DEPARTMENT OF MATHEMATICS
SOUTHWEST COLLEGE

COURSE SYLLABUS – SUMMER 2016
MATH 1314: College Algebra

CRN 14863 / Mo - Fr 8:00 – 10:00 AM / West Loop Center, Room C257

INSTRUCTOR:	Houssam Kalajo
CONTACT INFORMATION:	Houssam.kalajo@hccs.edu web page http://learning.hccs.edu/faculty/houssam.kalajo
Connect Math Course Code:	**JHQ4Y-4TED3** **All homework assignments Due on or before 07/07/2016**

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

Course Description
Topics include quadratics, polynomial, rational, logarithmic and exponential functions, system of equations, 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):
1. Solve algebraic equations and inequalities involving linear and nonlinear expressions.
2. Examine and interpret the graphs of circles, polynomial functions, rational functions, basic functions, and their transformations.
3. Apply the basic knowledge of a function in order to simplify functions, combine functions, and solve application problems involving linear and nonlinear functions.
4. Perform basic matrix operations.

Learning outcomes
Students will:
1.1 Solve Quadratic Equations in one variable by the method of factoring, square root property, completing the square and the quadratic formula.
1.2 Solve radical equations, fractional equations, and equations of quadratic form.
1.3 Solve linear inequalities and linear equations involving absolute value, state the solution in interval notation, and graph the solution.
1.4 Solve non-linear (quadratic and rational) inequalities, state the solution in interval notation, and graph the solution.
1.5 Solve exponential and logarithmic equations.
1.6 Solve systems of linear and nonlinear in two variables.
2.1 Find the distance and midpoint between two points in the Cartesian Plane.
2.2 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
2.3 Graph linear functions, quadratic functions, piecewise-defined functions, absolute value functions, polynomial functions, rational functions, exponential functions, and logarithmic functions.

2.4 Understand vertical and horizontal shifts, stretching, shrinking, and reflections of graphs of functions.
2.5 Recognize the equation of a circle, sketch the graph of a circle, and find the equation of a circle.
2.6 Determine the rational zeros of a polynomial.
3.1 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
3.2 Understand the inverse relationship between the exponential and logarithmic functions.
4.1 Perform operations with 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.

Instructional Materials

Textbook: College Algebra, 1st ed. by Miller, McGraw-Hill, 2014.
ISBN-13: 9780078035630

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

Unit I - Equations and Inequalities
Sections: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1 **(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.
Section 1.3: Operations with complex numbers (*Optional*).
Section 1.4: This section includes quadratic equations with both real and complex solutions, as complex arithmetic is covered in section 1.3.
Section 1.5: This material is largely optional.
Section 2.1: The Cartesian Plane, Distance Formula, and Midpoint Formula

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.
Section 2.5: The applications of linear equations and linear regression (optional).

Unit III - Polynomial and Rational Functions
Sections 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 **(8 hours)**
This unit includes quadratic functions and models, polynomial functions of higher degree, synthetic division, zeros of polynomial functions, rational functions and asymptotes and graphs of rational functions.

Unit IV - Exponential and Logarithmic Functions
Sections: 4.1, 4.2, 4.3, 4.4, 4.5, (4.*6 Optional*) **(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
Sections: 5.1, 5.4, 6.3, 6.5(exclude Cramer's rule) **(4 hours)**
This unit includes linear and nonlinear systems of equations, two variable linear systems, operations with matrices and the determinant of a square matrix.

Review for Final Examination: Cover all previous sections	3 hours
Comprehensive Final Examination: Covers all previous sections	2 hours

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 to be used for registration purposes only. To register for Connect Math and to access the homework, go to www.connectmath.com.

Note:

- No extra work is given for extra credit.
- No extra work is given to "bring up my grade".
- Be sure that your name in Connect Math exactly matches your name on Class Roster.

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 reason. If a second test is missed, the score for that test is zero; thus, more weight will be given to the final examination than would be the case if all examinations were taken on time.

Final Examination:
The final exam is comprehensive, and questions on it can deal with any of the course objectives. The final examination must be taken by all students.

HCC Policy Statement - ADA
Services to Students with Disabilities
Students who require reasonable accommodations for disabilities are encouraged to report to Dr. Becky Hauri at 713-718-7910 to make necessary arrangements. Faculty is only authorized to provide accommodations by the Disability Support Service Office

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 oie@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.eduriskssolutions.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.***

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.

Your course grade will be computed as follows:

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

One lowest major exam out of 4 will be dropped.

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 Average	90 ≤ Avg ≤ 100	80 ≤ Avg < 90	70 ≤ Avg < 80	60 ≤ Avg < 70	Avg < 60
Final Course Grade	A	B	C	D	F

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. Logging into a DE course without active participation is seen as non-attending.

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 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	Roderick McBane	CE Campus	713-718-6644	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.

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. Typically, posted questions will be answered by an HCC tutor or faculty member within 24 hours.

3. 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

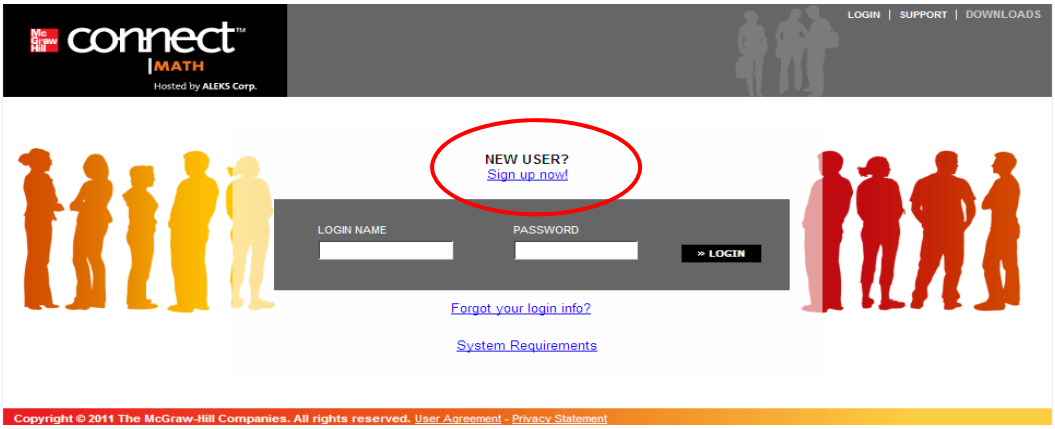
Connect Math Student Registration Instructions

Before you begin, you will need:

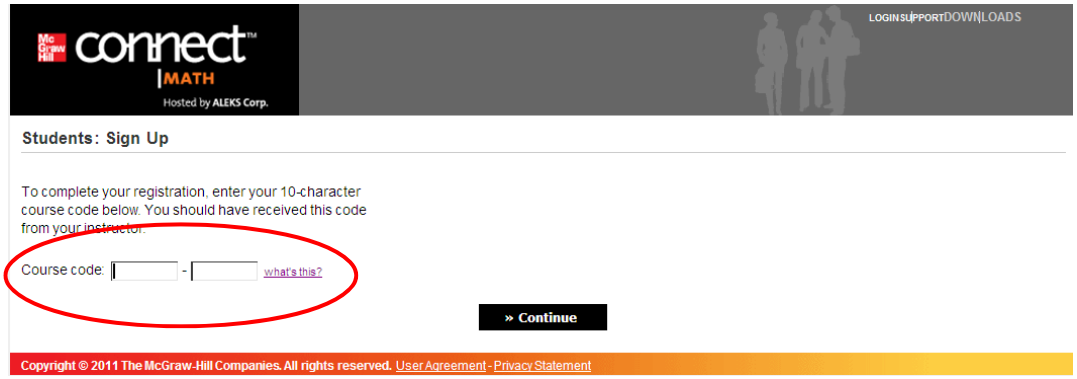
- **Your HCC e-mail address**
- **A 20-character Connect Math Access Code (packaged with your text or purchased online)**
- **A 10-digit Course Code supplied by your Instructor: (Insert 10 digit code)**

Step 1: Go to the **Connect Math** website by typing in the following address: **http://www.connectmath.com** on your web browser.

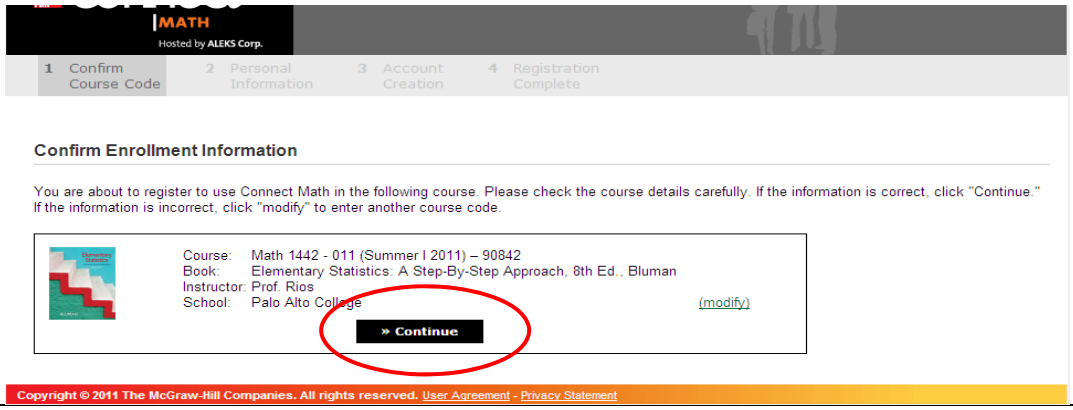
Step 2: Click on "SIGN UP NOW!"



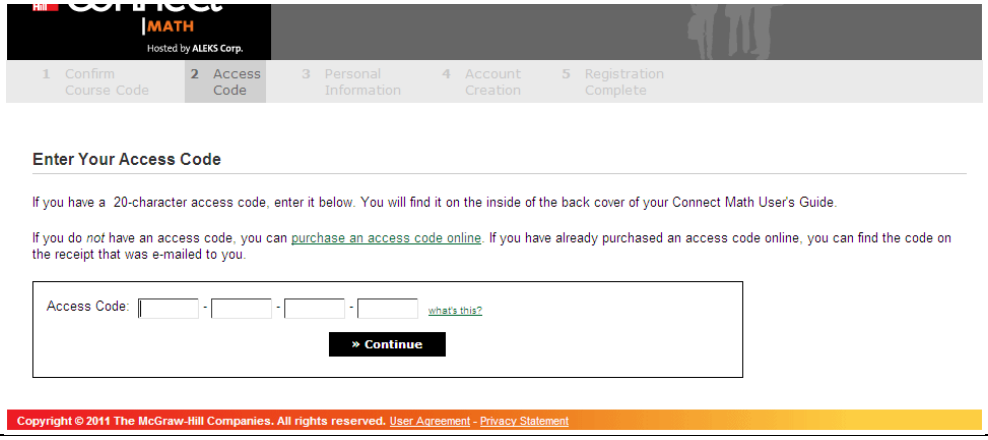
Step 3: Enter your 10-digit "Course Code" AND click "Continue." **(Insert 10 digit code)**



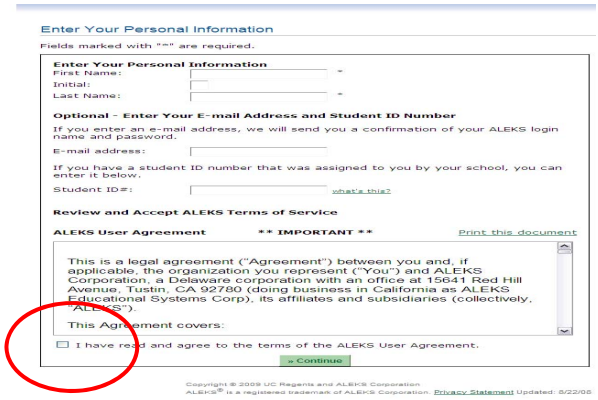
Step 4: Confirm Course Information and Click "Continue



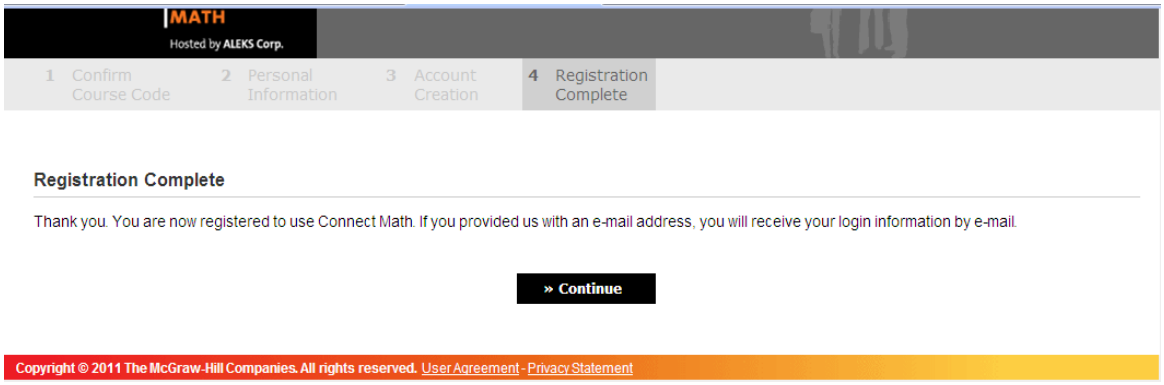
Step 5: Enter your 20-digit Access Code – Located inside your new textbook or purchase online by clicking on the link "purchase an access code online."



Step 6: Enter your name and school e-mail address. Then choose a Password, click in the checkbox, and click "Continue."



Step 7: Registration Complete. **Write Down Your Login and Password,** click "Continue."



To Access Connect Math again, Go to http://www.connectmath.com and enter your Connect login name and password and click on "LOGIN."

My Login Name: _____

My Password: _____

To check the system requirements for Connect Math, go to the following site:
http://www.connectmath.com/support/system_requirements
If you need technical support, please contact Connect Math Customer Support:
E-mail: http://support.connectmath.com Phone: (949) 390-2095
Hours: Monday - Friday, 7:00 AM to 10:00 PM