JCC OFFICIAL COURSE OUTLINE

Document 3

Course number, title and credits; total time allocation

Course Letter/Number	MAT 033	Credits	4	Title	Beginning Algebra for Statistics

Lecture/Discussion	4	hrs/semester	Lab		hrs/semester	Clinical		hrs/semester

Catalog Description and Pre- and Co-requisites (Same as taxonomy and catalog)

As an alternative pathway toward college-level mathematics, this course introduces fundamental algebra concepts within an underlying framework of statistics and mathematical modeling based on real-world data. Major concepts and themes include: problem solving and experimental design; unit analysis and error in measurement; dimensional analysis and scientific notation; representing data and coordinate graphing; introduction to basic descriptive statistics and probability theorems; basic geometric principles (area, volume, perimeter); arithmetic operations on numbers, ratios, summations, and percents; solution and manipulation of formulas; modeling relationships (linear and exponential regression); solving equations and inequalities; and function arithmetic and graphing. Appropriate technology includes a graphing calculator. *Prerequisite: MAT 020, with 2.0 minimum, within 2 years.*

Knowledge, Skills and Abilities Students Acquire from this Course (Educational Objectives)

1. Create, interpret, and apply graphical displays of data (histograms, bar charts, circle graphs, dot plots, and stem and leaf displays).
2. Compute, interpret, and apply descriptive numerical measures (mean, mode, median, range, variance, and standard deviation).
3. Use algebraic processes to manipulate formulas, simplify basic algebraic expressions and solve linear equations and inequalities.
4. Demonstrate understanding of functions, independent and dependent variables, number theory, sets, and mathematical notation.
5. Demonstrate understanding of concepts of equations by finding and interpreting appropriate graphs, *x*- and *y*-intercepts, and specific function characteristics.
6. Generate and interpret regression models to fit data.
7. Make, interpret, and compute with measurements in scientific notation.
8. Use appropriate technology (such as a graphing calculator) to enhance the understanding of previous objectives.
9. Demonstrate knowledge and awareness of statistics in scientific argumentation and current events.

Associate Degree Outcomes Addressed in this Course (These must appear in course syllabus.)

- *ADO 3: Demonstrate computational skills and mathematical reasoning*
- *ADO 7: Critical Thinking and Problem Solving*

Units/topics of Instruction

See course description and educational objectives.

Instructional Techniques and Procedures

Although techniques vary from instructor to instructor, this course usually consists of mostly lecture and group work. There may also be some large group projects and classroom experiments to illustrate concepts.

Instructional Use of Computer or Other Technology

A graphing calculator is used extensively in this course. Also, the instructor may choose to incorporate the use of MS Excel or other statistical software packages in solving various application problems and projects. The instructor may choose to incorporate the use of MyMathLab in homework, quiz and test assignments.

Instructional Materials and Costs to Students

The instructional material for this course consists of the textbook, instructor-produced course pack, and a graphing calculator. Due to the nature of the course, manipulatives will also be occasionally needed.

Skills and abilities students should bring to the course

		a limited amount of material			basic, pre-algebraic problems
Able to read	x	an average amount of material	Able to compute	X	simple algebraic problems
		an above average amount of material			higher order mathematical problems
		relatively easy material		X	short compositions
Able to read	x	moderately difficult material	Able to write		medium length compositions
		technical or sophisticated material			lengthy compositions
Able to use	x	keyboard skills/familiar with computer			
technology	x	computer application	Other necessary		
	x	web navigation	abilities		

The course is usually scheduled

Day:	X	Fall	X	Winter	X	Spring
Evening:	X	Fall	X	Winter		Spring

Prepared by _____ Date _____

Approved by Dept. _____ Date _____

Approved by Dean _____ Date _____

Approved by Curr. Comm. _____ Date _____

(Last names, please)

Form Revised 12/4/00