

**COLLEGE ALGEBRA  
MAT 151 COURSE SYLLABUS  
PARADISE VALLEY COMMUNITY COLLEGE  
SUMMER I 2009**

INSTRUCTOR: Stephen J. Nicoloff  
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TEXT:

*College Algebra with Modeling and Visualization* 3rd Edition Gary Rockswold  
(Course ID: nicoloff93966)

MATERIALS & OTHER RESOURCES:

Texas Instruments TI-83, or TI-84 or suitable Graphing Calculator.

Learning Support Center (LSC) Building E, Room 180  
Monday - Thursday 8:00 AM – 7:00 PM  
Drop-in and individual Tutoring

MAT 108. This course provides structured tutorial assistance and math study skills to help students achieve success in a mathematics course in which they are concurrently enrolled. Mathematics study skills are emphasized. This course may be repeated for a maximum of 10 credits.

Co-requisites: Concurrent enrollment in MAT151.

DVDs of each lesson are available for checkout in the library or for on campus viewing in the LSC and for your own copy in the Media Center in the library.

CLASS LOCATION:

Building K, Room 111

CLASS TIMES:

7:00 AM - 9:40 AM

SECTION NUMBER:

17665

COURSE DESCRIPTION:

Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, modeling and solving real world problems. Additional topics may include matrices, combinatorics, sequences and series, and conics. Prerequisites: Grade of "C" or better in MAT120, or MAT121, or MAT122, or equivalent, or satisfactory score on District placement exam.

COURSE COMPETENCIES:

Upon Successful completion of this course, you will have mastered the following basic competencies:

- Analyze and interpret the behavior of functions, including end behavior, increasing and decreasing, extrema, asymptotic behavior, and symmetry.
- Solve polynomial, rational, exponential, and logarithmic equations analytically and graphically.
- Find real and complex zeros of polynomial functions analytically and graphically.
- Graph polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions.
- Determine domain and range of polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions.
- Use transformations to graph functions.
- Perform operations, including compositions, on functions and state the domain of the resulting function.
- Determine whether a relation is a function when represented numerically, analytically, or graphically.
- Determine whether a function is one-to-one when represented numerically, analytically, or graphically.
- Determine the inverse of a relation when represented numerically, analytically, or graphically.
- Classify functions by name when represented numerically, analytically, or graphically.

- Determine regression models from data using appropriate technology and interpret results.
- Read and interpret quantitative information when presented numerically, analytically, or graphically.
- Justify and interpret solutions to application problems.
- Compare alternative solution strategies.
- Calculate and interpret average rate of change.
- Model and solve real world problems.
- Solve systems of three linear equations in three variables.
- Solve systems of linear inequalities.
- Communicate process and results in written and verbal formats.

### **PVCC MATHEMATICS/COMPUTER SCIENCE DIVISION EXPECTED STUDENT BEHAVIOR FOR SUCCESS**

- As a college student you need to discipline yourself as to your study habits and classroom behavior. Get to class at least a couple of minutes early. You are expected to at least be on time for each class and remain seated for the entire class. If you must leave early, it is considered only common courtesy to leave quietly and to have informed your instructor beforehand. Please leave beepers and cell phones off. Inattentiveness, disruptiveness or extensive tardies/absences may affect a student's grade.
- If for some reason you decide to drop this course, you are advised to discuss it first with your instructor. If you are having difficulties, please see your instructor before giving up or dropping the class. You will be dropped for non-attendance or excessive absences. Excessive absences will be considered, missing the equivalent of 2 weeks without instructor knowledge or prior approval. A grade of W will be assigned if you are dropped before 6/22/2009. If you drop after that date your drop grade will reflect your status at that time, you will get a W if you are passing and a Y if you are failing.
- Undergraduate study is time consuming. You can anticipate spending two or more hours of study, reading and research for every hour you spend in the classroom. To earn three hours of academic credit, classes must meet for a minimum of forty-five (45) classroom hours. Take these demands seriously as you plan your academic schedule.
- Have your homework completed before class starts. Please feel free to contact me whenever you run into difficulty, and make use of the LSC.
- Have questions ready from the previous night's homework and be seated when class begins.
- Continuously self test.
- Make it a goal to attend all classes and stay the entire class period. There is a high correlation between regular class attendance, punctuality, and good grades. Even though you are absent for any reason, you are still responsible for all homework and material covered in class. Get notes from another student for classes missed.
- Ask questions – participate, don't wait for someone else to ask questions.
- Be prepared as if you expect a quiz every day.
- It is the student's responsibility to understand and follow all of the policies found in the College Catalog and Student Handbook.

- The student is responsible for all information contained in the syllabus.
- Make note of Article III, Section B, paragraph 15, page 171 in the PVCC Student Handbook regarding the college's policy on the misuse of computer technology.
- Make note of the college's policy on Academic Misconduct Section 2.3.11 found on pages 149 through 150.
- Students with disabilities who believe that they need accommodations in this class are encouraged to contact the Disability Resource Center in the Gina Kranitz Student Center, Room 119 or call 602-787-7170

**ALL PROVISIONS IN THIS SYLLABUS ARE SUBJECT TO REVISION BY THE INSTRUCTOR. SUCH REVISIONS, IF ANY, WILL BE ANNOUNCED IN CLASS AND POSTED ON THE INSTRUCTOR'S WEBSITE AT THE FOLLOWING ADDRESS:**

**<http://www2.pvc.maricopa.edu/~nicoloff/changes.html>**

#### CLASS ATTENDANCE:

Attendance and punctuality is required!! Read the school catalog to become familiar with policies on withdrawals and incompletes. There will be no make-up tests, students must be present on test days.

#### ASSIGNMENTS:

Assignments are required and will be due at the beginning of class. They will be worth 100 pts. toward the final grade. The assignments will consist of the problems on My Math Lab or assigned problems from the text. Late homework will not be accepted. Late homework is defined to be any homework that is completed after the beginning of class on the day it is due.

#### TESTING:

There will be up to 5 unannounced quizzes worth 100 pts. (20 pts. each) There will be 5 - 100 pt. tests during the semester to cover all chapters studied.

GRADING:

Quizzes	100	A=90-100%	630-700 pts
Homework	100	B=80-89%	560-629 pts
Tests	500	C=70-79%	490-559 pts
Total	700	D=60-69%	420-489 pts

**TENTATIVE SCHEDULE**

<b>DATE OF CLASS MEETING</b>	<b>SECTIONS TO BE COVERED</b>	<b>TOPICS TO BE COVERED</b>	<b>ASSIGN # DUE DATE</b>
(M) 6/1	Introduction 1.1 1.2 R.2	Introduction Numbers, Data, and Problem Solving Visualization of Data Circles	#1 6/1
(T) 6/2	1.3 1.4 2.1	Functions and Their Representations Types of Functions and Their Rates of Change Linear Functions and Models	#2 6/3
(W) 6/3	2.2 2.3 2.4	Equations of Lines Linear Equations Linear Inequalities	#3 6/4
(R) 6/4	2.5 <b>REVIEW</b>	Piecewise-Defined Functions <b>REVIEW</b>	#4 6/9

<b>DATE OF CLASS MEETING</b>	<b>SECTIONS TO BE COVERED</b>	<b>TOPICS TO BE COVERED</b>	<b>ASSIGN # DUE DATE</b>
(M) 6/8	3.1 <b>TEST I</b>	Quadratic Functions and Models <b>CHAPTER 1 &amp; SECTIONS (R.2, 2.1 &amp; 2.2)</b>	#4 6/9
(T) 6/9	3.2 3.3 3.4	Quadratic Equations and Problem Solving Quadratic Inequalities Transformations of Graphs	#5 6/10
(W) 6/10	4.1 <b>REVIEW</b>	Nonlinear Functions and Their Graphs <b>REVIEW</b>	#6 6/15
(R) 6/11	4.2 <b>TEST II</b>	Polynomial Functions and Models <b>SECTIONS (2.3 - 2.5) &amp; CHAPTER 3</b>	#6 6/15
(M) 6/12	<b>LAST DAY TO WITHDRAW WITHOUT INSTRUCTOR'S SIGNATURE</b>		
(M) 6/15	4.3 4.4 4.5	Real Zeros of Polynomial Functions The Fundamental Theorem of Algebra Rational Functions and Models	#7 6/16
(T) 6/16	4.6 4.7 5.1	Polynomial and Rational Inequalities Power Functions and Radical Equations Combining Functions	#8 6/17
<b>DATE OF CLASS</b>	<b>SECTIONS TO BE</b>	<b>TOPICS TO BE COVERED</b>	<b>ASSIGN #</b>

<b>MEETING</b>	<b>COVERED</b>	<b>DUE DATE</b>	
(W) 6/17	5.2 <b>REVIEW</b>	Inverse Functions and Their Representations <b>REVIEW</b> #9 6/22	
(R) 6/18	5.3 <b>TEST III</b>	Exponential Functions and Models <b>CHAPTER 4</b> #9 6/22	
(M) 6/22	5.4 5.5 5.6	Logarithmic Functions and Models Properties of Logarithms Exponential and Logarithmic Equations #10 6/23	
(T) 6/23	<b>LAST DAY TO WITHDRAW WITHOUT INSTRUCTOR'S SIGNATURE</b>		
(T) 6/23	5.7 6.1	Constructing Nonlinear Models Functions and Equations in Two Variables #11 6/24	
(W) 6/24	6.2 <b>REVIEW</b>	Systems of Equations and Inequalities in Two Variables <b>REVIEW</b> #12 6/25	
(R) 6/25	6.3 <b>TEST IV</b>	Systems of Linear Equations in Three Variables <b>CHAPTER 5</b> #12 6/29	
(M) 6/29	<b>LAST DAY TO WITHDRAW WITH INSTRUCTOR'S SIGNATURE</b>		
<b>DATE OF CLASS</b>	<b>SECTIONS TO BE</b>	<b>TOPICS TO BE COVERED</b>	<b>ASSIGN # DUE DATE</b>

<b>MEETING</b>	<b>COVERED</b>		
(M) 6/29	6.4	Solutions to Linear Systems	
	6.5	using Matrices	
		Properties and Applications of	#13 6/30
		Matrices	
(T) 6/30	6.6	Inverses of Matrices	#14 7/1
	6.7	Determinants	
(W) 7/1	<b>REVIEW</b>	<b>REVIEW</b>	
(R) 7/2	<b>TEST V</b>	<b>CHAPTER 6</b>	

## STUDENT INFORMATION/SYLLABUS ACKNOWLEDGEMENT FORM

Course Prefix & Number \_\_\_\_\_ Semester \_\_\_\_\_

Lecture Section Number \_\_\_\_\_ Today's Date \_\_\_\_\_

Name (print) \_\_\_\_\_ Phone # (\_\_\_\_)-\_\_\_\_\_

e-mail address \_\_\_\_\_ 4 Digit Personal ID # \_\_\_\_\_

Previous Math courses	High School	College	Final grade

Why are you taking this course? What is it about this course that you need for your degree program?

What are you going to do to succeed in this class? (*i.e.*: When are you going to do your homework? Will you join a study group? Will you attend every class?)

What would you like me to do to help you succeed in this class?

Other comments:

### **SYLLABUS ACKNOWLEDGMENT/RECEIPT**

I have received a copy of the syllabus for this course, and the instructor has discussed the contents of the syllabus. I have read the syllabus and understand the course content, class procedures, and what is expected of me in this class.

\_\_\_\_\_  
Student Signature

