HOUSTON COMMUNITY COLLEGE

Division of Mathematics
Mathematics Department
https://learning.hccs.edu/programs/mathematics

Math 1314: College Algebra | Lecture | CRN#15681

Spring 2020 | 12 Weeks (02.18.2020- 5.17.2020)
Distance Education
3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor:	Mohammad Afaneh, M.A.	Office Phone:	713-718-2163
Office:	Northline, Room 321	Office Hours:	M-R 9:30-11:45 a.m.
HCC Email:	mohammad.afaneh@hccs.edu	Office Location:	Northline Faculty Area

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

Communication between the instructor and students will be thru the Canvas Online system. I will respond to emails within 24 hours Monday through Friday; I will reply to weekend messages on Monday mornings.

What's Exciting About This Course

Math is a beautiful subject and College Algebra is foundational to discovering its beauty. As you navigate through this course you will develop patterns of thought and learn methods of solving problems which are useful in all walks of life.

My Personal Welcome

Welcome!!! I look forward to a rewarding and successful semester as your instructor. To be successful you should approach this course with passion, a well-designed schedule and a commitment to stay engaged.

I will present the information in the most exciting 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 walk out of the course with a better understanding of yourself and of human behavior. So please visit me or contact me by email whenever you have a question.

Prerequisites and/or Co-Requisites

Prerequisites: A grade of C or better in Math 0312 or its equivalent or an acceptable placement score. A grade of C or better in Math 0314 or its equivalent or an acceptable placement score.
Co-Requisites: MATH 0314 is a co-requisite to MATH 1314. Since MATH 0314 is co-requisite with MATH 1314, withdrawing from either MATH 0314 or Math 1314 will necessitate withdrawal from the other as well. Please carefully read and consider the repeater policy in the HCCS Student Handbook.

Canvas Learning Management System

This section of MATH 1314 will use Canvas (https://eagleonline.hccs.edu) to supplement in-class assignments, exams, and activities. **We will use Canvas to gain access to connectmath, communicate with instructor, check your grades and discussion questions.**
HCCS Open Lab locations may be used to access the Internet and Canvas. **USE FIREFOX OR CHROME AS THE INTERNET BROWSER**.

HCC Online Information and Policies

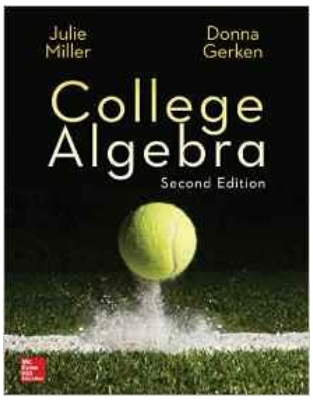
Here is the link to information about HCC Online classes including the required Online Orientation for all fully online classes: http://www.hccs.edu/online/

Scoring Rubrics, Sample Assignments, etc.

Look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. https://eagleonline.hccs.edu/login/ldap

Instructional Materials

Textbook Information



The textbook listed below is ***required*** for this course.
College Algebra Math 2nd ed. (by Julie Miller and Donna Gerken, McGraw Hill Publishing, 2016).
ISBN: 9781264048007 (textbook and access code for Connect Math)
ISBN: 9781264048014 (access code with e-book)
It is included in a package that contains the text as well as an access code and are found at the HCC Bookstore. 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 and the online eBook, go to www.connectmath.com and register using the Connect Math through Canvas.

Other Instructional Resources

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

Supplemental 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 is designed as a review of advanced topics in algebra for science and engineering students who plan to take the calculus sequence in preparation for their various degree programs. It is also intended for non-technical students who need college mathematics credits to fulfill requirements for graduation and prerequisites for other courses. It is generally transferable as math credit for non-science majors to other disciplines.

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 completion of MATH 1314, the student will be 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 1314, the student will be able to:

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, and 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.

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
- Be aware of and comply with academic honesty policies in the HCCS Student Handbook

Assignments, Exams, and Activities

Exams

We will have three Major exams and the Final. In addition, to your Homework you must participate in the discussion questions in Canvas.

In-Class Activities

Discussion questions are done in Canvas. Each week I post a DQ for students to respond and post a substantive response.

Final Exam

All students will be required to take a cumulative departmental Final Exam. Students must provide their own Scantron form. Students will be provided with a departmental study guide for the final exam.

Final Exam Review Sessions: HCC MATH DAYS

The statement below is For RT, SS, and F8B sessions only. If you are teaching a section of this course in the F8A session, then please remove this statement below from your student syllabus.

The Math Department will offer several Final Exam Review sessions (i.e., **HCC Math Days**) for this course near the end of the semester (Fall and Spring semesters only). We encourage you to attend at least one of these sessions as you prepare for the comprehensive Final Exam. Your professor will provide you with more information regarding HCC Math Days locations and session times later in this semester.

While the full-time Math Department faculty leading these review sessions are prepared to answer students' questions on a variety of course topics, the **Final Exam Study Guide** will provide the basis for the HCC Math Days sessions. Therefore, to get the most out of these review sessions, be sure review and to work through the **Final Exam Study Guide** before you attend the review session(s). Please ask your professor if you have any questions regarding these sessions. Finally, the Math 1314 **Final Exam Study Guide** and the **dates** for the Math Days review sessions are located at:
https://cofinite.com/MathDays/Math1314.php

Grading Formula

Instructor Note: Please indicate whether students can use ConnectMath, Canvas, or other gradebook to estimate their current Grade. You may write in a breakdown of your grade calculation by points or percentage.
For Example: (please remember to change it to fit your grading policy**)**

Exam 1	20% of your grade
Exam 2	20% of your grade
Exam 3	20% of your grade
Homework	15% of your grade
Final Exam	25% of your grade

FCA = E1 *0.2+E2*0.2+E3*0.2+HW*0.15+Final*0.25.

Grade	Overall Percentage
A	90% +
B	80%-89%
C	70%- 79%
D	60%-69%
F	<60%

For distance Ed (Online courses):
The Math Department requires that at least **45%** of your course grade will consist of scores from *at least two in-person proctored exams in the Testing Center*.

Incomplete Policy:
In order to receive a grade of Incomplete ("I"), a student must have completed at least 85% of the work in the course. In all cases, the instructor reserves the right to decline a student's request to receive a grade of Incomplete.

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

Course Calendar

Examinations	Sections covered	Date	Location	
Exam One	Unit 1	March 6 - 8	Proctored Exam	
Exam Two	Unit I and II	April 2 - 4	Online	
Exam Three	Unit III and IV	May 01 - 03	Online	
Final	Comprehensive	May 14 - 16	Central Campus	

Exam One Location:

Paper based exams locations

Friday @ Central Campus 4pm - 9pm; Last admit 7pm

Saturday @ Spring Branch 10am - 3pm; Last admit 12:50pm

Sunday @ Eastside campus 10am - 3pm; Last admit 1pm

Final Exam will be at:

Online (Computer) Based Exam Locations

Thursday @ Central Campus - 4pm - 9pm; Last admit 6:50pm

Friday @ Central Campus - 10am - 9pm; Last admit 6:50pm

Saturday @ Central Campus - 10am - 3pm; Last admit 12:50pm

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

There will be no make-up exams under any circumstances. Missing only one exam will not penalize any student. In the event that a student should miss one exam, the final exam grade will be substituted in its place.

Academic Integrity

All forms of academic dishonesty including, but not limited to cheating, plagiarism, and collusion are serious offenses. Possible consequences for academic dishonesty include a grade a 0 or F in the particular assignment, failure in the course, and/or recommendations for probation or dismissal from the institution.

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

HCC policy allows an instructor to drop a student who has missed in excess of 12.5% of contact hours. If you miss more than 4 classes, you may be dropped from the course.
Students who arrive more than 10 minutes late or leave more than 10 minutes early will be counted absent for half the class.

The last day to withdraw is April 16/ 2020.

Student Conduct

This is an online math class. Students are expected participate, be respectful to others, and stay engaged. When you attend a face to face class, you can either learn something or simply sit there and do nothing. Here, you learn by taking notes while reading the textbook, working through assignments, watching the PowerPoints and/or viewing lecture videos, interacting with me and your classmates in the discussion room, doing Homework and study for exams.

Electronic Devices

I expect you to refrain from using your phone during class time. Electronics may be used for the purpose of mathematics education only. Any other use may result in you being asked to leave the classroom for the remainder of the day. 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.

The use of a calculator during any exam, including the final exam, is prohibited.

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/

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

EGLS^3

The EGLS^3 (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. EGLS^3 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 Specialist	Douglas Bump	SE Campus	713-718-7317	Angela Morales Building, Rm 101

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: The lecture/examination schedule given below is suggested for usage; the instructor is free to modify the schedule to meet his/her own needs.

APPROXIMATE TIME	TEXT REFERENCE

Unit I - Equations and Inequalities *Sections: 1.4, 1.5, 1.6, 1.7*
(8 hours)
This unit includes graphs of equations, quadratic equations and applications, complex numbers, other types of equations, linear inequalities in one variable, and other types of inequalities.

Notes: 1. Section 1.4: This section includes quadratic equations with both real and complex solutions, as complex arithmetic is covered in section 1.3.
2. Section 1.3: Operations with complex numbers (*Optional*).

Unit II - Functions and Their Graphs *Sections: 2.2 → 2.8*
(10 hours)

This unit includes linear equations in two variables, functions, analyzing graphs of functions, a library of Parent functions, transformations of functions, combinations of functions, and composite functions.

Notes: 1. Section 2.5: The latter half of this section on applications of linear equations and linear regression should be omitted.

Unit III - Polynomial Functions *Sections 3.1 → 3.6*
(8 hours)

This chapter includes quadratic functions and models, polynomial functions of higher degree, synthetic division, zeros of polynomial functions, rational functions, and inequalities.

Unit IV - Exponential and Logarithmic Functions (6 hours)

Sections: 4.1 → 4.5

This unit includes inverse functions, exponential functions and their graphs, logarithmic functions and their graphs, properties of logarithm and exponential and logarithmic equations.

Unit V – Systems and Matrices (4 hours)

Sections: 5.1, 5.4,6.1, 6.3 6.5(exclude Cramer's rule)

This unit includes linear and nonlinear systems of equations, two variable linear systems, solving system of equations using matrices, operations with matrices and the determinant of a square matrix.