



## JOHNSON COUNTY COMMUNITY COLLEGE

Mathematics Division  
Course Syllabus –Quick Step Plus  
Eudora High School  
College Algebra  
MATH 171  
CRN: 85610  
2009-2010



### INSTRUCTOR INFORMATION:

Name: Mr. Scott Keltner  
Telephone: (785) 542-4980, ext. 1662  
E-mail: [scottkeltner@eudoraschools.org](mailto:scottkeltner@eudoraschools.org) or [skeltne1@jccc.edu](mailto:skeltne1@jccc.edu)  
Class webpage: [www.eudoraschools.org/keltner](http://www.eudoraschools.org/keltner)  
Classroom: Eudora High School, room D-116  
Meeting Time: Monday through Friday, 5<sup>th</sup> hour, 12:25 to 1:16 p.m.  
Planning Period: 2<sup>nd</sup> hour, 9:10 to 10:01 a.m.

### COURSE INFORMATION:

Credit: 3 hours  
Course Type: Transfer  
Prerequisites: Senior status according to accumulated credits as well as Algebra 2 and Precalculus at Eudora High School or equivalent transfer course credit  
Appropriate score on the math assessment test (COMPASS test)  
Math subcategory score of 26 on ACT college entrance exam

### TEXTBOOK:

*College Algebra, 7<sup>th</sup> Edition* (2007) by Ron Larson and Robert P. Hostetler. ISBN: 978-0-618-64310-3.  
Information available online at [bookstore.jccc.edu](http://bookstore.jccc.edu).  
Make sure to search for MATH 171, QS-Eudora. The instructor should be listed as “Deas” since Mary Deas is the Quick Step Plus coordinator who will be overseeing our exams and grading.

### SUPPLIES:

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.

### 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. Student IEPs may call for a student to be enrolled in a level at or above this course. School administration and special education staff will be consulted in such instances for suggested enrollment and placement in course(s).
4. For part of the Quick Step Plus course requirements, students may encounter questions about enrollment or obtaining JCCC course transcripts. The Quick Step Plus website is located at <http://www.jccc.net/home/depts.php/001255/site/courseformats/coursesqsp> (also available at <http://www.tinyurl.com/ehscollegealgebra>) and includes information about enrollment, qualifications, and outcomes that you may find helpful.

### **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. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### **COURSE OBJECTIVES:**

Upon successful completion of this course, the student will:

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:**

**Five unit exams and a comprehensive final exam are required.** All 5 unit exams and the final exam are administered in the high school classroom that meets the requirement of 10 students per section or a total overall average of 10 students per section. The final exam date at the high school officially ends the JCCC College Algebra course unless a student has received written permission from their JCCC professor for another final exam date.

**Show your work on your unit and final exams.** Incorrect answers cannot receive partial credit without your accompanying work. Some questions may request a specific process, and no partial credit will be awarded without that particular process.

**Unit and final exams will be taken in your high school classroom.** You will have the opportunity to view your graded unit exam in the classroom. Your graded exam will be kept on file at JCCC. If you miss the unit exam, the makeup unit exam will be available in the JCCC Testing Center (SC 334), the following day, except for holidays and weekends. A photo ID and JCCC ID# will be required for testing at the JCCC Testing Center (SC 334). **A missed final exam should be taken within 1 week after the high school final exam was administered.**

**The unit exams may be retaken, but not the final exam.** Each unit exam has the possibility of two retakes. All retakes are taken in the JCCC Testing Center (SC 334), and a photo ID and JCCC ID# are required. You must contact your JCCC professor at least 48 hrs in advance any time you want to retake an exam, and you are **strongly encouraged to retake an exam whenever your score is below 70%.** **Exam retakes should be taken before the next scheduled unit exam is administered at the high school.** Failure to retake an exam during that time period forfeits the retake option. When an exam is taken more than once, the highest score for that exam is recorded. **The final exam may be taken only once.**

**EVALUATION AND GRADING SCALE:**

***EHS GRADING PROTOCOL:***

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

Exams	50%	A	90-100%
Daily Work	30%	B	80-89%
Projects/Activities	<u>+ 20%</u>	C	70-79%
	100%	D	60-69%
		F	59 and below

Daily work will be scored on accuracy, not simply on completion. 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. One or two instances of late work are understandable, but beyond three instances, exceptions will not be made and could result in the issuing of detentions to the student.

The instructor is available both before and after school if additional help becomes a necessity. 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.

***JCCC GRADING PROTOCOL:***

Your course grade will be determined by your exam scores, as follows:

TYPE OF WORK	Number	Points each	Total points
Unit Exams	5	100	500
Final Exam	1	100	100
<b>TOTAL</b>			<b>600</b>

**Grading scale**

Grade	Total points	Percentage
A	537-600	89.5% - 100%
B	477-536	79.5% - 89.4%
C	417-476	69.5% - 79.4%
D	357-416	59.5% - 69.4%
F	0-356	0% - 59.4%

**NOTE: Your JCCC grade and EHS grades may not necessarily be the same, depending on your exam scores.**

**INFORMATION ON STUDENT ACCESS AND ACADEMIC DISHONESTY:**

Eudora High School provides a range of services to allow persons with disabilities to participate in educational programs and activities. If you are in need of support services, contact the school office at (785)542-4980. Student Code of Conduct and Academic Dishonesty Policies are addressed in the school handbook. It is your responsibility as a student to make sure you are familiar with these policies and consequences that arise as a result of violating policies.

### **ADDITIONAL SERVICES AND ASSISTANCE:**

- Your JCCC professor can help you by email, telephone or in person by appointment. An appointment is necessary to view your previously taken exams.
- The Math Resource Center, or MRC (CLB 212), is available for extra assistance, including free tutoring, group help sessions, videotapes, solutions manuals, and computer software.
- Electronic assistance available for this course includes:
  - The publisher's web site for the Larson textbook, at [http://college.hmco.com/mathematics/larson/college\\_algebra/6e/students](http://college.hmco.com/mathematics/larson/college_algebra/6e/students). It includes practice quizzes for each section of the book, graphing calculator programs, and other study aids.
- Other assistance available includes:
  - Access Services (SC 292), who provide a range of services to allow persons with disabilities to participate in educational programs and activities. If you desire support services, call 913-469-8500, extension 3521, or TDD 913-469-3885.