MATH 1314 COURSE SYLLABUS
COLLEGE ALGEBRA
BROOKHAVEN COLLEGE
MATH/SCIENCE DIVISION

ISBN: 9780321772206

CATALOG DESCRIPTION: This is a Texas Common Course Number. This is a Core Curriculum course selected by the colleges of DCCCD.
Prerequisite: This is an entry-level course and is open to any student meeting TSI standards of college readiness (student must have appropriate assessment test score or have successfully completed DMAT 0310).
Course Description: This course is an in-depth study and applications of polynomial, rational, radical, exponential, logarithmic, absolute value and piecewise-defined functions, and systems of equations using matrices. Also covered are the graphing calculator, non-linear inequalities, sequences and series, circles, the Binomial Theorem and a review of the classification of the real number system. (3 LEC)
This course is a prerequisite for MATH 1316.

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply knowledge of polynomial, rational, radical, exponential, logarithmic, absolute value and piecewise-defined functions.
   - Solve polynomial (including equations reducible to quadratic), rational, radical, exponential (including same base and different bases), logarithmic and absolute value equations related to these functions.
   - Solve polynomial, rational and absolute value inequalities.
3. Use graphing techniques, including, but not limited to, the use of a graphing calculator: increasing/decreasing/constant intervals, symmetry, even/odd functions, transformations (including translations, reflections, stretching and shrinking), completing the square, and finding relative maxima and minima graphically.
   - Recognize and be able to graph the basic equation of a circle.
4. Use the different theorems of polynomials (including the Rational Zeros Theorem) to evaluate all roots of higher degree polynomial and rational functions.
5. Recognize and solve systems of linear equations and their applications using matrices.
6. Demonstrate an understanding of sequences and series, including finding nth term & partial sums for arithmetic and geometric sequences.
7. Use the Binomial Theorem to expand binomials.
8. Recognize the different classifications within the real and complex number systems.

MATH 1314 is a Tier I course in the Quantitative Reasoning learning category. Knowledge and skills that are important to your success in other college courses will be introduced and reinforced in Tier 1. The Quantitative Reasoning category promotes the application of mathematics to increase your ability to solve “real-world” problems. When you are quantitatively literate, you can use logic and critical thinking in new ways. www.dcccd.edu/core
Core Objectives:
MATH 1314 is part of the Mathematics Foundational Component Area 020.
   i. Courses in this category focus on quantitative literacy in logic, patterns, and relationships.
   ii. Courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.
   iii. MATH 1314 develops the following Core Objectives:
       Critical Thinking (CT) – to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
       Communication (COMM) – to include effective development, interpretation and expression of ideas through written and visual communication.
       Empirical and Quantitative Skills (EQS) – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

MATH 1314 develops Critical Thinking, Communication, and Empirical and Quantitative Skills by requiring students to solve and analyze applications of various functions and systems of equations.

CHAPTERS/UNITS COVERED:

Chapter 1: Graphs, Functions, and Models
Chapter 2: More on Functions
Chapter 3: Quadratic Functions and Equations; Inequalities
Chapter 4: Polynomial Functions and Rational Functions
Chapter 5: Exponential Functions and Logarithmic Functions
Chapter 6: Systems of Equations and Matrices
Chapter 8: Sequences, Series, and Combinatorics
This class is an INET course that begins on 1/20/2015 and ends 3/20/2015. For special help students are encouraged to come to the Math Lab, K137, during hours when tutors for your course are available. Consult your instructor or check the bulletin board in K137 for the appropriate hours.

INSTITUTIONAL POLICIES

DROP/WithdrawAL POLICY: Withdrawing from a course is a formal procedure which YOU must initiate; the instructor cannot do it for you. You may withdraw from a course in either the Admissions office or Advising Center. If you stop attending or are unable to complete this class and you do not withdraw before the official drop date, **Feb 28th, 2015**, you will receive a performance grade, usually a grade of “F.” Students sometimes drop a class when help is available that would enable them to continue. Please discuss your plans with the instructor if you feel you need to withdraw.

You must register your MyMathLab account for this course before 1/27/15 or you will be certified as ‘never attended’.

STOP BEFORE YOU DROP

For students who enroll in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your college counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated six non-exempt drops, you cannot drop any other courses with a “W.” Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. [https://www1.dcccd.edu/coursedrops](https://www1.dcccd.edu/coursedrops)

FINANCIAL AID STATEMENT: Failure to attend classes could result in a loss of Financial Aid (FA). If you are receiving any form of financial aid, you should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the drop date are also subject to this policy.

INTERNATIONAL STUDENTS: Students on an F-1 visa cannot withdraw from classes without jeopardizing their official status. If you are on an F-1 visa, you MUST NOT withdraw from any class without the permission of an International Student Advisor in the Multicultural Center, in Room S-136 or at 972-860-4192.

RELIGIOUS HOLIDAYS: A student shall be excused from attending classes, or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this provision may not be penalized for that absence and shall be allowed to take an examination or complete an assignment within a reasonable time after the absence.
**ADA STATEMENT**: If you feel you may need special assistance or accommodation (such as help with taking notes, extra time on tests, etc.) because of any type of physical disability or learning difference, please contact the Special Services office in Room S124 or at 972-860-4673.

**ACADEMIC INTEGRITY**: Scholastic dishonesty is a violation of the Student Code of Conduct and is punishable as stated in college policies. Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism, and collusion. The purpose of the Student Code of Conduct is to provide guidelines for the educational environment of the Dallas County Community College District. This environment views students in a holistic manner, encouraging and inviting them to learn and grow independently. Such an environment presupposes both rights and responsibilities. For more information, refer to the [DCCCD Student Code of Conduct](https://www1.dcccd.edu/catalog/ss/code.cfm).

*We, the Math Department of BHC, take issues of dishonesty very seriously. If a student is caught violating any policy of the Testing Center, or an instructor’s own policy for their particular class, the following consequences will be enforced: The minimum penalty a student will receive is a zero for the assignment/exam and the maximum penalty will be to receive an F for the course and/or academic suspension.*

**CLASSROOM EXPECTATIONS**
The theme of this class is respect. I will treat you with respect and I expect the same treatment from you. In addition, I ask that you also be respectful to classmates. This means that you are not to interrupt your classmates or interrupt me when I am talking. Disparaging comments about classmates or about me will not be tolerated. Furthermore, cell phones ringing during class, text messaging during class, and arriving late to class are examples of rude and disrespectful behaviors. You are to arrive on time to class and turn off cell phones or put them on vibrate when entering the classroom. If you receive an emergency call, please step outside of the classroom to take the call. Text messaging is not allowed during class time.

Because disrespectful behaviors can sometimes become an issue, I’ve developed a policy that I will follow. Students who continue to display rude and disrespectful behaviors will be given a warning. If the behavior continues, students will be asked to leave the class. The student must meet with me before he/she can return to class.

**REPEATING THIS COURSE**: Each college of the DCCCD charges additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and continuing education/workforce training courses will result in additional tuition being charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts included courses taken at any of the DCCCD colleges since the Fall 2002 semester.
[https://www1.dcccd.edu/catalog/ss/oep/third_attempt.cfm?loc=econ](https://www1.dcccd.edu/catalog/ss/oep/third_attempt.cfm?loc=econ)

**EVALUATION PROCEDURES**
An online multiple choice midterm exam and a comprehensive final exam must be taken in a proctored testing center. These two exams will count 40% of the performance grade.
“Online MyMathLab Homework” will count 15%, and “Online MyMathLab Quizzes” will count 45% of the performance grade (quizzes can be taken at home).

No make-up tests and quizzes will be given and there will be no extensions of deadlines if tests are given in the Testing Center unless arrangements are made prior to the test deadline.
The scale used to determine the final course grade is:

- 90 to 100    A
- 80 to 89     B
- 70 to 79     C
- 0 to 69      F

Proctored Exams

The Midterm and Final exam must be proctored in a valid testing center of your choosing. You must notify me of which testing center you will use via email by the start of the second week of class, Jan 26th. If you will not be using a DCCCD testing center you must also provide me with testing center contact information. Failure to do so may result in a zero for one, or both, of your exams.

No notecards, formulas, or cheat sheets will be allowed on the Midterm and Final Exams

GRADE REPORTS: Final grade reports are not mailed to students. You may obtain your final grades online at https://econnect.dcccd.edu/. From the student menu, select “My Grades” under “My Personal Information.” If you are not already logged in, you will be prompted to do so. Select the grade type you wish to review. Press the submit button and all grades for the selected grade type will be displayed.

TI Graphing calculator required. TI-84 PLUS calculator recommended. NO TI-NSPIRE, TI-89 OR TI-92.

Incomplete grades are given when an unforeseen emergency prevents a student from completing the work in a course. The division Dean must approve all “I” grades.

Cell phones are not appropriate in class. In addition, cell phones and pagers are no longer allowed in the Testing Center.

FERPA: The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. More information is available at https://www1.dcccd.edu/catalog/about/privacy.cfm

INSTRUCTOR’S RIGHT TO MODIFY: The instructor has the right to add, delete, or revise segments of this course syllabus.

IMPORTANT DATES:

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<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January 19(M)</td>
<td>Martin Luther King, Jr Holiday</td>
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<tr>
<td>January 20(T)</td>
<td>Classes Begin</td>
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<tr>
<td>February 2(M)</td>
<td>12th Class Day</td>
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Revised Fall 2014
February 19(R) Conference Day- day and evening classes will not meet.
February 20(F) Professional Development Day- Friday day classes will not meet. Friday evening, Saturday and Sunday classes will meet.
February 23(M) Classes Resume
March 9-13(M-F) Spring Break- College buildings & offices will be closed for the week.
March 16(M) Classes Resume
April 3(F) Holiday
April 6(M) Classes Resume
April 16(R) Last Day to Withdraw
May 11-14(M-R) Final Exams
May 14 (R) Semester Ends

MATH 1314 – LESSON PLAN
Textbook: College Algebra, 4th ed by Beecher, Penna, Bittinger
ISBN: 9780321772206

<table>
<thead>
<tr>
<th>DAY</th>
<th>TOPIC(S)</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to College Algebra 1.1 Introduction to Graphing</td>
<td>Calculator Function: y(x), ZSTD, TRACE, ZOOM</td>
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<tr>
<td>2</td>
<td>1.2: Functions and Graphs</td>
<td>Calculator Function: VALUE, TABLE</td>
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<tr>
<td>3</td>
<td>2.1: Increasing, Decreasing, and Piecewise Functions; Applications</td>
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<tr>
<td>4</td>
<td>2.2: The Algebra of Functions 2.3: The Composition of Functions</td>
<td>Emphasize library of functions (pg. 194)</td>
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<td>5</td>
<td>2.4: Symmetry and Transformations</td>
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<td>7</td>
<td>R.1, 3.1: The Complex Numbers</td>
<td>Discuss: Real Numbers</td>
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<tr>
<td>8</td>
<td>3.2: Quadratic Equations, Functions, Zeros, and Models 3.3: Analyzing Graphs of Quadratic Functions</td>
<td>Calculator Function: ROOT, TABLE, POLY (optional)</td>
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<td>9</td>
<td>3.3: Analyzing Graphs of Quadratic Functions 3.4: Solving Rational Equations and Radical Equations</td>
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<td>10</td>
<td>3.5 Solving Equations and Inequalities with Absolute Value</td>
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<td>12</td>
<td>4.2: Graphing Polynomial Functions 4.3: Polynomial Division; The Remainder Theorem and the Factor Theorem</td>
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<td>13</td>
<td>4.4: Theorems about Zeros of Polynomial</td>
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Revised Fall 2014
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<thead>
<tr>
<th>Functions</th>
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<tr>
<td>14 4.4: Theorems about Zeros of Polynomial Functions</td>
<td>4.5: Rational Functions</td>
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<td>15 4.5: Rational Functions</td>
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<td>16 4.6 Polynomial Inequalities and Rational Inequalities</td>
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<td>18 5.1: Inverse Functions</td>
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<td>19 5.1: Inverse Functions</td>
<td>5.2: Exponential Functions and Graphs</td>
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<td>20 5.3: Logarithmic Functions and Graphs</td>
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<td>21 5.4: Properties of Logarithmic Functions</td>
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<td>22 5.5: Solving Exponential and Logarithmic Equations</td>
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<td>23 5.5: Solving Exponential and Logarithmic Equations</td>
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<tr>
<td>25 6.3: Matrices and Systems of Equations</td>
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<tr>
<td>26 8.1: Sequences and Series</td>
<td>Calculator Function: SEQ, SUM</td>
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<td>27 8.2: Arithmetic Sequences and Series</td>
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<tr>
<td>28 8.3: Geometric Sequences and Series</td>
<td>8.7: The Binomial Theorem</td>
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<tr>
<td>29 Review for Final Exam</td>
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<td>30 Comprehensive, departmental final exam</td>
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