



**Division of College Readiness
Developmental Mathematics Department**
<https://learning.hccs.edu/programs/developmental-mathematics>

Math 0314: Corequisite Support of Math 1314 | Lecture | #17454
 Fall 2019 | 16 Weeks (8.26.2019-12.15.2019)
 In-Person | Northline 215 | TT 5:30 p.m.-6:50 p.m.
 3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor: Kayrath A Vongphrachanh "Mr. V"	Office Phone: 218-618-5694
Office: Adjunct Suite 321	Office Hours: N/A
HCC Email: kayrath.vongphrachanh@hccs.edu	Office Location: Northline

Please feel free to contact me concerning any problems that you are experiencing in this course. Your performance in my class is very important to me. I am available to hear the concerns and just to discuss course topics.

Instructor's Preferred Method of Contact

Please contact me via phone or e-mail. I will respond to emails within 24-48 hours Monday through Thursday; I will reply to Friday and weekend messages on Monday mornings.

What's Exciting About This Course

This course is intended to provide students enrolled in STEM areas of study with the foundation needed to be successful in their career path. It also helps to prepare students for College Algebra.

Be sure that you are enrolled in the correct math class. If you are not a STEM or related major, notify your teacher and/or advisor as soon as possible.

My Personal Welcome

Welcome to MATH 0314 corequisite —I'm delighted that you have chosen this course! One of my passions is to know as much as I can about math in day-to-day life and I can hardly wait to pass that on. I will present the information in the most straight forward way I know, so that you can grasp the concepts and apply them now and hopefully throughout your life.

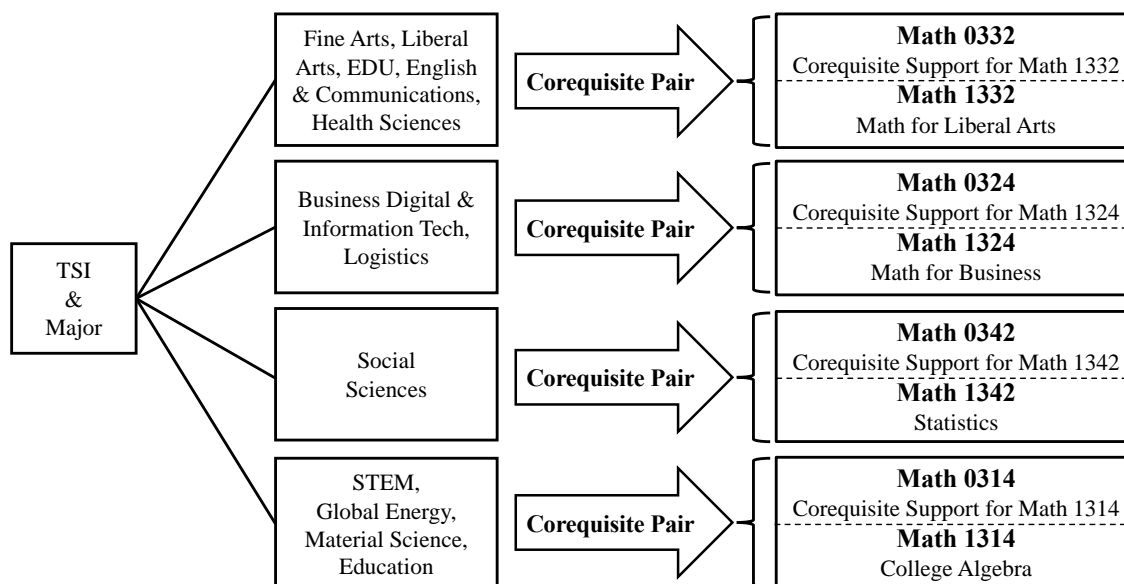
As you read and wrestle with new ideas and facts that may challenge you, I am available to support you. The fastest way to reach me is by my HCC email. The best way to really discuss issues is in person and I'm available during posted office hours to tackle the

questions. My goal is for you to be successful in the college math course. So please visit me or contact me by email whenever you have a question.

Prerequisites/Corequisites

MATH 0314 requires either that a student has passed MATH 0309 or MATH 0314P with a "C" or better **OR** TSIA Math Score 336-349 with Intermediate Algebra score 4-15 **OR** an equivalent score on a Placement Exam

Corequisites: MATH 0314 is a corequisite support course for MATH 1314. Students should be aware that sections of these courses are **LINKED**. Therefore, developmental math students who enroll in Math 0314 must also enroll in the linked section of Math 1314 (in the same semester). Developmental students **must maintain satisfactory attendance in BOTH** Math 0314 and Math 1314. If a developmental student withdraws or drops from one course in the corequisite pair, then he/she will be dropped from the other linked course. Corequisite courses must be taken during the same semester. Please carefully read and consider the repeater policy in the [HCCS Student Handbook](#).



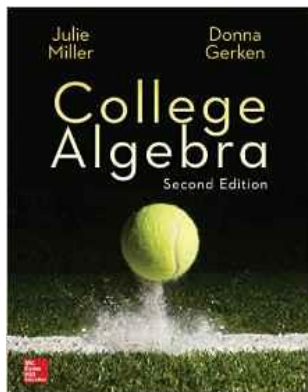
Canvas Learning Management System

This section of MATH 0314 will use [Canvas \(https://eagleonline.hccs.edu\)](https://eagleonline.hccs.edu) to supplement in-class assignments, exams, and activities. You need to sign into Canvas regularly. I will post grades, out-of-class activities, class notes, and more in there. You also sign into Canvas to do your homework assignments.

HCCS Open Lab locations may be used to access the Internet and Canvas. **USE [FIREFOX](#) OR [CHROME](#) AS THE INTERNET BROWSER.**

Instructional Materials

Textbook Information



There is no additional textbook requirement for the class. However, students must have access to a Corequisite Workbook for College Algebra – which is available in Connect Math. In addition to the workbook, students also need College Algebra textbook.

College Algebra Math 2nd ed. (by Julie Miller and Donna Gerken, McGraw Hill Publishing, 2016).

ISBN: 9781260029604 (textbook and access code for Connect Math)

ISBN: 9781260029611 (access code with e-book)

You may either use a hard copy of the book or the e-book through Connect Math.

Temporary Free Access to E-Book

For temporary free access to Connect Math, the online eBook and workbook, go to <https://www.connectmath.com>, register using the Connect Math Course Code:

Your Class Code is: 93PHV-TEJVX

Your Financial Aid Access Code is: 1ACAB-5E735-F3361-55110

Other Instructional Resources

Students must have access to the workbook and Math 1314 textbook. Any additional supplemental material will be provided by the instructor as needed.

Tutoring

HCC provides free, confidential, and convenient academic support, including writing critiques, to HCC students in an online environment and on campus. Tutoring is provided by HCC personnel in order to ensure that it is contextual and appropriate. Visit the [HCC Tutoring Services](#) website for services provided.

Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines, newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at <http://library.hccs.edu>.

Supplementary Instruction

Supplementary Instruction is an academic enrichment and support program that uses peer-assisted study sessions to improve student retention and success in historically difficult courses. Peer Support is provided by students who have already succeeded in completion of

the specified course, and who earned a grade of A or B. Find details at <http://www.hccs.edu/resources-for/current-students/supplemental-instruction/>.

Course Overview

This course helps students with basic math concepts required to be successful in MATH 1314. Topics include factoring, linear equations, distance and midpoint formulas, quadratic equations and applications, complex numbers, other types of equations, linear inequalities in one variable, and other types of inequalities, linear equations in two variables, functions, analyzing graphs of functions, a library of Parent functions, transformations of functions, combinations of functions, quadratic functions and models, polynomial functions of higher degree, zeros of polynomial functions, rational functions, and inequalities, inverse functions, exponential functions and their graphs, logarithmic functions and their graphs, properties of logarithm and exponential and logarithmic equations, linear and nonlinear systems of equations, two variable linear systems, solving system of equations using matrices, operations with matrices.

Core Curriculum Objectives (CCOs)

Given the rapid evolution of necessary knowledge and skills and the need to take into account global, national, state, and local cultures, the core curriculum must ensure that students will develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in life. Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

- **Critical Thinking:** 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.
- **Quantitative and Empirical Literacy:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Program Student Learning Outcomes (PSLOs)

Students in the Mathematics Program will:

1. Engage in problem solving strategies, such as organizing information, drawing diagrams and modeling.
2. Use symbolic representations to solve problems. This includes manipulating formulas, solving equations, and graphing lines.
3. Build the foundational mathematical skills that will enable a student to successfully complete a college level mathematics course.

Course Student Learning Outcomes (CSLOs)

Upon successful completion of this course, students will be successful in MATH 1314 and able to:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, Operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

Learning Objectives

Upon completion of MATH 0314, the student will be able to:

1. Simplify and Multiply Square Roots of Negative Real Number.
2. Solve linear equations in one variable.
3. Solve Quadratic Equations in one variable by the method of factoring, square root property, completing the square, and the quadratic formula.
4. Solve radical equations and rational equations.
5. Solve linear inequalities, linear equations involving absolute value, Compound Inequalities, and Absolute Value Inequalities and state the solution in interval notation, and graph the solution.
6. Solve non-linear (quadratic and rational) inequalities, state the solution in interval notation, and graph the solution.
7. Solve exponential and logarithmic equations.
8. Solve systems of linear and nonlinear in two variables.
9. Find the distance and midpoint between two points in the Cartesian Plane.
10. Recognize the equation of a straight line, graph the equation of a straight line, find the slope and Intercepts of a line, know the relationship between the slopes of parallel and perpendicular lines, and be able to determine the equation of a line
11. Graph linear functions, quadratic functions, piecewise-defined functions, absolute value functions, Rational functions, exponential functions, and logarithmic functions.
12. Understand vertical and horizontal shifts, stretching, shrinking, and reflections of graphs of functions.
13. Recognize the equation of a circle, sketch the graph of a circle, and find the equation of a circle.
14. Determine the rational zeros of a polynomial.
15. Apply the definition of a function, determine the domain and range of a function, evaluate Expressions involving functional notation, simplify expressions involving the algebra of functions, and graph functions by plotting points.
16. Understand the inverse relationship between the exponential and logarithmic functions.
17. Perform operations with matrices.
18. Performing row operations on an augmented matrix.

Student Success

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reading the textbook
- Attending class in person and/or online
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

As a student, it is your responsibility to:

- Attend class in person and/or online
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Attain a raw score of at least 50% on the departmental final exam
- Be aware of and comply with academic honesty policies in the HCCS Student Handbook

Assignments, Exams, and Activities

Unit Tests

Unit tests are designed to help student study and succeed in the college level tests. There are 4 units tests that will be given a week before the respective college-level exam.

Insert a specific description of your exams and any exam policies. If your exams are on Eagle Online Canvas, advise students of the dates of availability of each exam, the time limit, if any, and the number of attempts allowed. HCC does not provide students with Scantron forms. They are sold in campus bookstores.

In-Class Activities

In-classes activities consist of a variety of approaches. For examples, worksheets, projects, videos, group work etc.

Students are expected to participate in class discussions, board work, and in class worksheets. If a student does not miss more than 10 days then a student will score a 100% for In-Class activities otherwise the student will receive a 0%.

College Level Final Exam Review Test

A minimum of 20 item test based on the college level final exam review will be administered with feedback to be given 1-3 weeks before the final exam week.

Instructor specify number of items and date.

Grading Formula

Please visit connect math or canvas to view current averages.

4 Tests 40% of your grade
 Homework 25% of your grade
 In-Class Activities 20% of your grade
 (Note: Activity grade: 100% or 0%, if a student misses more than 10 days)
 College level final exam review test 15% of your grade

Grade	Overall Percentage
A	90% +
B	80%-89%
C	70%- 79%
IP	<70% first time
F	<70% not first time
FX	Excessive absence

Developmental Math Department Grading Policy:

The grade of **D** is not allowed in developmental math courses. The grade of **FX** is given when a student fails due to lack of attendance. **A grade of IP is given only one time.** A grade of

W may be given on or before the official withdrawal date but not at the time of final grade submission.

Further support will be recommended for students who pass this class and do not pass the college level class.

HCC Grading Scale can be found on this site under Academic Information:
<http://www.hccs.edu/resources-for/current-students/student-handbook/>

Course Calendar

(TENTATIVE calendar subject to change by instructor)

Tentative course calendar:

Week	Dates	Topic/What's due
1	8/27-8/29	Syllabus; Solving Linear equations, Multiplication of polynomials, Quadratic Equations, Radical expressions,
2	9/3-9/5	Holiday, Factoring, Area/Volume, Least Common Denominator, Rational Exponent/ Radical Expressions,
3	9/10-9/12	Inequality; Interval Notation, Rectangular Coordinates; Unit Test 1
4	9/17-9/19	Test Review, Squaring binomial expressions, Completing the square, Circles
5	9/24-9/26	Linear equations in two variables
6	10/1-10/3	Functional Notation, Domain of a function
7	10/8-10/10	College Algebra Exam 2 material Review, Unit Test 2
8	10/15-10/17	Test Review, Solve quadratic equation
9	10/22-10/24	x- y intercepts; domain/range; multiplication of complex numbers; Rational Expressions
10	10/29-10/31	Unit Test 3; Test Review
11	11/5-11/7	Exponential/Logarithmic Functions
12	11/12-11/14	Solving Linear Equations in Two Variables
13	11/19-11/21	Matrices
14	11/26-11/28	College Algebra Exam 4 Materials; Unit Test 4
15	12/3-12/5	Final Exam Review Test
16		

Syllabus Modifications

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

Instructor's Practices and Procedures

Missed Assignments

No make up exams. The final exam will automatically replace one missed exam or 1 low exam if higher.

Academic Integrity

If a student is caught cheating the student may receive a zero for the assignment. Scholastic Dishonesty will result in a referral to the Dean of Student Services. See the link below for details.

Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):

<http://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/>

Attendance Procedures

MATH 0314 is a corequisite support course for MATH 1314. Students should be aware that sections of these courses are **LINKED**. Therefore, developmental math students who enroll in Math 0314 must also enroll in the linked section of Math 1314 (in the same semester). Developmental students **must**

maintain satisfactory attendance in BOTH Math 0314 and Math 1314. If a developmental student withdraws or drops from one course in the corequisite pair, then he/she will be dropped from the other linked course. Corequisite courses must be taken during the same semester. Please carefully read and consider the repeater policy in the [HCCS Student Handbook](#).

Please e-mail the instructor if you miss class. Students are responsible to learn the material covered on the day missed. **The last day to withdraw 11/1/2019.**

Student Conduct

It is our shared responsibility to develop and maintain a positive learning environment for everyone. As your instructor, I take this responsibility very seriously and will inform members of the class if their behavior makes it difficult for him/her to carry out this task. As a fellow learner, you are to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

Electronic Devices

The use of electronic devices by students in the classroom is up to the discretion of the instructor. Any use of such devices for the purposes other than student learning is strictly prohibited unless authorized as an appropriate ADA accommodation from the ADA Counselor.

Mathematics Program Information

- HCC Math Student Organizations: Mu Alpha Theta: Application: <https://www.hccs.edu/resources-for/current-students/stem--science-technology-engineering--mathematics/stem-clubs/mu-alpha-theta-application/>
- Mathematics related Scholarships: T-Stem: <https://www.hccs.edu/t-stem>

HCC Policies

Here's the link to the HCC Student Handbook <http://www.hccs.edu/resources-for/current-students/student-handbook/> In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- disAbility Support Services
- Electronic Devices
- Equal Educational Opportunity
- Financial Aid TV (FATV)
- General Student Complaints
- Grade of FX
- Incomplete Grades
- International Student Services
- Health Awareness
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC
- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning

- Veteran Services

EGLS³

The EGLS³ ([Evaluation for Greater Learning Student Survey System](#)) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS³ surveys are only available for the Fall and Spring semesters. -EGLS3 surveys are not offered during the Summer semester due to logistical constraints.

<http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/>

Campus Carry Link

Here's the link to the HCC information about Campus Carry:

<http://www.hccs.edu/departments/police/campus-carry/>

HCC Email Policy

When communicating via email, HCC requires students to communicate only through the HCC email system to protect your privacy. If you have not activated your HCC student email account, you can go [to HCC Eagle ID](#) and activate it now. You may also use Canvas Inbox to communicate.

Housing and Food Assistance for Students

Any student who faces challenges securing their foods or housing and believes this may affect their performance in the course is urged to contact the Dean of Students at their college for support. Furthermore, please notify the professor if you are comfortable in doing so.

This will enable HCC to provide any resources that HCC may possess.

Office of Institutional Equity

Use the link below to access the HCC Office of Institutional Equity, Inclusion, and Engagement (<http://www.hccs.edu/departments/institutional-equity/>)

disAbility Services

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including long and short term conditions, mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <http://www.hccs.edu/support-services/disability-services/>

Title IX

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of

sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross
 Director EEO/Compliance
 Office of Institutional Equity & Diversity
 3100 Main
 (713) 718-8271
 Houston, TX 77266-7517 or Institutional.Equity@hccs.edu
<http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/>

Office of the Dean of Students

Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/>

Department Chair Contact Information

College - Level Math Courses

Chair of Math	Susan Fife	SW Campus	713-718-7241	Stafford, Scarcella, N108
- Admin. Assistant	Tiffany Pham	SW Campus	713-718-7770	Stafford, Scarcella, N108
- Admin. Assistant	Christopher Cochran	SW Campus	713-718-2477	Stafford, Scarcella, N108
Math Assoc. Chair	Jaime Hernandez	CE Campus	713-718-7772	San Jacinto Building, Rm 369
Math Assoc. Chair	Ernest Lowery	NW Campus	713-718-5512	Katy Campus Building, Rm 112
Math Assoc. Chair	Mahmoud Basharat	NE Campus	713-718-2438	Codwell Hall Rm 105

Developmental Math Courses

Chair of Dev. Math	Jack Hatton	SE Campus	713-718-2434	Felix Morales Building, Rm 124
- Admin. Assistant	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Hien Nguyen	SE Campus	713-718-2440	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Adnan Ulhaque	SW Campus	713-718-5463	Stafford, Learning Hub, Room 208
Technical Support	Douglas Bump	SE	713-718-7317	Angela Morales Building, Rm

Specialist		Campus		101
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For issues related to your class, please first contact your instructor.
If you need to contact departmental administration, then contact the appropriate Associate Chair.
If further administrative contact is necessary, then contact the appropriate Department Chair.



COURSE OUTLINE FOR MATH 0314

Corequisite Support for MATH 1314

(updated 7/25/2019)

Catalog Description:

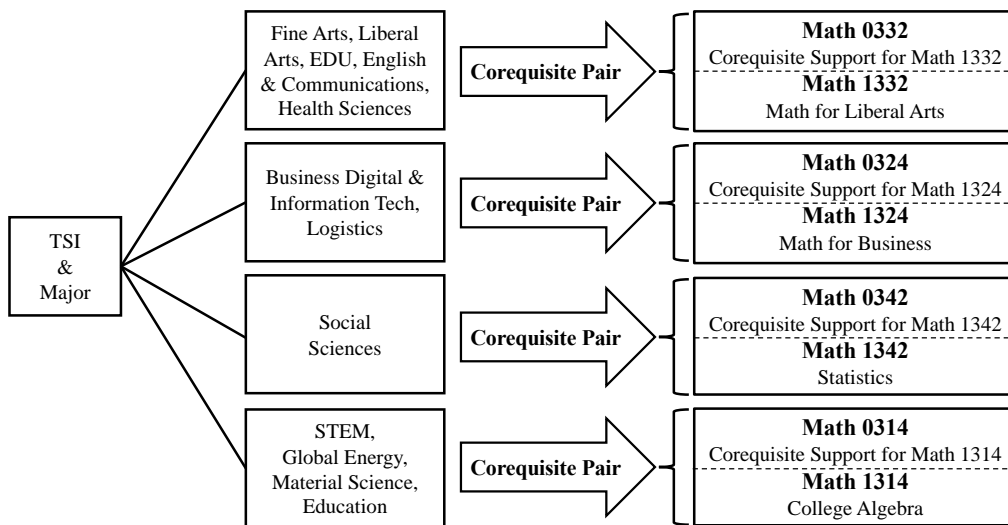
This course covers supporting material in order for students to be successful in MATH 1314 College Algebra. Topics include factoring techniques, radicals, algebraic fractions, absolute values, complex numbers, graphing linear equations and inequalities, quadratic equations, systems of equations, graphing quadratic equations, and an introduction to functions. 3 credits.

Prerequisites: MATH 0309 or MATH 0314P: Pass with “C” or better; or equivalent score on the placement exam or a score of 336-349 AND Intermediate Algebra Diagnostic Score 4-15 on TSIA.

Course Description: Math concepts required to be successful in MATH 1314. Topics include: Solve linear equations in one variable, solve quadratic equations in one variable, solve radical equations and rational equations, solve linear inequalities, linear equations involving absolute value, and absolute value inequalities, non-linear (quadratic and rational) inequalities, exponential and logarithmic equations, systems of linear and nonlinear in two variables, the equation of a straight line, quadratic functions, piecewise-defined functions, rational functions, exponential and logarithmic functions, understand transformations of graphs of functions, find the equation of a circle, determine the rational zeros of a polynomial, simplify expressions involving the algebra of functions, understand the inverse relationship between the exponential and logarithmic functions, perform operations with matrices.

Corequisite: MATH 0314 is a corequisite for MATH 1314. Students must maintain satisfactory attendance in both Math 0314 and Math 1314. Withdrawing from MATH 0314 will necessitate withdrawal from MATH 1314. Corequisite courses must be taken during the same semester.

HCC Math Pathway:



Credit: 3 hours credit (3 Lecture)

Audience: This course is for students who require state mandated remediation and are enrolled in a STEM Area of Study.

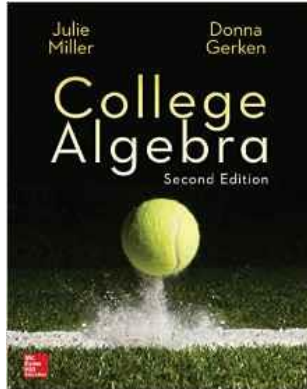
Course Goal: This course is intended to provide students enrolled in STEM areas of study with the support needed to successfully complete MATH 1314: College Algebra.

Course Student Learning Outcomes (SLO):

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

Course Objectives: Upon successful completion of this course, students will:

1. Solve Quadratic Equations in one variable by the method of factoring, square root property, completing the square and the quadratic formula.
2. Solve radical equations, fractional equations, and equations of quadratic form.
3. Solve linear inequalities and linear equations involving absolute value, state the solution in interval notation, and graph the solution.
4. Solve non-linear (quadratic and rational) inequalities, state the solution in interval notation, and graph the solution.
5. Solve exponential and logarithmic equations.
6. Solve systems of linear and nonlinear in two variables.
7. Find the distance and midpoint between two points in the Cartesian Plane.
8. Recognize the equation of a straight line, graph the equation of a straight line, find the slope and intercepts of a line, know the relationship between the slopes of parallel and perpendicular lines, and be able to determine the equation of a line
9. Graph linear functions, quadratic functions, piecewise-defined functions, absolute value functions, polynomial functions, rational functions, exponential functions, and logarithmic functions.
10. Understand vertical and horizontal shifts, stretching, shrinking, and reflections of graphs of functions.
11. Recognize the equation of a circle, sketch the graph of a circle, and find the equation of a circle.
12. Determine the rational zeros of a polynomial.
13. Apply the definition of a function, determine the domain and range of a function, evaluate expressions involving functional notation, simplify expressions involving the algebra of functions, graph functions by plotting points, use the definition
14. Understand the inverse relationship between the exponential and logarithmic functions.
15. Perform operations with matrices.
16. Solve and apply systems of linear equations using matrices.



Textbook: *College Algebra Math 2nd ed.* (by Julie Miller and Donna Gerken, McGraw Hill Publishing, 2016).

ISBN: 9781260029604 (textbook and access code for Connect Math)

ISBN: 9781260029611 (access code with e-book)

Work Book: Corequisite Workbook for College Algebra

Course Outline: The content in this outline is suggested for your usage. All the sections of MATH 1314 listed below are required. However, MATH 1314 instructor may choose a difference sequence. If you are an instructor of MATH 0314 only, then you must work your MATH 1314 instructor regarding:

- course calendar,
- calculator policy,
- inclusion or exclusion of optional topics,
- homework assignments and due dates,
- scheduling of unit quiz ahead of unit test in college math,
- scheduling of final exam review quiz ahead of final exam week.

In this outline, all worksheet refers to the Corequisite Workbook for College Algebra. Students may download and print the workbook from Connect Math. Instructors of MATH 0314 are free to modify existing resources, and incorporate additional support resources to meet their needs. It is suggested that the even numbered problems of MATH 1314 textbook be used as guided examples in class and allow the students to practice the odd numbered problems for homework. Instructors may wish to obtain the step-by-step solution manual.

MATH 1314 Chapter 1 Topics (8 hours)	MATH 0314 Support Topics and Resources (suggested)
1.4 Quadratic Equations	<ul style="list-style-type: none"> • Syllabus Review • Study Skill: How to Plan Your Time • Simplifying Square Roots of Negative Real Numbers • Factoring Trinomials by Grouping • Factoring Binomials and Difference of Two Squares • Solving Linear Equations
1.4 Quadratic Equations	<ul style="list-style-type: none"> • Solving Equations by Using the Zero Product Rule • Solving Quadratic Equations by the Square Root Property • Solving Quadratic Equations Using Completing the Square • Solving Quadratic Equations Using Quadratic Formula
1.5 Applications of Quadratic Equations	<ul style="list-style-type: none"> • Study Skill: Improving Concentration • Areas of Common Geometric Figures

	<ul style="list-style-type: none"> • Volumes of Common Geometric Figures • Pythagorean Theorem • Solving Applications of Quadratic Equations
1.6 More Equations and Applications	<ul style="list-style-type: none"> • Restricted Values of a Rational Expression • Least Common Denominator • Solving Rational Equations • Multiplication of Expressions with Radicals • Solving Radical Equations
1.6 More Equations and Applications	<ul style="list-style-type: none"> • Study Skill: Motivation Strategies • Absolute Value Equations • Converting Between Rational Exponents and Radical Notation • Solving Equations Containing Rational Exponents
1.7 Linear, Compound, and Absolute Value Inequalities	<ul style="list-style-type: none"> • Set-Builder Notation and Interval Notation • Solving Linear Inequalities in One Variable • Absolute Value Inequalities • Study Skill: Overcoming Test Anxiety
Test 1	<ul style="list-style-type: none"> • Administer and provide feedback on Unit Test prior to college math Test 1

MATH 1314 Chapter 2 Topics (10 hours)	MATH 0314 Support Topics and Resources (suggested)
2.2 Circles	<ul style="list-style-type: none"> • The Rectangular Coordinate System • Graphing an Equation by Plotting Points • Distance and Midpoint Formulas • Standard Form of Equation of a Circle
2.3 Functions and Relations	<ul style="list-style-type: none"> • Study Skill: Remembering for Exams • Definition of a Function • Domain and Range of a Function • Evaluating Functions • x- and y-Intercepts
2.4 Linear Equations in Two Variables and Linear Functions	<ul style="list-style-type: none"> • The slope of a Line • Slope-Intercept Form of a Line • Graphing Linear Function Parallel and Perpendicular Lines
2.5 Applications of Linear Equations and Modeling	<ul style="list-style-type: none"> • Point-Slope Formula
2.6 Transformations of Graphs	<ul style="list-style-type: none"> • Vertical Translations of the Basic Quadratic Function • Horizontal Translations of the Basic Quadratic Function • Shrinking and Stretching of the Basic Quadratic Function • Reflections Across the x- Axes of the Basic Quadratic Function • Reflections Across the y- Axes of the Basic Quadratic Function

2.7 Analyzing Graphs of Functions and Piecewise- Defined Functions	<ul style="list-style-type: none"> • Evaluate Piecewise-Defined Functions • Graph Piecewise-Defined Functions • Even and Odd Functions
2.8 Algebra of Functions and Function Compositions	<ul style="list-style-type: none"> • Perform Basic Operations on Functions (Addition and Subtraction) • Perform Basic Operations on Functions (Multiplication and Division) • Evaluate the Difference Quotient for Linear Functions • Vertex of a Quadratic Function
Test 2	<ul style="list-style-type: none"> • Administer and provide feedback on Unit Test prior to college math Test 2

MATH 1314 Chapter 3 Topics (8 hours)	MATH 0314 Support Topics and Resources (suggested)
3.1 Quadratic Functions and Applications	<ul style="list-style-type: none"> • Graphs of Quadratic Functions • Domain and Range of a Quadratic Function • Applications of Quadratic Functions
3.2 Introduction to Polynomial Functions	<ul style="list-style-type: none"> • End-Behavior of Polynomial Functions • x- and y intercepts of Polynomial Functions
3.3 Division of Polynomials and the Remainder and Factor Theorems	<ul style="list-style-type: none"> • Dividing by a Monomial • Dividing Polynomials Using Long Division • Multiplying Expressions Containing Radicals • Multiplication of Complex Numbers
3.4 Zeros of Polynomials	<ul style="list-style-type: none"> • Factors of an Integer • Multiplying algebraic expressions
3.5 Rational Functions	<ul style="list-style-type: none"> • List of the possible rational zeros • Domain of a rational functions • Graphing rational functions
3.6 Polynomial and Rational Inequalities	<ul style="list-style-type: none"> • Solving Quadratic Inequalities • Adding and Subtracting Rational Expressions • Solving Rational Inequalities

MATH 1314 Chapter 4 Topics (6 hours)	MATH 0314 Support Topics and Resources (suggested)
4.1 Inverse Functions	<ul style="list-style-type: none"> • One-to-One Function • Horizontal Line Test • Definition of Inverse Functions • Finding Inverse of Linear Functions
4.2 Exponential Functions	<ul style="list-style-type: none"> • Definition of Exponential Functions • Evaluating Exponential Expressions with Integer Exponents • Graphs of Basic Exponential Functions– 35 min
4.3 Logarithmic Functions	<ul style="list-style-type: none"> • Definition of Logarithmic Expressions • Introduce the inverse relationship between the exponential and logarithmic functions

	<ul style="list-style-type: none"> • Graphs of Basic Logarithmic Functions
4.4 Properties of Logarithms	<ul style="list-style-type: none"> • Converting Radical Expressions to Rational Exponents • Product, Quotient, and Power Properties of Logarithms
4.5 Exponential and Logarithmic Equations	<ul style="list-style-type: none"> • Solving Exponential Equations Using the Equivalence Property • Solving Logarithmic Equations Using the Equivalence Property
Test 3	<ul style="list-style-type: none"> • Administer and provide feedback on Unit Test prior to college math Test 3

MATH 1314 Chapters 5-6 Topics (4 hours)	MATH 0314 Support Topics and Resources (suggested)
5.1 Systems of Linear Equations in Two Variables and Applications	<ul style="list-style-type: none"> • Simplifying Algebraic Expressions Containing Parentheses • Simplifying Algebraic Expressions Containing Fractions and Decimals • Solving Systems of Linear Equations in Two Variables Using the Graphing Method • Solving Systems of Linear Equations in Two Variables Using the Addition Method • Solving Systems of Linear Equations in Two Variables Using the Substitution Method • Using systems of Linear Equations in Application
5.4 Systems of Nonlinear Equations in Two Variables	<ul style="list-style-type: none"> • Solving Systems of Nonlinear Equations in Two Variables Using the Addition Method • Solving Systems of Nonlinear Equations in Two Variables Using the Substitution Method
6.1 Solving Systems of Linear Equations Using Matrices	<ul style="list-style-type: none"> • Write the Augmented Matrix for the System of Equations • Performing Row Operations
6.3 Operations on Matrices	<ul style="list-style-type: none"> • Perform Operations on Matrices
6.5 Determinants	<ul style="list-style-type: none"> • Determinant of a 2x2 Matrix • Study Skills: Tips for the Final Exam
Test 4	<ul style="list-style-type: none"> • Administer and provide feedback on Unit Test prior to college math Test 4
Final exam review	<ul style="list-style-type: none"> • Final exam review test • Provide feedback on the final exam review test
Comprehensive final exam	

System-Wide Policies:

1. Each instructor must provide just-in-time support as prescribed in the calendar for all college level topics throughout the semester.
2. The final exam review test based on the College Level Final Exam Review is comprehensive, and questions on it can cover material from any required college level section, excluding any optional sections.

3. The instructor's course syllabus must be posted to the learning web and students should be informed of how to find the syllabus by the end of the first week of class.
4. A minimum of 3 in class unit tests must be given in this class.
5. Unit tests should be announced one week in advance. All unit quizzes should be administered at least one week prior to the assigned date of the corresponding college level exam.
6. The College level final exam review quiz must count for 15% of the grade.
7. The calculator policy will be the same as that of the college level course.
8. Course grading is to be based on the following:

a. Homework	20% – 30%
b. Unit Tests	30% – 40%
c. In-class activities*	20% – 25%
d. College level final exam review quiz	<u>15% – 20%</u>
	100%

* In-class activities may include worksheets, group work, projects, study skills, videos, etc.

9. The following policy was adopted by Houston Community College Developmental Mathematics Department regarding the system-wide Corequisite Support Course Assessment:
 - a. There will be no final examination in the Support Course
 - b. Students whose overall course average is equal to or greater than 70%, will be considered college ready.
 - c. Course grades are averaged and awarded based upon the standard 10-point scale.

AVERAGE	GRADE
$90\% \leq \text{Final Average} \leq 100\%$	A
$80\% \leq \text{Final Average} < 90\%$	B
$70\% \leq \text{Final Average} < 80\%$	C
$0\% \leq \text{Final Average} < 70\%$	IP

Note: The grade of **D** is not allowed in developmental math courses. The grade of **FX** is given when a student fails due to lack of attendance. **A grade of IP is given only one time.** A grade of **W** may be given on or before the official withdrawal date but not at the time of final grade submission.

10. Any review sheet should be comprehensive and the student should not feel that classroom notes and activities, homework, and tests might be ignored in favor of the review sheet for any quizzes.

Resource Materials:

Any student enrolled in Math 0314 at HCC has access to the Learning Resource Center (LRC) where they may get additional help in understanding the theory or improving their skills. The LRC is staffed with mathematics faculty and student assistants, and offers tutorial help, videos and computer-assisted drills.

Suggested Methods:

It is helpful to begin each class with questions concerning the material discussed and the assigned homework problems. It is suggested that allowing the students to work on examples in class follow

lectures and new material. Students should be encouraged to work the review exercises at the end of each chapter and prompted to use the Learning Resource Center at their respective college.

Americans with Disabilities Act (ADA):

Students needing accommodations due to a documented disability should contact the ADA counselor for their college as soon as possible. Identify all documented disabled students and insure them that your class will be structured to comply with their disabilities. It is recommended that you put a clause in your course syllabus that addresses the disabled student.