Mathematics

HCC Northwest College – Katy Campus

MATH 1314: College Algebra

CRN 47158 – Spring 2015 (Regular Term)

Online Instruction | In Person Final Exam

3 hour lecture course / 48 hours per term/ 16 weeks

Textbook: College Algebra, 1st Edition by Julie Miller

ISBN-13: 978-0078035630

Instructor: Kimber Kaushik

Contact Information: kimber.kaushik@hccs.edu, 713-718-5733

Office Location: Rm. 359 H at Northwest College's Katy Campus

Office Hours:

Monday and Wednesday: 1 – 2 pm and 3:30 – 4 pm

Tuesday: 2 – 4 pm

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 Objectives: Students will

1.1 Solve quadratic equations in one variable by the method of factoring, extracting square roots, completing the square and the quadratic formula.
1.2 Solve radical equations, rational 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 equations 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, and graph functions by plotting points.
3.2 Understand the inverse relationship between the exponential and logarithmic functions.
4.1 Perform operations with matrices.

DE Student Services: The Distance Education Student Handbook contains policies and procedures unique to the DE student. Students should have reviewed the handbook as part of the mandatory orientation. It is the student's responsibility to be familiar with the handbook's contents. The handbook contains valuable information, answers, and resources, such as DE contacts, policies and procedures (how to drop, attendance requirements, etc.), student services (ADA, financial aid, degree planning, etc.), course information, testing procedures, technical support, and academic calendars.

Refer to the DE Student Handbook by visiting this link: DE Student Handbook.

ALEKS: All assignments EXCEPT THE FINAL EXAM are accessed via the online program ALEKS (available at www.aleks.com). I'll give you details about registering for ALEKS on the first day of class. **This is a pilot class, so ALEKS and the accompanying electronic textbook are free to you.**

Your goal this semester will be to master the math topics in your ALEKS Pie. There are no graded tests in ALEKS, but you will take periodic, ungraded assessments which determine your progress in your pie.

There will be a final exam review and a practice final exam in ALEKS. The final exam review is worth up to five bonus points on your final exam. The practice final exam will not affect your course grade and is optional.

Textbook: An electronic version of the textbook, *College Algebra* (1st Edition by Miller), comes with your free ALEKS subscription.

Calculator Use: Please avoid using a calculator for straight-forward calculations. You will not be able to use a calculator during the final exam.

Final Exam: The paper-and-pencil final exam must be taken in person at one of the three testing centers in Houston, between Friday, May 8 and Sunday, May 10, 2015. The exam has 33 multiple-choice questions, lasts two hours, and covers all material from class (Chapters 1 – 7 & 9). The exam is CLOSED BOOK, AND NO NOTES OR CALCULATORS ARE ALLOWED.

All answers must be marked on the provided scantron form. To receive partial credit, *show your work neatly on the provided scratch paper, and number each question.*

If you live outside the Houston area, you'll need to arrange for proctored testing near you as soon as possible; for more information, see the DE Student Handbook.

MATERIALS NEEDED*:*

Sharpened #2 pencils

Eraser (Hi-Polymer erasers by Pentel are recommended)

Picture ID

Course information: MATH 1314, CRN 47158, Prof. Kimber Kaushik

When you arrive at a testing center, you must show your ID and provide the course information listed above. You'll be given a test booklet and a scantron form. Be sure to request scratch paper as well.

Math Forum Participation: During the semester, you are required to make five contributions to the math forums in Eagle Online. These forums establish a classroom community by giving you the opportunity to get to know and help one another. Your participation in the forum also strengthens your ability to communicate in math and helps you understand topics more deeply.

STUDY TIPS:

Mastering the Material: I suggest that you record your work in a math notebook. Be neat and highlight tricky problems. Writing your work in an organized manner helps you think clearly and gives you a record of your thought. You can then review the material as you study for the final exam. To receive partial credit on the final exam, you must show your work neatly; therefore, keeping a math notebook gives you good practice.

As the course progresses, I also suggest that you make study cards with important formulas, definitions and problem-solving techniques. You might find it helpful to refer to the Summary at the end of each chapter when making your cards. Eventually, you'll need to memorize the information on all your study cards since you won't be able to use any cards or notes of any kind during the final exam.

Finally, free in-person tutoring is available at many HCC campuses. Another option is to use HCC's free Online Tutoring Services, available at www.hccs.askonline.net. Use your student ID or HCC e-mail address to create an account. Instructions, including a 5-minute video, are provided to make you familiar with the capabilities of this service. Of course, you are also welcome to visit or call me during my office hours!

Final Exam Preparation: First, reread the Summary at the end of each chapter covered in class, and study the cards you've made for each chapter.

Next, work through the final exam review available in ALEKS. I encourage you to discuss the Final Exam Review problems in the "Let's Help One Another" forum in Eagle Online or work on the review with classmates in one of the HCC tutoring labs or libraries.

Once you understand the final exam review, take the practice final exam in ALEKS at least one time. Don't use a calculator or any notes, and try to finish the practice exam in under two hours.

Finally, be sure to get a good night's sleep the night before the final exam. Review your study cards the night before and the morning of the final exam, and eat a meal with protein before exam time.

Evaluation: You can find your course average and individual assignment grades by clicking the "Gradebook" link in ALEKS. Your course average will be calculated as follows:

65%: ALEKS Pie

5%: Math Forum Participation

30%: Departmental Final Exam

Your course grade is based on your course average as follows:

A: 90 – 100%, B: 80 – 89%, C: 70 – 79%, D: 60 – 69%, F: less than 60%

HCC POLICY STATEMENTS:

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 Ability 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 Ability 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 Ability Information.

Northwest College Ability Support Service Office

Katy Campus
1550 Foxlake Drive, Room 111
Houston, TX 77084
Phone: 713/718-5408
Fax: 713/718-7990

Spring Branch Campus
1010 W. Sam Houston Pkwy North
Houston, TX 77043
Phone: 713/718-5422
Fax: 713/718-5430

Academic Honesty

Note: As with all developmental mathematics courses at HCC, **the use of a calculator during an exam is prohibited** and will be considered cheating.

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)

Dropping/Course Withdrawal: If you wish to drop the course without a grade, you must do so by *Monday, February 2, 2015*. If you do not log in to this course's Eagle Online shell or register for ALEKS by February 2, you will automatically be dropped from the course. After February 2, you can withdraw yourself until *Tuesday, April 7, 2015 at 4:30 pm*. I may also administratively withdraw you if you are inactive in the course after February 2, but I will first attempt to contact you.

Please read the section "Policies and Procedures" in the DE Student Handbook for more details.

EGLS 3 -- 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 near the end of the semester, 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 department chairs for continual improvement of instruction. Go to www.hccs.edu/egls3 for more information.