



JOHNSON COUNTY COMMUNITY COLLEGE

Math Department

College Algebra

MATH 171-462

Fall 2009 Course Syllabus

INSTRUCTOR INFORMATION:

Name: Mr. Scott Keltner

Telephone: (913) 469-8500, ext. 3151 (JCCC voicemail)

(785) 865-8550 (cell)

(785) 542-3584 (home) NO CALLS AFTER 8:00 p.m. PLEASE!

E-mail: skeltne1@jccc.edu or scottkeltner@eudoraschools.org

Course Webpage: <http://www.eudoraschools.org/keltner> (will be updated as the course progresses)

Classroom: AQH 164

Meeting Dates and Time: Mondays & Wednesdays, 6:00 p.m. to 7:45 p.m.; September 21st through December 16th, 2009

COURSE INFORMATION:

Credit: 3 hours

Prerequisites: Grade of C or higher in MATH 116 (Intermediate Algebra) or

Appropriate score on the math assessment test (COMPASS test)

COURSE DESCRIPTION:

This course focuses on the study of functions and their graphs, techniques of solving equations and the recognition and creation of patterns. Students will analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic functions and non-functions; solve equations and inequalities, including polynomial equations, exponential equations, logarithmic equations, systems of linear equations and systems of linear inequalities; and analyze and create algebraic and numerical patterns. 3 or 5 hrs./wk. Not available for credit for students with credit in MATH 173 (Precalculus). NOTE: The prerequisites of MATH 116 (Intermediate Algebra) or MATH 134 (Technical Mathematics II) require a grade of "C" or higher.

TEXTBOOK:

College Algebra, 5th Edition (2009) by James Stewart, Lothar Redlin, and Saleem Watson. ISBN-10: 0-495-56521-0; ISBN-13: 978-0-495-56521-0. Information and additional resources available at bookstore.jccc.edu.

ADDITIONAL SUPPLIES AND RESOURCES:

An optional purchase for this course was the Student Solutions Manual to accompany the textbook. This resource is just that—optional. Please be aware before purchasing that the Student Solutions Manual does not provide all solutions to textbook exercises, but it may help you in seeing examples that we may not have time to cover during class time.

While one is not required for class, it is ***strongly recommended*** that students in this class have access to a graphing calculator. Recommended models include the Texas Instruments TI-83 or TI-84 series' of calculators, but can include others. It is also recommended that students ***not*** use or have access to either the TI-89 or TI-92 series' of calculators. Additional (out-of-pocket) expense considerations that students should expect in addition to course tuition, fees, and textbooks will range from \$10 to \$120.

The Math Resource Center is another resource available to students who would like either a place to study with others, by themselves, or just have questions they would like help with outside of class time. The Math Resource Center is located in room CLB 212. Any students wishing to take advantage of this resource should present their student ID before entering, which can be obtained from Billington Library or the Student Information Center in the Student Center if you do not already have one. One particular resource the MRC has available is access to graphing calculators. If you do not want to buy a graphing calculator, you may rent either a TI-83 or TI-84 for \$25 per semester. These calculators are also available for student use in the MRC for free but cannot be checked out unless you pay the rental fee. The MRC tutors circulate around the room, offering assistance to students as they become available to do so. Students may use a copy of a solutions manual while in the MRC, but must submit a JCCC ID card or car keys as some form of collateral.

As an incentive to become familiar with the Math Resource Center, you have the opportunity to earn ***10 bonus points*** for completing the Self-Tour of the Math Resource Center and turning in your answer sheet prior to the

first unit exam. This is a one-time offer and will not be extended again, as it is to your benefit to become familiar with the resources you have access to as a JCCC student.

CAVEATS:

1. The majority of mathematics courses are sequential. Students must earn a grade of C or higher in a prerequisite mathematics course to progress to its subsequent mathematics course.
2. If a student is found not to have successfully fulfilled the prerequisite(s) for this course, the student will be dropped from the course. He/she will be allowed to enroll in the appropriate level math course provided space is available for them.
3. If you have previously taken MATH 173 (Pre-Calculus), College Algebra will override that course on your transcript. The grade you receive in College Algebra will replace your previous grade and credits. You will receive only 3 hours of credit towards graduation.
4. In accordance with your tuition billing statement, during the first two weeks of the semester, if a student is found not to have successfully completed the prerequisite course(s) for this course, he/she will be dropped from this course and allowed to enroll in the appropriate level math course on a space-available basis with an even exchange of tuition. After the first two weeks, if this situation arises, the student will be dropped from the course with no refund of tuition.

COURSE OBJECTIVES:

Upon successful completion of this course the student should be able to:

1. Analyze functions and their graphs.
2. Sketch the graphs of functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic.
3. Solve polynomial, exponential and logarithmic equations.
4. Solve systems of linear equations and systems of linear inequalities.
5. Create mathematical models to solve application problems.
6. Analyze numeric and algebraic patterns; generate numeric and algebraic patterns.

CONTENT OUTLINE AND COMPETENCIES:

- I. Analysis and graphing of functions and non-functions
 - a. Use function notation.
 - b. Recognize equations of functions and non-functions.
 - c. Use concepts of symmetry, intercepts, left to right behavior, asymptotes, and transformations to sketch graphs of functions (constant, linear, quadratic, absolute value, square root, cubic, polynomial, rational, exponential, and logarithmic) and non-functions (circles).
 - d. Determine the domain and range of a function.
 - e. Write the equation of a function (constant, linear, quadratic, absolute value, square root, cubic, polynomial, rational, exponential, and logarithmic) or non-function (circle) given its description.
 - f. Use graphing calculator or computer-generated graphs of functions for analysis.
 - g. Find combinations and composites of functions.
 - h. Find inverses of functions.
- II. Solutions of equations and inequalities
 - a. Solve polynomial equations.
 - b. Solve exponential equations.
 - c. Solve logarithmic equations.
 - d. Apply exponential and logarithmic equations to problems, e.g., growth and decay.
 - e. Solve systems of linear equations using substitution, elimination, graphing, and at least one matrix method (Gaussian elimination, Gauss-Jordan elimination, inverse matrices, or Cramer’s Rule).
 - f. Graph systems of linear inequalities.
- III. Analysis and creation of algebraic and numerical patterns
 - a. Generate sequences and sums.
 - b. Determine formulas that create sequences and sums.
 - c. Recognize arithmetic and geometric sequences.
 - d. Find specified terms of sequences.
 - e. Calculate sums of sequences.
 - f. Perform binomial expansions using the binomial theorem.

COURSE REQUIREMENTS/TENTATIVE COURSE SCHEDULE:

Students will be given at least 4 unit exams, one comprehensive final exam, and daily assignments.

Monday	Tuesday	Wednesday	Thursday	Friday
Sept. 21 st	Sept. 22 nd	Sept. 23 rd	Sept. 24 th	Sept. 25 th

Syllabus, 2.1, 2.2		2.4 (2.5)		Drop Deadline with 100% Refund
Sept. 28 th 3.1, 3.2	Sept. 29 th	Sept. 30 th 3.5, 3.6	Oct. 1 st	Oct. 2 nd
Oct. 5 th Review, Exam 1	Oct. 6 th	Oct. 7 th 4.1, 4.2, 4.3	Oct. 8 th	Oct. 9 th Drop Deadline with NO refund and no “W” on transcript
Oct. 12 th 4.4, 4.5, 4.6	Oct. 13 th	Oct. 14 th Review, Exam 2	Oct. 15 th	Oct. 16 th
Oct. 19 th 5.1, 5.2, (5.3)	Oct. 20 th	Oct. 21 st (5.3), 5.4	Oct. 22 nd	Oct. 23 rd
Oct. 26 th 5.5, Review	Oct. 27 th	Oct. 28 th Exam 3	Oct. 29 th	Oct. 30 th
Nov. 2 nd 6.1, 6.2	Nov. 3 rd	Nov. 4 th (6.2), 6.3	Nov. 5 th	Nov. 6 th
Nov. 9 th 6.5	Nov. 10 th	Nov. 11 th 7.1	Nov. 12 th	Nov. 13 th
Nov. 16 th (7.1), Review	Nov. 17 th	Nov. 18 th Exam 4	Nov. 19 th	Nov. 20 th Drop Deadline WITH “W” on transcript or request Pass/Fail grade
Nov. 23 rd 9.1	Nov. 24 th	Nov. 25 th No Class	Nov. 26 th	Nov. 27 th
Nov. 30 th 9.2	Dec. 1 st	Dec. 2 nd 9.3	Dec. 3 rd	Dec. 4 th
Dec. 7 th 9.6, (Review)	Dec. 8 th	Dec. 9 th (Exam 5?), Final Review	Dec. 10 th	Dec. 11 th
Dec. 14 th Final Review	Dec. 15 th	Dec. 16 th Final Exam	Dec. 17 th	Dec. 18 th

EVALUATION AND GRADING SCALE:

Course Grade will be broken down into three subcategories: Exams, Daily Work, and Final Exam. They will be weighted as follows and use the grading scale indicated:

Exams	60%	A	90-100%
Daily Work	20%	B	80-89%
Final Exam	+ 20%	C	70-79%
	100%	D	60-69%
		F	59 and below

Daily work will be scored on selected items, not simply on completion. Typically, about five exercise problems will be selected at random from the assigned problems and scored for their accuracy. This, typically, will comprise 5 points of the total score for that assignment. The other 5 points will be based on the completion of the assignment in its entirety. Scores will be recorded out of 10 points, where the student's raw score will be rounded up to the next highest score. For instance, if a student scores the equivalent of 8.3 out of 10 on an assignment, the student's score will be recorded as a 9.

Late work is accepted, but highly discouraged due to the pace of the coursework, especially given that this is only an eight-week course. Please feel free to contact your instructor via email or by phone if you need additional clarification on a topic. Students should not feel as if the instructor is unavailable or impossible to find. If necessary, appointments can be made to work with the student's extra-curricular schedule. If contacting by phone, please keep in mind that 8:00 p.m. is bedtime for my two children, two year-old Hanna and four year-old Abby.

INFORMATION ON STUDENT ACCESS AND ACADEMIC DISHONESTY:

All JCCC students are expected to comply with the Student Code of Conduct as found in the on-line Course Catalog at http://www.jccc.net/home/depts/5101/site/stu_conduct. The Science, Health Care and Math Division Policies as well as the Math Department Policies will also be followed. It is your responsibility as a student to make sure you are familiar with the topics listed in the code. A grade penalty of zero will be assessed for incidences of academic dishonesty. Further actions may be taken based on the severity of the incident.

JCCC provides a range of services to allow persons with disabilities to participate in educational programs and activities. If you desire support services, contact the Student Access Center in GEB 138 or call (913) 469-8500 ext. 3521.