Department of Mathematics  
**Northline Campus**  
Math 1314: College Algebra  
CRN 12170–Fall/2016/Second Start  
Online  
Distance Education  
Textbook: College Algebra 2nd ed, by Julie Miller and Donna Gerken  
Connectmath.com course code: TRVFC-FCGFF

Instructor: Khaled El-Loubani  
Instructor Contact Information: Khaled.el-loubani@hccs.edu  713 718 2436  
Office location and hours: Room 321  
**TuTh 12:30-2:00**  
**8:30-9:30**

Connectmath.com course code: TRVFC-FCGFF

**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 or its equivalent or an acceptable placement test score.

**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.

**Objectives**  
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.
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.

Core Objectives

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.

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.

Pre-test: A pre-test may be given during the first class period. This test is to measure the student readiness for the course. The tests should be retained for informational purposes and the grade may not be used to counsel a student into taking another course. Grade on pre-test should be recorded on HCCS Attendance/Grade Sheet. This grade must not be used to calculate the grades of students in the course.

<table>
<thead>
<tr>
<th>APPROXIMATE TIME</th>
<th>TEXT REFERENCE</th>
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<tr>
<td><strong>Unit I - Equations and Inequalities</strong></td>
<td>Sections: 1.4, 1.5, 1.6, 1.7</td>
</tr>
<tr>
<td>(8 hours)</td>
<td>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.</td>
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| 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
(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)

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)

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
Students are expected to keep up with materials covered in class, and not let materials accumulate

Student Assignments

All homework will be administered via ConnectMath.com
Course Code: TRVFC-FCGFF
All exams will be administered via Canvas

During the course you will have to complete three tests and a final exam. All homework, tests, and the final will be administered online. The final exam and test #2, however, will be proctored. You have to take your final exam in order to pass the course. Please see calendar below.
There will be three exams and a comprehensive final exam. Homework will be assigned daily. There will be no make-up exams. A missed test grade will be replaced by the final exam grade. If a student misses two exams, the student will receive a zero for the second missed test. If a student misses the final exam, he or she will receive an F for the course. No exceptions.

Assessments

Calculators are not allowed on any of the tests.

Test #1 15%
Test #2 15%
Test #3 15%
Final Exam 40%
H.W. 15%

CALENDAR

Homework is due Dec. 3rd. It can be completed anytime between Sep. 19th and Dec. 3rd.
Test #1 is due Dec. 3rd. It can be completed anytime between Sep. 19th and Dec. 3rd.
Test #2 is proctored and must be taken at a testing center. @ 3100 Main St. Nov. 17th 10am-9pm, Last admittance 7pm.
Nov. 18th 10am-9pm, Last admittance 7pm.
Nov. 19th 10am-3pm, Last admittance 1pm.

Test #3 is due Dec. 3rd. It can be completed anytime between Sep. 19th and Dec. 3rd.

Final exam will be proctored during the first weekend of Dec..
Dec. 1st 10am-9pm. Last admittance 7pm
Dec. 2nd 10am-9pm. Last admittance 7pm
Dec. 3rd 10am-3am. Last admittance 1pm. At 3100 Main St. Houston

Once you start a test, you are allowed one attempt and two hours to complete it.

HCC Policy Statement - ADA

Services to Students with Disabilities
Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at his or her respective college at the beginning of each semester. Faculty members are authorized to provide only the accommodations requested by the Disability Support Services Office. Persons needing accommodations due to a documented disability should contact the ADA counselor for their college as soon as possible. For questions, please contact Donna Price at 713.718.5165. To visit the ADA Web site, please visit www.hccs.edu then click Future students, scroll down the page and click on the words Disability Information.

555 Community College Drive
Houston, TX 77013
Phone: 713/718-8322
Fax: 713/718-8101

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 oee@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. 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
Any form of cheating will result in an “F” for the course.

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 not yet 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 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. The last day to withdraw 11/07/2016 by 4:30 pm.

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.

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

Grading Scale
90 - 100 = A
80 - 89 = B
70 - 79 = C
60 - 69 = D
00 - 59 = F
Note: The instructor cannot assign a grade of W.

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 not to 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).

Student Course Reinstatement Policy:
Students have a responsibility to arrange payment for their classes when they register, either through cash, credit card, financial aid, or the installment plan. Faculty members have a responsibility to check their class rolls regularly, especially during the early weeks of a term, and reconcile the official class roll to ensure that no one is attending class whose name does not appear on it. Students who are dropped from their courses for nonpayment of tuition and fees who request reinstatement after the official date of record (OE Date) can be reinstated by making payment in full and paying an additional $75 per course reinstatement fee. A student requesting reinstatement should present the registrar with a completed Enrollment Authorization Form with the signature of the instructor, department chair, or dean who should verify that the student has been attending class regularly. Students who are reinstated are responsible for all course policies and procedures, including attendance requirements.

Resources:
Any student enrolled in Math 2412 at HCCS has access to the Academic Support Center where they may get additional help in understanding the theory or improving their skill. The Center is staffed with mathematics faculty and student assistants, and offers
tutorial help. A Chapter Tests preparation video CD comes with the text. A Student’s Solution Manual and MyMathLab are also available.

Free tutoring is available in the learning center on the fourth floor at NOLN. 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 www.hccs.askonline.net. 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.

**EGLS – 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**

<table>
<thead>
<tr>
<th>College - Level Math Courses</th>
<th>Chair of Math</th>
<th>Jaime Hernandez</th>
<th>SW Campus</th>
<th>713-718-2477</th>
<th>Stafford, Scarcella, N108</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Secretary</td>
<td>Tiffany Pham</td>
<td>SW Campus</td>
<td>713-718-7770</td>
<td>Stafford, Scarcella, N108</td>
<td></td>
</tr>
<tr>
<td>Math Assoc. Chair</td>
<td>Clen Vance</td>
<td>CE Campus</td>
<td>713-718-6448</td>
<td>San Jacinto Building, Rm 369</td>
<td></td>
</tr>
<tr>
<td>Math Assoc. Chair</td>
<td>Ernest Lowery</td>
<td>NW Campus</td>
<td>713-718-5512</td>
<td>Katy Campus Building, Rm 112</td>
<td></td>
</tr>
<tr>
<td>Math Assoc. Chair</td>
<td>Mahmoud Basharat</td>
<td>NE Campus</td>
<td>713-718-2438</td>
<td>Codwell Hall Rm 105</td>
<td></td>
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<tr>
<th>Developmental Math Courses</th>
<th>Chair of Dev. Math</th>
<th>Susan Fife</th>
<th>SE Campus</th>
<th>713-718-7241</th>
<th>Felix Morales Building, Rm 124</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Secretary</td>
<td>Carmen Vasquez</td>
<td>SE Campus</td>
<td>713-718-7056</td>
<td>Felix Morales Building, Rm 124</td>
<td></td>
</tr>
<tr>
<td>Dev. Math Assoc. Chair</td>
<td>Marisol Montemayor</td>
<td>SE Campus</td>
<td>713-718-7153</td>
<td>Felix Morales Building, Rm 124</td>
<td></td>
</tr>
<tr>
<td>Dev. Math Assoc. Chair</td>
<td>Jack Hatton</td>
<td>NE Campus</td>
<td>713-718-2434</td>
<td>Northline Building, Room 321</td>
<td></td>
</tr>
</tbody>
</table>

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.