Syllabus
Pre-Calculus Mathematics
Math 143 BC - Spring 2012

Course Title	Pre-Calculus Mathematics
Credit Hours	6
Length of Course	16 weeks
Prerequisites	Placement Test, or grade of C or better in Math 99, or consent of department chair
Section	143 BC (section number: 65175)
Classes	Monday, Wednesday, 9:30 AM- 12:20 PM in Room 3140
Instructor	Marta Hidegkuti e-mail: mhidegkuti@ccc.edu Office: Room 3812
Office Hours:	Monday, Wednesday 2:45 PM – 3:45 PM (walk-in)
	Tuesday, Thursday 12:30 PM – 1:30 PM (walk-in)
	Saturday 8:00 AM – 11:00 AM by appointment only
Web Sites	http://faculty.ccc.edu/mhidegkuti/Math143/math143_sp12/Math143.html
	In case the Truman web server is down, a copy of the class's web site is maintained at www.teching.martahidegkuti.com
Textbook	Precalculus, by James Stewart, Lothar Redlin, and Saleem Watson, 6th edition, Brooks/Cole, 2012; ISBN Number: 978-0-8400-6807-1
Textbook Policy	**Due to price consideration, students are welcome to use previous editions of the textbook.** Some topics will be covered by handouts posted on the course's web site.

Calculator
The use of a scientific calculator is strongly recommended. Students are expected to bring the calculator to class. The optimal calculator is **TI-30X II S**. The price of this model is between $15 and $20. Do NOT purchase a different calculator if it is significantly more expensive.

Calculator Policy
Any calculator different from TI-30X II S has to be approved by the instructor first. **During quizzes and exams, students are not allowed to use a graphing calculator. Students are not allowed to use a cell phone as a calculator any time during class.**

Supplements
The textbook is bundled with WebAssign. **The use of WebAssign is optional and will not be part of the course.** If students want to use WebAssign, they can log in at https://www.webassign.net/login.html and should use the course code **trumancollege 8416 6138.**

Important Dates
First class: Wednesday, Jan 18
Exam 1: Wednesday, Feb 15
Holiday, no class: Monday, Feb 20
Exam 2: Wednesday, March 7
Spring Break: April 2-8

Exam 3: Wednesday, Apr 11
Last day to withdraw from classes: Monday, Apr 23
Exam 4: Wednesday, May 9
End of Semester: Saturday, May 12

Attendance Policy
Attendance is an essential part of the course. Regular attendance is expected of all students in the course. Attendance will be taken each class period. Students are expected to be on time and to attend the entire session. Please make every effort to arrive to class on time. If you are absent, you are responsible for all work and assignments covered in lecture that day.

No-Show Withdrawal (NSW)
Students who do not attend the first two class sessions will be withdrawn from the class by the instructor and issued an NSW.

Administrative Withdrawal (ADW)
Students will be administratively withdrawn at midterm if at least two of the following apply:
        1 Less than 70% of quizzes and tests up to the midterm (March 7) have been attempted.
        2 Less than 50% of class sessions up to the midterm (March 7) have been attended.
        3 Student missed 4 consecutive classes.

Withdrawal from the course
Not attending classes does not constitute withdrawal from the course. After midterm, instructors can no longer drop students from the course. If students stop attending classes after the midterm, the instructor can only assign a grade of F. **If you no longer attend classes, it is essential that you stop by at the registrar's office and officially withdraw from the course to protect your average.** The last day for student initiated withdrawal is Monday, April 23. Before withdrawing from the course, students are encouraged to consult the instructor.

Grading Policies

Grading Scale
Grading of all assignments, quizzes, and exams will be based on the following scale.
        90-100: A   80-89: B   70-79: C   60-69: D   0-59: F

Midterm Grade
The midterm grade will be the weighted average of the grades shown below with their weights.
        Exam 1: 30%   Exam 2: 35%   Quizzes: 35%
Before determining the grade given for quizzes, the lowest two quiz scores will be dropped.

Final Grade
The final grade will be the weighted average of the grades shown below with their weights.
        Exam 1: 10%   Exam 3: 20%   Quizzes: 25%
        Exam 2: 15%   Exam 4: 30%
Before determining the grade given for quizzes, the lowest three quiz scores will be dropped.

Makeup Policy
Without exception, there will be no making up quizzes. Permission to make-up an exam is subject to the discretion of the instructor, and will be granted only in cases of emergency. If an absence is anticipated, the student should notify his/her instructor prior to the absence. Students need to present written documentation to make-up an exam. All make-up exams will take place on Friday, May 4.

Academic Integrity
The CCC has no tolerance for violations of academic integrity., Plagiarism and cheating of any kind are serious violations of these standards and will result, minimally, in the grade of F. All course work will be checked for academic integrity. In this course, the first violation will result in an F for the assignment; the second violation will result in course failure. Make-ups and revisions are not available after an infraction of academic integrity. For further information, please refer to the student policy manual.

General Information

At all times, please treat the instructor, other students, and their opinions with respect.

Before arriving to class, please **turn off all cell phones, pagers, and other loud devices**. **Please make every effort to arrive on time for class.** Please refrain from talking while the instructor is lecturing. If you need an extensive review (for example, due to absence) of material presented in class, please see the instructor during office hours. Valuable class time can not be spent on assisting one or a few students to the detriment of the entire class. Office hours are designated to address these problems.

Arrive to office hours prepared. If you have missed a class, be sure to obtain and read all class-related material (handouts, text book section, and class notes). Have a list of specific questions.

Please retain all class-related material until you receive your final grade for the course.

Students that register late are responsible for all course work they missed due to their absence.

Eating is not allowed in the class rooms. Students are allowed to eat only in designated areas such as the cafeteria or student lounge.

At all times, email is the fastest and most efficient method to contact the instructor. If you wish to contact the instructor about grades or attendance or other administrative issues via email, please use your CCC student account. FERPA (Family Educational Rights and Privacy Act) is a federal law that protects the privacy of student educational records: www.ed.gov/policy/gen/guid/fpco/ferpa/index.html. Faculty cannot reveal information about students, or discuss student records over the phone or unsecure e-mail. CCC student e-mail meets FERPA requirements.

Academic Support Services

The Tutoring Center is located in Room 162. Students are encouraged to seek help and guidance during the course. Students have already paid for this service as part of tuition fees. Please note: in order to receive tutoring, students need to sign up in advance. (773) 907- 4785 www.trumancollege.edu/studentservices/tutoring.

The Student Success and Leadership Institute (SSLI). For students who need various other support services to achieve their educational goals: Room 162, (773) - 907-4714, www.trumancollege.edu/studentservices/ssli.

TRIO Student Support Services. For low-income students, first generation college students, or students with disabilities who need academic support: Room 162, (773) 907 - 4797, www.trumancollege.edu/trio. Registration is required at the start of each semester.

Disability Access Center. The Center verifies needs pursuant to the American Disabilities Act (ADA), determines student academic accommodations, and issues accommodation letters. Room 162, (773) 907 - 4725, www.trumancollege.edu/studentservices/dac. Registration is required at the start of each semester.

Math 143 BC - Spring 2012

Please note that the Calendar of Events is subject to change. Last revised: December 13, 2011

	Monday	**Wednesdsy**
Week 1	January 16 - No class	January 18 — Class 1
Week 2	January 23 — Class 2	January 25 — Class 3
Week 3	January 30 — Class 4 Quiz 1	February 1 — Class 5 Quiz 2
Week 4	February 6 — Class 6 Quiz 3	February 8 — Class 7 Quiz 4
Week 5	February 13 — Class 8 Quiz 5	February 15 — Class 9 Exam 1
Week 6	February 20 — No class	February 22 — Class 10 Quiz 6
Week 7	February 27 — Class 11 Quiz 7	February 29 — Class 12 Quiz 8
Week 8	March 5 — Class 13 Quiz 9	March 7 — Class 14 Exam 2
Week 9	March 12 — Class 15 Quiz 10	March 14 — Class 16 Quiz 11
Week 10	March 19 — Class 17 Quiz 12	March 21 — Class 18 Quiz 13
Week 11	March 26 — Class 19 Quiz 14	March 28— Class 20 Quiz 15
Spring Break April 2 — 8		
Week 12	April 9 — Class 21	April 11 — Class 22 Exam 3
Week 13	April 16 — Class 23 Quiz 16	April 18 — Class 24 Quiz 17
Week 14	April 23— Class 25 Quiz 18	April 25— Class 26 Quiz 19
Week 15	April 30 — Class 27 Quiz 20	May 2 — Class 28 Quiz 21
Week 16	May 7 — Class 29	May 9 — Class 30 Exam 4
May 12 - End of Spring 2012 term		

Last day for student initiated withdrawal: Monday, April 23

Course Information

Catalogue Description: Pre-calculus emphasizes the notion of a function as a unifying concept for the topics of college algebra and an extension of the topics of trigonometry. The following families of functions and their characteristics are examined within this course: polynomial functions; rational functions; exponential and logarithmic functions; and trigonometric functions. Writing assignments, as appropriate to the discipline, are part of the course. Applications involving problem-solving skills will be emphasized throughout the course.

Students the Course is Expected to Serve: This course is intended for students who plan to major in mathematics, engineering, or science.

Truman College General Education Goals:
Upon successful completion of this course, students will demonstrate the ability to
- think critically, abstractly, and logically.
- communicate effectively in written and oral forms.

Course Objectives:
Solve equations, inequalities, and systems of equations and inequalities of various types.
Solve geometry problems using methods of coordinate geometry.
Analyze the graphs of various families of functions.
Apply the models and characteristics of various families of functions to scenarios in order to solve real-world problems.
Demonstrate an understanding of trigonometric functions and their behaviors.

Student Learning Outcomes:
Upon satisfactory completion of the course, students will be able to:
Determine whether a number is real or not, and if so, if it is rational or irrational.
Solve equations, inequalities, and systems of equations of the following types: linear, quadratic, quadratic in form, polynomial, rational, radical, equations with absolute value, logarithmic, exponential, and trigonometric.
Solve equations over the complex numbers.
Apply the concepts of conics to a contextual (real-world) situation.
Apply the arithmetic-geometric means theorem to a contextual (real-world) situation.
Apply the concepts of arithmetic and geometric sequences to a contextual (real-world) situation.
Apply permutations and combinations to a contextual (real-world) situation.
Apply the concept of probability to a contextual (real-world) situation.
Prove trigonometric identities.
Prove statements by induction.
Polynomial Functions:
Identify the characteristics of a quadratic function (i.e., vertex, axis of symmetry, and concavity).
Compute roots/zeroes of a polynomial function by factoring techniques.
Estimate the roots/zeroes of a polynomial function using graphs.
Solve polynomial inequalities.
Solve systems of linear equations using matrices and determinants.
Solve systems of linear inequalities.
Solve systems of non-linear equations.

Rational Functions:
    Simplify rational expressions using the division algorithm.
    Identify points of discontinuity of a rational function.
    Identify vertical/horizontal asymptotes and end behavior of rational functions.
    Solve rational inequalities.
Exponential and Logarithmic Functions:
    Define exponential and logarithmic functions.
    Simplify exponential and logarithmic expressions using their properties.
    Solve exponential and logarithmic equations.
    Formulate and apply exponential and logarithmic functions to a contextual situation.
Trigonometric Functions:
    Define the sine, cosine, tangent, and secant functions and their inverses, including the unit circle definition of these functions.
    Solve trigonometric equations.
    Apply right-angle trigonometry to a scenario.
    Verify trigonometric identities.
    Identify a trigonometric function from its graph.
    Graph a trigonometric function using its properties (e.g., periodicity, amplitude, phase shifts,etc.).
    Apply trigonometric functions to basic concepts of physics (e.g., velocity, pendulum movement,basic current).

The following student learning outcomes (Characteristics of Functions) will be embedded as appropriate in the study of the family of functions listed above.
    Identify the domain and range of a function.
    Determine intervals on which functions are decreasing/increasing, continuous/non-continuous, or piecewise.
    Identify functions from multiple sources of information (i.e., verbal descriptions, graphs, equations, and tables of values).
    Relate the effect of transformations (i.e., translations, rescaling, or reflections) on graphs of functions and their corresponding equations.
    Perform operations (i.e., addition, subtraction, multiplication and division) on functions, including the composition of functions.
    Decompose a function into a composition of two or more functions.
    Formulate and apply a function to a contextual situation.
    Determine the conditions under which a function has an inverse.
    Identify the inverse of a function from multiple representations.
    Reformulate a given function into various representations (i.e., verbal, graphical, algebraic, or tabular).