



**DEPARTMENT OF MATHEMATICS
SOUTHWEST COLLEGE**

**COURSE SYLLABUS – SUMMER I 2018
MATH 1314: College Algebra**

CRN 74926 / Mo - Fr 12:00 PM – 1:50 PM / West Loop Center, Room C243

INSTRUCTOR:	Houssam Kalajo
CONTACT INFORMATION:	Houssam.kalajo@hccs.edu web page http://learning.hccs.edu/faculty/houssam.kalajo
Connect Math Course Code:	FVY9-UUP6J All homework assignments Due on or before 07/01/2018

Office location and hours: West Loop Campus, Student Success Center F15, 7–8 am, Mo – Fr; by appointment.

Course Description

In-depth study and applications of quadratic, polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices and matrices and determinants. A departmental final examination will be given in this course.

Prerequisites

Math 0312, its equivalent, or an acceptable placement test score.

Credits: 3 credit hours (3 lectures).

Course Goal

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.

Course Student Learning Outcomes (SLO): 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 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: At the completion of this course, a student should 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

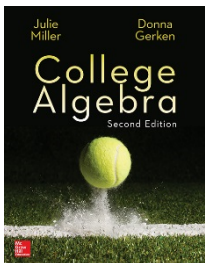
9. Graph linear functions, quadratic functions, piecewise-defined functions, absolute value functions, polynomial functions, rational functions, exponential functions, and logarithmic functions.
10. Understand vertical and horizontal shifts, stretching, shrinking, and reflections of graphs of functions.
11. Recognize the equation of a circle, sketch the graph of a circle, and find the equation of a circle.
13. Determine the rational zeros of a polynomial.
14. 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
15. Understand the inverse relationship between the exponential and logarithmic functions.
16. Perform operations with matrices.
17. Solve and apply systems of linear equations using matrices.

Critical Thinking Skills: 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.

Empirical and Quantitative Skills: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Instructional Materials



Textbook: College Algebra, 2nd ed. by Miller and Gerken, McGraw-Hill, 2016.

ISBN-13: 978-007783644

Students will either need to purchase their textbook/access code bundle from the bookstore, OR they can purchase online via the Connect Math registration process.

Course Outline

Pre-Test on Connect Math must be taken by all students. This test is given to measure the student readiness for the course only. **This grade will not be used to calculate your final average score in the course.**

APPROXIMATE TIME	TEXT REFERENCE
Unit I - Equations and Inequalities (8 hours)	<i>Sections: 1.3, 1.4, 1.5, 1.6, 1.7</i>
<p>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.</p> <p>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.</p> <p>2. Section 1.3: Operations with complex numbers (<i>Optional</i>).</p>	
Unit II – Functions and Their Graphs (10 hours)	<i>Sections: 2.2 → 2.8</i>
<p>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.</p>	

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 (8 hours)

Sections 3.1 → 3.6

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.

Instructional Methods

As an instructor, I want my students to be successful. I feel that it is my responsibility to provide you with knowledge concerning mathematical concepts contained in our developmental math curriculum. This knowledge will prepare you for College Algebra and will allow you to meet the math requirements that are needed for your career of choice. As a student wanting to master the mathematical concepts contained in the developmental math curriculum, it is your responsibility to read the textbook, submit assignments on the due dates, study for the exams, participate in classroom activities, attend class, and enjoy the learning experience. In this course, you will be involved in discussions with your classmates and your instructor. As you will want to contribute to these discussions, you will need to come to class prepared to discuss, analyze, and evaluate information from your text and notes.

Student Assignments

Assignments have been developed that will enhance your learning. To better understand a topic, you will be given assignments on key information that you will need to remember for your success in your career. Students will be required to successfully complete the following:

Mathematics Homework Assignments

All homework assignments for this class must be completed online using Connect Math. The Connect Math Course Code is to be used for registration purposes only. To register for Connect Math and to access the homework, go to www.connectmath.com.

Notes:

- ❖ Be sure that your name in Connect Math exactly matches your name on Class Roster.
- ❖ No extra work is given for extra credit.
- ❖ No extra work is given to “bring up my grade” or because this is the “last class I need to graduate”.

Calculator Policy: The use of a calculator during an exam is not allowed.

Exam Policy: There will be three or four major examinations plus the final exam. Each exam is worth 100 points. Before each exam, please clear your desk of all material except pencils/pens, erasers, calculator, and scratch work. In addition, please do not share any material during an exam.

Make-up Policy

Tests must be taken on the specified day. **No MAKE-UP** examinations will be given. The final examination grade will be substituted for one missed test only, **regardless of the reason**. If a second test is missed, the score for that test is zero.

Final Examination:

The final exam is departmental exam, consisting of 33 multiple choice problems. The problems cover only the required material. The final examination must be taken by all students.

Test Schedule:

Test 1	Sections 1.3 – 1.7 and 2.2 - 2.3	TBA in class
Test 2	Sections 2.4 - 2.8 and 3.1 - 3.2	TBA in class
Test 3	Sections 3.3 – 3.6 and 4.1 – 4.2	TBA in class
Test 4	Sections 4.3 – 4.5, 5.1, 5.4, 6.1, 6.3, and 6.5	TBA in class
Final Exam	Comprehensive - Chapters 1 - 6	07/05/2018 12:00 PM – 1:50 PM

Students with disabilities

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including 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/district/students/disability-services/>

Ability Services Contact Information

Central College	713-718-6164	
Coleman College	713-718-7376	
Northeast College	713-718-8322	
Northwest College	713-718-5422	713-718-5408
Southeast College	713-718-7144	
Southwest College	713-718-5910	
Adaptive Equipment/Assistive Technology	713-718-6629	713-718-5604
Interpreting and CART services	713-718-6333	

HCC Policy Statement: 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
 Houston, TX 77266-7517 or Institutional.Equity@hccs.edu
 Phone number: (713) 718-8271

Basic Needs Security Statement

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable us to provide any resources that HCC may possess.

Campus Carry – HCC

At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at <http://www.hccs.edu/district/departments/police/campus-carry/>

HCC Policy Statement: Academic Honesty

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each

student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook)

HCC Policy Statements

Class Attendance - It is important that you come to class! Attending class regularly is the best way to succeed in this class. Research has shown that the single most important factor in student success is attendance. Simply put, going to class greatly increases your ability to succeed. You are expected to attend all lecture and labs regularly. You are responsible for materials covered during your absences. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences.

If you are not attending class, you are not learning the information. As the information that is discussed in class is important for your career, students may be dropped from a course after accumulating absences in excess of six (6) hours of instruction. The six hours of class time would include any total classes missed, for excessive tardiness or for leaving class early.

You may decide NOT to come to class for whatever reason. As an adult making the decision not to attend, you do not have to notify the instructor prior to missing a class. However, if this happens too many times, you may suddenly find that you have "lost" the class.

Poor attendance records tend to correlate with poor grades. If you miss any class, including the first week, you are responsible for all material missed. It is a good idea to find a friend or a buddy in class who would be willing to share class notes or discussion or be able to hand in paper if you unavoidably miss a class. Class attendance equals class success.

HCC Course Withdrawal Policy

If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of withdrawal. Before you withdraw from your course; please take the time to meet with the instructor to discuss why you feel it is necessary to do so. The instructor may be able to provide you with suggestions that would enable you to complete the course. Your success is very important. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than **SIX** total course withdrawals **throughout** their educational career in obtaining a certificate and/or degree.

To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your professor *may* "alert" you and HCC counselors that you might fail a class because of excessive absences and/or poor academic performance. It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

If you plan on withdrawing from your class, you **MUST** contact a HCC counselor or your professor prior to withdrawing (dropping) the class for approval and this must be done **PRIOR** to the withdrawal deadline to receive a "W" on your transcript. **Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online registration calendars, HCC schedule of classes and catalog, any HCC Registration Office, or any HCC counselor to

determine class withdrawal deadlines. **Remember to allow a 24-hour response time when communicating via email and/or telephone with a professor and/or counselor. Do not submit a request to discuss withdrawal options less than a day before the deadline.** If you do not withdraw before the deadline, you will receive the grade that you are making in the class as your final grade. If you wish to drop the class, then it is your responsibility to do that before the final drop date. **Neither you nor your instructor will be able to perform the drop after the final drop date and I will not drop you for nonattendance. The last day to withdraw from this course with a grade of W is June 25, 2018.**

ATTENDANCE POLICY: Attendance is compulsory and is checked during every class. When you have accumulated 12.5 % or 6 hours of absences, the instructor is obligated by law to drop you from the class. ***It is your responsibility to be sure that you are marked present before leaving the class.*** Students are expected to attend class regularly, and they are responsible for materials covered during their absences. Students can contact their friends or myself if available regarding it. The nature of the course is such that perfect attendance is essential for mastery of the course content. A missed class can never be duplicated.

INSTRUCTIONS POLICY: All instructions given in class must be followed strictly. No excuse shall be accepted if you do not follow or miss instructions. It is your responsibility to clarify the doubts immediately.

Repeat Course Fee

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

Classroom Behavior

As your instructor and as a student in this class, it is our shared responsibility to develop and maintain a positive learning environment for everyone. Your instructor takes 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 asked to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

Misuse of Electronic Devices in the Classroom

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

Personal Communication Device Policy

All personal communication devices (any device with communication capabilities including but not limited to cell phones, blackberries, pagers, cameras, palmtop computers, lap tops, PDA's, radios, headsets, portable fax machines, recorders, organizers, databanks, and electronic dictionaries or translators) must be muted or turned off during class. Such activity during class time is deemed to be disruptive to the academic process. Personal communication devices are to not be on the student desk during examinations. Usage of such devices during exams is expressly prohibited during examinations and will be considered cheating (see academic honesty section above).

Instructor Requirements

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 class activities, discussions, and lectures
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness and make up
- Provide the course outline and class calendar which will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

To be successful in this class, it is the student's responsibility to:

- Attend class and participate in class discussions and activities
- Read and comprehend the textbook
- Complete the required assignments and exams:
- Complete Chapter Exams, MyMathLab Homework, Final Exam

- Ask for help when there is a question or problem

Keep copies of all paperwork, including this syllabus, handouts and all assignments.

Grading policy

Your instructor will conduct exams, and monitor your progress on homework assignments to determine how successful you are at achieving the course learning outcomes (mastery of course content and skills) outlined in the syllabus. If you find you are not mastering the material and skills, you are encouraged to reflect on how you study and prepare for each class. Your instructor welcomes a dialogue on what you discover and may be able to assist you in finding resources on campus that will improve your performance.

Your course grade will be computed as follows:

One lowest major exam out of 4 will be dropped.

3 exams	45% (each 15%)
Homework	20%
Final exam	35%

Final Average Score = Average of 3 exams * 0.45 + HWK (Connect Math) * 0.20 + Final Exam * 0.35

Your final course grade is based on the following standard HCC scale.

Final Average Score	$90 \leq \text{Avg} \leq 100$	$80 \leq \text{Avg} < 90$	$70 \leq \text{Avg} < 80$	$60 \leq \text{Avg} < 70$	$\text{Avg} < 60$
Final Course Grade	A	B	C	D	F or FX

FINAL GRADE OF FX Students who stop attending class and do not withdraw themselves prior to the withdrawal deadline may either be dropped by their professor for excessive absences or be assigned the final grade of “FX” at the end of the semester. Students who stop attending classes will receive a grade of “FX”, compared to an earned grade of “F,” which is due to poor performance.

Please note that HCC will not disperse financial aid funding for students who have never attended class. Students who receive financial aid but fail to attend class will be reported to the Department of Education and may have to pay back their aid. A grade of “FX” is treated exactly the same as a grade of “F” in terms of GPA, probation, suspension, and satisfactory academic progress.

Resources

The HCC Tutoring Centers provide free tutoring for individual subjects offered at specific times throughout the week on various campuses. There is no need to make an appointment. If you need a tutor, visit: www.hccs.edu/findatutor for times and locations. For more information about tutoring at HCC, visit www.hccs.edu/district/students/tutoring.

Additional help is also available through Student Support Services. Students can get free assistance, 24 hours a day, 7 days a week, in Math, English and other subjects, at <https://hccs.upswing.io/>. Typically, posted questions are answered by an HCC tutor or faculty within 24 hours (usually under 6 hours). There are also several online math resources that you can find with an internet search. You may also find information on the Learning Web site accessible through your specific HCCS campus website.

EGLS3 -- Evaluation for Greater Learning Student Survey System

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term. Visit www.hccs.edu/EGLS3 for more information.

Administration contact information

College - Level Math Courses

Chair of Math	Jaime Hernandez	SW Campus	713-718-2477	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	Clen Vance	CE Campus	713-718-6421	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	Susan Fife	SE Campus	713-718-7241	Felix Morales Building, Rm 124
- Secretary	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Marisol Montemayor	SE Campus	713-718-7153	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Jack Hatton	NE Campus	713-718-2434	Northline Building, Room 321

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.