25. Perform translations and reflections on a graph.
26. Find the composition of two functions.

Chapter 3:

1. Use synthetic division to divide one polynomial by another, to evaluate a polynomial, to determine if $(x - c)$ is a factor of a given polynomial, locate the zeros of a polynomial, and

determine the upper and lower bounds for real zeros of a polynomial.

2. Apply the Leading Term Test to determine the behavior of a graph to the far left and far right.
3. Determine the multiplicity of zeros of a polynomial.
4. Use the Rational Zero Theorem to determine the possible rational zeros of a polynomial.
5. Apply Descartes' Rule of Signs to determine the number of possible positive and negative real zeros.
6. Find the zeros of a polynomial function.

Chapter 4:

1. Find the inverse of a function.
2. State the domain and range of the inverse of a function.
3. Graph exponential and logarithmic functions.
4. Evaluate exponential and logarithmic function.
5. Convert a logarithmic equation into exponential form and vice versa.
6. Apply the properties of logarithms.
7. Apply change of base formula to evaluate logarithmic expressions.
8. Solve logarithmic and exponential equations.

Chapter 10:

1. Use the Gaussian Elimination Method to solve a system of three equations in three unknowns.
2. Add, subtract, and multiply matrices.

Additional Course Information:

Course Requirements:

1. **Attendance:** Attend class regularly and punctually. ***Students who leave class early without making prior arrangements with the instructor will be counted absent and will not be allowed to make up missed work. Students who arrive late to class will not be allowed to make up or be given additional time on quizzes or tests they have missed.*** The instructor only withdraws students who never attended class. To avoid receiving an "F" in the course students should withdraw prior to the withdrawal date listed under Important Dates. For the complete college attendance policy see the Attendance Policy listed below.
2. **Materials:** Bring necessary materials to class: text, TI-83/84+calculator, notebook, paper, and pencil. Print lecture notes for missed classes and complete work listed on them as well as the work listed on the assignment sheet.
3. **Readings:** Read each section of the text relative to the assigned problems.
4. **Homework:** Complete and check the assigned problems to turn in. ***All work must be shown to receive credit on the homework.*** The assignments may be turned in up to one week late with a ten-point deduction in the score. Those who have a valid excuse for turning the homework in late must attach a written note to the assignment being turned in late explaining the reason for the absence. The instructor determines which excuses are valid. In cases of repeated or extended absences a doctor's note specifying the dates of illness will be required. ***Any assignments turned in more than one week late will be recorded as zeros. It is the student's responsibility to find out about and make up the missed homework assignments.*** At the end of the

semester the two lowest homework grades will be dropped.

5. **Group Quizzes:** Participate in and turn in group quizzes. Only the names of the students who are present the day the group quiz is collected will be placed on the assignment. The assignments may be turned in up to one week late with a ten-point deduction. Those who have a valid excuse for turning the group assignment in late must attach a written note to the assignment being turned in late explaining the reason for the absence. The instructor determines which excuses are valid. In cases of repeated or extended absences a doctor's note specifying the dates of illness will be required. ***Any quizzes turned in more than one week late will be recorded as zeros. It is the student's responsibility to find out about and make up the missed group quiz assignments.***

6. **Tests:** Take four chapter tests. Make-up tests will be permitted only in the case of an excused absence. The instructor determines what is excused. In cases of repeated or extended absences, a doctor's note will be required. ***It is the student's responsibility to notify the instructor and schedule a make-up test within 24 hours of a missed test.*** The notification may be done by phone or e-mail. ***A missed test must be made up within one week of the missed test or it will be recorded as a zero.***

7. **Academic Honesty:** At GCC we expect the highest standards of academic honesty. Violations include seeking or giving unauthorized help on tests or the exam. Misconduct in the area of academic honesty is subject to disciplinary action that includes getting a zero on the assignment in question. For more details on the college academic honesty policy see the Academic Policy section below.

8. **Communication:** The preferred means of contact is via email. Students are required to use their Germanna email for contact. Typically the instructor will reply to emails within 48 hours excluding weekends and holidays. See the GCC E-Mail Policy above for the specific details.

9. **Tutoring:** Help is available by meeting with the instructor during office hours, setting up an appointment in the Tutoring Center at FAC or LGC, attending walk-in math tutoring at one of the Tutoring Centers, or by using SMARTHINKING online tutoring. Information on tutoring is available under the Tutoring Center page on the Germanna website. See the Tutoring Services section below for more details.

10. **Blackboard:** Use the course Blackboard site to locate important announcements and copies of lectures and group quizzes. In the event of GCC closure or instructor absence information on what to do will be posted on Blackboard. It is the student's responsibility to check Blackboard for the assignment.

11. **Disability Information:** If you have a disability it is your responsibility to contact the special needs counselor at either campus to get an accommodation letter. You should then make an appointment to meet with the instructor during office hours to discuss the accommodations that you need. Please see the Disability Information section below for the disability services contact information.

Important Dates:

Jan 11: : Classes begin

Jan 15: : Last day to add a class

Jan 18: : Holiday (College Closed)

Feb 9: : College Closed

Jan 27: : Last day to drop with a refund
Mar 8-13: : Spring break
March 23: : Last day to withdraw without academic penalty
May 4: : Classes end
May 5-May 11: : Final Examinations

Attendance Policy:

Class attendance is an integral part of a sound academic program for most classes at Germanna. However, alternate teaching techniques, which may not require class attendance, may also be a part of a sound academic program. Class attendance requirements are found in the course outline, which the instructor provides to students in each course. Germanna students are expected to be present and on time at all regularly scheduled classes and laboratory meetings. When a faculty member determines that a student has not met the class attendance requirements in the course outline, which will usually conform to the statement at the end of this Standard, the faculty member may submit a Drop/Add Form, showing the last date of attendance by the student, to the Admissions and Records Office. A grade of "W" will be recorded for all withdrawals, whether initiated by the student or by the faculty member through the published "Last day to withdraw without academic penalty." Students withdrawn after the withdrawal deadline will receive a grade of "F" except under mitigating circumstances, which must be documented by the student and approved by the Dean of Instruction. Please see "Withdrawing from a course" under "Registration Information" in the Academic Information section of the Germanna course catalog for additional policy information. For 8 week, short session classes, the below permitted absences are cut in half. For short session courses other than 8 week, please see your instructor for the permitted absences.

The official GCC withdrawal policy follows: Withdrawal from a course without academic penalty may be made within the first 60% of the course. The student will receive a grade of "W" for withdrawal. After that time, the student will receive a grade of "F". Exceptions to this policy may be considered under mitigating circumstances which must be documented and submitted to the appropriate Dean of Instruction for review and consideration. Please see "Important Dates" above for the last day to withdraw.

(For the drop date for Short Session courses, see the link listed in "Important Dates for Short Session Courses" and use that information if applicable.)

If class meeting times during the week are:	Absences permitted are:
1	2
2	4
3	6
4	8

Additional Attendance/Withdrawal Policy:

Students who register for the course and attend at least one class are expected to withdraw from the course. Students who do not withdraw by the withdrawal date will

receive an "F." The students who do not attend the class by the second week of class will be withdrawn by the instructor.

Grading Policy:

Each student's semester grade will be based on:

- Group Quizzes—20%
- Homework--20%
- Tests—60%

The grades will be awarded on the basis of:

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- Below 60 F

Academic Honesty:

The faculty of Germanna Community College recognizes that academic honesty is an integral factor in developing and sharing knowledge. We support the concept of academic honesty, practice academic honesty in our classes, and require academic honesty from our students. GCC students are expected to maintain complete honesty and integrity in the completion and presentation of all academic assignments and examinations. Any student found guilty of cheating, plagiarism, or other dishonorable acts in academic work is subject to disciplinary action.

Academic dishonesty is cheating and stealing. Academic dishonesty includes, but is not limited to:

- Using material verbatim from a source without giving credit.
- Rewriting material from a source without giving credit.
- Using information from an Internet source without giving credit.
- Submitting the work of another person as your own work.
- Using/copying another student's computer disk.
- Copying from another person's paper/test/homework.
- Allowing someone else to copy/use your work (paper, homework, quiz, test).
- Violating VCCS Computer Ethics Guidelines in the pursuit of academic studies.

Disability Information:

If you are a student with a disability and will need accommodations while enrolled in this course, please contact the Coordinator of Disability Services in the Counseling Center, (540-891-3019 at the Fredericksburg Area Campus or 540-423-9140 at the Locust Grove Campus).

Student Academic Services:

Tutoring Services

Tutoring Services offers a variety of free academic support programs for Germanna

students at both the Locust Grove and Fredericksburg Area campuses. Daniel Center students should contact the Locust Grove tutoring office regarding available services and Stafford Center students should contact the FAC Tutoring Services Office for available services. To schedule an individual tutoring appointment, call or visit the Locust Grove or Fredericksburg Tutoring Centers.

Online tutoring is available during daytime, evening and weekend hours. Registered students may access online tutoring by clicking on the *Smarthinking* link from the Tutoring Services' website.

Supplementary academic materials are available free of charge from Tutoring Services, and they may also be downloaded from the Tutoring Services' website:

<http://www.germannna.edu/tutor/> Tutoring Services operates a daily walk-in Writing Lab and Math Lab as well as providing a variety of study skills and academic workshops. Students may register for the Test Taking/Test Anxiety Workshop, Grammar Workshop, APA/MLA Workshop, TI83/84 Calculator Workshop, Computer Competency Workshop, Note-taking, Spanish Discussion Group, Drug Calculation Workshop, and the Basic PC Skills Mini Course by visiting or calling our offices. Several of these workshops may also be viewed online from the "Online Tutoring Resources" section of the Tutoring Services' website:

<http://www.germannna.edu/tutor/resources.asp?menuchoice=Online%20Tutoring%20Resources>

Academic Computing Center

The ACC provides computer access to students needing to work on class work, check e-mail, blackboard, etc. Students also can apply, register for classes or changes classes, check grades, etc. using myGCC. Staff is available to assist students with various computers issues and services. Student can access the internet and MS Office Suite 2007, and placement testing is administered at LGC.

Testing Services

Testing Services provide proctor services for make-up and distance learning tests. Test proctoring for various nursing exams, dental hygiene, exit exams and other college/university testing as well. To determine the hours of the Testing Center, go to the website http://www.germannna.edu/acc/testing_center.

Tentative MTH 163-43 Course Schedule:

Week/Date	Sections	Assignment
1 January 15	1.1 & 1.2	Group Quiz on 1.1 & 1.2 Homework: pp. 85-86 #5, 9, 15, 19, 21, 23, 27, 35, 41, 45 pp. 96-98 #1, 7, 11, 15, 21, 29, 33
2 January 22	1.3 & 1.4	Group Quiz on 1.3 & 1.4 Homework: pp. 112-113 #1, 7, 15, 25, 35, 47, 55, 65 pp. 126-127 #1, 11, 15, 19, 31, 39, 41, 45,

		57, 61
3 January 29	1.5 & 1.6	Group Quiz on 1.5 & 1.6 Homework: pp. 141 #3, 7, 11, 15, 19, 21, 29, 35, 37, 43 pp. 151-152 #13, 17, 19, 21, 25
4 February 5	Review Chapter 1 2.1	Classwork: pp. 159-160 #1-12, 20 Homework: pp. 174-175 #5, 21, 25, 31, 41, 45, 49, 53, 57, 61
5 February 12	Chapter 1 Test	No homework
6 February 19	2.2 & 2.3	Group Quiz on 2.2 & 2.3 Homework: pp. 192-194 #1, 3, 9, 11, 19, 21, 23, 29, 33, 37, 41, 55, 57, 65, 67 pp. 209-213 #3, 5, 11, 15, 19, 25, 29, 33, 37, 47, 57, 71, 73, 77
7 February 26	2.4, 2.5 & 2.6	Group Quiz on 2.4, 2.5, & 2.6 Homework: pp. 224-225 #11, 15, 21, 27, 37, 41 p. 240 #13, 17, 25, 43, 45 pp. 253-254 #1, 13, 17, 21, 31, 39, 43, 51, 53
8 March 5	Review Chapter 2 3.1	Classwork: p. 278 #1-14 Homework: pp. 290-291 #3, 11, 13, 19, 25, 27, 31, 35, 39, 45, 47, 51
9 March 19	Chapter 2 Test	No homework
10 March 26	3.2, 3.3, & 3.4	Group Quiz on 3.2, 3.3, & 3.4 Homework: pp. 306-307 #1, 5, 17, 19, 23, 29, 33, 37, 43, 45, 57, 61 pp. 321-322 #3, 7, 11, 17, 25, 27, 31, 37, 41, 49, 61 pp. 332-333 #1, 5, 17, 25, 37, 41
11 April 2	Review Chapter 3 4.1	Classwork: p. 359 #1-14 Homework: pp. 371-373 #3, 7, 9, 17, 21, 25, 29, 33,

		37, 41, 47
12 April 9	Chapter 3 Test	No homework
13 April 16	4.2, 4.3, & 4.4	Group Quiz on 4.2, 4.3, & 4.4 Homework: pp. 385-387 #1, 5, 13, 15, 21, 25, 35 pp. 400-401 #1, 7, 11, 13, 17, 23, 27, 33, 37, 45, 73 pp. 413-415 #1, 5, 9, 13, 17, 21, 27, 31, 33, 37, 43, 79
14 April 23	4.5, 10.1, & 10.2	Group Quiz on 4.5, 10.1, & 10.2 Homework: p. 425 #1, 5, 9, 13, 17, 23, 27, 35, 39 pp. 869-870 #5, 11, 13, 17, 21 pp. 888-889 #1, 7, 9, 15, 17, 21, 23, 25
15 April 30	Review of Chapters 4 & 10 Review	Classwork: p. 466 #1-12 p. 928 #3, 4, 6, 7, 8, 9
16 May 7	Chapters 4 & 10 Test	No homework

Syllabus Subject to Change