



DEPARTMENT OF MATHEMATICS  
SOUTHWEST COLLEGE

COURSE SYLLABUS – SPRING 2017  
Hybrid Course  
MATH 0312: Intermediate Algebra

CRN 15471 / Tu and Th 10:00 – 12:00 PM / West Loop Center, Room 171

INSTRUCTOR:	Houssam Kalajo
CONTACT INFORMATION:	<a href="mailto:Houssam.kalajo@hccs.edu">Houssam.kalajo@hccs.edu</a> web page <a href="http://learning.hccs.edu/faculty/houssam.kalajo">http://learning.hccs.edu/faculty/houssam.kalajo</a>
MYMATHLAB COURSE ID:	<b>Kalajo41794</b> All homework assignments Due on or before 05/10/2017

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

**Course Description**

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. Emphasis is placed on algebraic techniques, in order to successfully complete Math 1314 College Algebra, Math 1324 Mathematics for Business & Social Sciences, Math 1342 Statistics, or Math 1332 Mathematics for Liberal Arts. **A departmental final examination must be passed with a score of 60% or higher in order to pass the course.**

This hybrid course is a combination of in-class instruction and online learning. Both MyMathLab and CANVAS will be required.

**Prerequisites:** MATH 0409: Pass with “C” or better; or equivalent score on the placement exam.

**Audience:** This course is for students who require state mandated remediation.

**Course Goal:** This is the final course in the developmental mathematics sequence and its purpose is to prepare students for entry level college math.

**Course Student Learning Outcomes (SLO)**

1. Solve algebraic equations and inequalities involving rational expressions, radicals, quadratics, absolute values, or linear expressions.
2. Examine and interpret the linear and quadratic graphs of equations and inequalities.
3. Solve application problems.
4. Use and interpret function notation in both algebraic and graphical contexts.

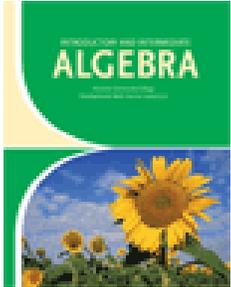
**Learning outcomes**

Students will:

1. add, subtract, multiply and divide polynomials
2. factor polynomials
3. add, subtract, multiply and divide rational expressions
4. simplify complex fractions
5. solve equations involving rational expressions
6. simplify equations involving rational exponents and simplify radicals
7. add, subtract, multiply, divide expressions involving radicals and solve radical equations
8. add, subtract, multiply and divide complex numbers
9. solve quadratic equations by factoring, completing the square, quadratic formula and square root property
10. solve systems of linear equations in two variables
11. solve absolute value equations
12. solve absolute value inequalities

13. graph linear equations & linear inequalities in two variables
14. find the slope of a line & write its equation
15. graph quadratic functions and inequalities
16. solve word problems
17. recognize functional notation & evaluate functions

## Instructional Materials



**Math 0409/0312**

- HCC, Houston Community College
- Textbook ISBN-13: 9781323156827
- Publisher: Pearson Math & Statistics
- This is a custom course for Houston Community College.

Students will either need to purchase their textbook/access code bundle from the bookstore, OR they can purchase online via the MML registration process. MyMathLab ALWAYS comes with an eText.

## Course Outline

### **1 LINEAR EQUATIONS, INEQUALITIES, AND APPLICATIONS**

*Topics to be covered include:* linear equations in one variable and formulas with applications. The unit concludes with absolute value equations and inequalities.

<b>1.1</b>	<b>Linear Equations in One Variable</b> .....	44
<b>1.2</b>	<b>Formulas and Percent</b> .....	54
<b>1.3</b>	<b>Applications of Linear Equations</b> .....	66
<b>1.5</b>	<b>Linear Inequalities in One Variable</b> .....	90
<b>1.7</b>	<b>Absolute Value Equations and Inequalities</b> .....	111

### **2 LINEAR EQUATIONS, GRAPHS, AND FUNCTIONS**

*Topics to be covered include:* graphing lines in the coordinate plane, the slope of a line, equations of a line, linear inequalities and their graphs, relations and functions. The section concludes with variation.

<b>2.1</b>	<b>Linear Equations in Two Variables</b> .....	136
<b>2.2</b>	<b>The Slope of a Line</b> .....	148
<b>2.3</b>	<b>Writing Equations of Lines</b> .....	162
<b>2.4</b>	<b>Linear Inequalities in Two Variables</b> .....	179
<b>2.5</b>	<b>Introduction to Relations and Functions</b> .....	186
<b>2.6</b>	<b>Functional Notation and Linear Functions</b> .....	197

### **3 SYSTEMS OF LINEAR EQUATIONS**

*Topics to be covered include:* solving systems by graphing, elimination, and substitution methods. This unit only considers a two by two systems of linear equation.

<b>3.1</b>	<b>Systems of Linear Equations in Two Variables</b> .....	216
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## 4 EXPONENTS, POLYNOMIALS, & POLYNOMIAL FUNCTIONS

*Topics to be covered include:* integer exponents, scientific notation, polynomial functions. This unit concludes with multiplying, and dividing polynomials. You do not need to cover the polynomial graphs and composition from section 4.3.

4.1	Integer Exponents and Scientific Notation	266
4.3	Polynomial Functions	286
4.4	Multiplying Polynomials	298
4.5	Dividing Polynomials	307

## 5 FACTORING

*Topics to be covered include:* factoring out the GCF, factoring the difference of two squares, factoring the general trinomial, factoring the sum and difference of two cubes, and factoring by grouping.

5.1	Greatest Common Factors; Factoring by Grouping	324
5.2	Factoring Trinomials	330
5.3	Special Factoring	338
5.4	A General Approach to Factoring	344
5.5	Solving Equations by the Zero-Factor Property	349

## 6 RATIONAL EXPRESSIONS AND FUNCTIONS

*Topics to be covered include:* rational expressions and functions; multiplying, dividing, adding and subtracting rational expressions; complex fractions. The unit concludes with equations involving rational expressions and applications of rational expressions. Graphing rational functions is not included.

6.1	Rational Expressions and Functions; Multiplying and Dividing	366
6.2	Adding and Subtracting Rational Expressions	376
6.3	Complex Fractions	385
6.4	Equations with Rational Expressions and Graphs	391
6.5	Applications of Rational Expressions	400

## 7 ROOTS, RADICALS, AND ROOT FUNCTIONS

*Topics to be covered include:* Radical expressions and exponents; simplifying radical expressions; adding, subtracting, multiplying and dividing radical expressions; solving equations involving radical expressions. This unit concludes with complex numbers. Graphing radical functions is not included.

7.1	Radical Expressions and Graphs	434
7.2	Rational Exponents	442
7.3	Simplifying Radicals, the Distance Formula, and Circles	450
7.4	Adding and Subtracting Radical Expressions	463
7.5	Multiplying and Dividing Radical Expressions	468
7.6	Solving Equations with Radicals	479
7.7	Complex Numbers	485

## 8 QUADRATIC EQUATIONS, INEQUALITIES, & FUNCTIONS

*Topics to be covered include:* solving quadratic equations by the square root property, completing the square, and the quadratic formula; vertical parabolas.



## Students with disabilities

Houston Community College is dedicated to providing an inclusive learning environment by removing barriers and opening access for qualified students with documented disabilities in compliance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act. Ability Services is the designated office responsible for approving and coordinating reasonable accommodations and services in order to assist students with disabilities in reaching their full academic potential. In order to receive reasonable accommodations or evacuation assistance in an emergency, the student must be registered with Ability Services.

If you have a documented disability (e.g. learning, hearing, vision, physical, mental health, or a chronic health condition), that may require accommodations, please contact the appropriate Ability Services Office below. Please note that classroom accommodations cannot be provided prior to your Instructor's receipt of an accommodation letter and accommodations are not retroactive. Accommodations can be requested at any time during the semester, however if an accommodation letter is provided to the Instructor after the first day of class, sufficient time (1 week) must be allotted for the Instructor to implement the accommodations.

## 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**

HCC is committed to provide a learning and working environment that is free from discrimination on the basis of sex which includes all forms of sexual misconduct. Title IX of the Education Amendments of 1972 requires that when a complaint is filed, a prompt and thorough investigation is initiated. Complaints may be filed with the HCC Title IX Coordinator available at 713 718-8271 or email at [oi@hccs.edu](mailto:oi@hccs.edu).

Title IX of the Education Amendments of 1972 requires that institutions have policies and procedures that protect students' rights with regard to sex/gender discrimination.

Information regarding these rights are on the HCC website under Students-Anti-Discrimination. Students who are pregnant and require accommodations should contact any of the ADA Counselors for assistance.

It is important that every student understands and conforms to respectful behavior while at HCC. Sexual misconduct is not condoned and will be addressed promptly. Know your rights and how to avoid these difficult situations.

Log in to [www.edurisksolutions.org](http://www.edurisksolutions.org). Sign in using your HCC student email account, then go to the button at the top right that says Login and enter your student number.

### **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 or for excessive tardiness or 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 04/24/2017.**

**ATTENDANCE POLICY:** Attendance is compulsory. Attendance 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. Student can contact his/her friend 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.

### **Use of Camera and/or Recording Devices**

As a student active in the learning community of this course, it is your responsibility to be respectful of the learning atmosphere in your classroom. To show respect of your fellow students and instructor, you will turn off your phone and other electronic devices, and will not use these devices in the classroom unless you receive permission from the instructor.

Use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations

### **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
- 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:
- 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.

### Final Grade Policy in Developmental Mathematics

The following policy was adopted by Houston Community College regarding the system-wide Final Examinations in developmental mathematics courses:

- ❖ Students who score less than 60% on the Final Examination or who have an overall course average less than 70% will be awarded a grade of “IP” or “F.” **The “IP” grade will be awarded to those students who took Math 0312 for the 1<sup>st</sup> time. The “F” grade will be awarded to those students who are repeating Math 0312.**
- ❖ Students who score 60% or higher on the Final Examination and whose overall course average is equal to or greater than 70%, will have their grades averaged and awarded a grade based upon the standard 10 point scale.

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 (MyMathLab) \* 0.20 + Final Exam \* 0.35**

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

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

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

**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.

### 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](http://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
- Secretary	Tiffany Pham	SW Campus	713-718-7770	Stafford, Scarcella, N108
Math Assoc. Chair	Clen Vance	CE Campus	713-718-6448	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
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### 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.

#### Resources:

1. Any student enrolled in Math at HCCS has access to the Learning Support Center (LRC) where they may get additional help in understanding the theory or in improving their skills. The Center is staffed with mathematics faculty and student assistants, and offers tutorial help, video tapes and computer-assisted drills. A student's Solutions manual may be obtained from the bookstore. Check any HCC campuses for the math tutoring schedule.
2. **Ask Online Tutoring:** Students can get **free** assistance, 24 hours a day, 7 days a week, in Mathematics, English and many other subjects, at [www.hccs.askonline.net](http://www.hccs.askonline.net). Typically, posted questions will be answered by an HCC tutor or faculty member within 24 hours.
3. By purchasing a MyMathLab access code, students can also receive free tutoring from the Pearson Tutor Center at <http://digitalvillum.next.college.com/postindexmixed.html?courseId=5734065>. Students can get tutoring either over the phone, fax, email, or interactive web.
4. There are also several online math resources that you can find with an internet search like the following links:

- <http://khanacademy.org>
- <http://sophia.hccs.edu/~douglas.bump/math>
- <http://www.purplemath.com/>
- <http://www.awl.com/tutorcenter/stinfo.html>
- <http://www.harcourtcollege.com/math/nettutor/0030260264/>
- <http://www.mhhe.com/barnett>