

# New Mexico State University Grants Campus

## Math 121: College Algebra

3 credits

**Instructor:** Marlene Chavez-Toivanen

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**Office:** MH 113B

**Office hours:** MW 12:30 – 1:00 p.m.; 3:30 – 4:30 p.m.  
TuTh 9:00 – 11:00 a.m.; 1:45 – 2:15 p.m.  
Or by appointment

**Class Place & Time:** MH 102, MW, 1:00 – 2:40 p.m.

**Course Textbook:** *Explorations in College Algebra, Third Edition*. Linda Almgren Kime, Judith Clark, and Beverly Michael. John Wiley & Sons, 2005. (ISBN: 0-471-46576-3)

**Course Description:** This course will focus on the Fundamental concepts of functions, including algebraic and graphical properties; Fitting functions to data; Finding zeros and extreme values; and solving systems of equations. This course will serve as the prerequisite to Math 142G, Calculus for the Biological and Management Sciences I, Math 230, Matrices and Linear Programming and Math 190, Pre-Calculus. This course meets the competencies recommended by the New Mexico Articulation Task Force. The content, pedagogy, and supporting materials for the course include projects and -activities that engage students and deepen their understanding.

**Course Objectives:** Upon completion of the course, student will be able to:

- Sketch linear, higher order polynomial, exponential, logarithmic, radical and rational functions.
- Determine the vertex, axis of symmetry, local extrema, and intercepts of quadratic functions.
- Use curve fitting to model data.
- Find the roots and zeros of quadratic equations.
- Solve systems of two and three linear equations.
- Find the value of a function for a given domain value.
- Add, subtract, multiply, divide and compose functions.
- Compute the difference quotient for a given function.
- Determine the inverse of a function.
- Understand the concepts of domain and range and be able to determine the domain and range on polynomial, radical, and rational functions.
- Use and understand slope as a rate of change.
- Use equations and systems of equations to solve application problems.
- Solve compound interest problems.
- Solve application problems involving optimization.
- Solve exponential growth and decay problems.

**Instructional Activities:** Learning activities will consist of lectures; classroom discussions; mathematical explorations; readings from the text; working problems in class, homework activities; preparing for, taking, and reviewing tests; and preparing for and taking a comprehensive final exam.

**Evaluation:** Evaluation will be based on three unit exams, the final exam, homework assignments and quizzes. The final exam will count as 20% of the final grade. Homework and quizzes will be averaged and will count as 20% of the final grade. The three unit exams will count as 60% of the final grade.

**Grading Scale:**

100% – 90%	A
89% – 80%	B
79 %– 70%	C
69%– 60%	D
59% and below	F

**Homework:** Homework exercises will involve working exercises from the text after the appropriate material has been covered in class (see course outline for specific dates). Upon handing in assignments, they should be in order and stapled, and it should be clear to the reader which answers go with which problems and/or their various parts. All homework assignments must be completed in pencil. If you submit homework with only answers and no work you will receive a zero for that assignment. Assignments should be handed in at the beginning of the class period for which they are due. Late homework will not be accepted; a score of zero will be awarded for a homework assignment not handed in on time. If you are absent, you are still responsible for turning in your assignment for that day. You are also responsible for the next class period's assignment too.

**Readings:** You will be assigned readings from the text and other materials provided by me. You will be responsible for all readings whether they are discussed or covered in class. As you read, take notes, form questions and work the examples. All information is subject to be on a quiz or an exam.

**Quizzes:** You will be quizzed periodically. All quizzes will be in class and you will be given advance notice of quiz dates. Quizzes can not be made up or retaken.

**Tests:** There will be three unit exams and a comprehensive final. All exams will be taken in class on a specific day. Tests can not be made up or retaken.

**Attendance:** Your attendance is mandatory. You are responsible for all class activity whether you are in class or not. See the syllabus addendum for more information.

**Calculator:** A graphing calculator is recommended for this course, preferably at TI-83 plus or TI-84. You may borrow one from the math department. See me for more information.

**Cell Phones:** Cell phones and pagers must be turned off. If yours rings during class, you will be expected to take your possessions and leave class for the day.

**Important Dates to Remember:**

Labor Day Holiday-No Classes.....Monday, September 4  
Fall Break-No Class.....Monday & Tuesday, October 9 &10  
Last day to drop a course with a "W".....Tuesday, October 17, 4:00 p.m.  
Last day to Withdraw from the University.....Friday, November 17, 4:00 p.m.  
Thanksgiving Holiday-No Classes.....Wednesday – Saturday, November 22 - 25

## SYLLABUS ADDENDUM

- The instructor may modify this syllabus to meet the needs of a particular class.
- If you have, or believe you have, a disability and would benefit from any accommodation(s), you may wish to register with the Student Services Office on the first floor of Martinez Hall. All medical information will be treated confidentially. After you have registered, please make sure that I receive a copy of the accommodation memorandum from Student services within the first two weeks of class. It will be the student's responsibility to inform the office of Student Services (in a timely manner) if services/accommodations provided are not meeting your needs. Feel free to call Ms. Irene Lutz, Campus Student Services Officer at 287-6629 with any questions about the Americans with Disabilities Act (ADA), and/or Section 504 of the Rehabilitation Act of 1973.
- If you have a condition that may affect your ability to exit safely from the premises in an emergency or that may cause an emergency during class, you are encouraged to discuss any concerns with Ms. Irene Lutz, Campus Student Services Officer at 287-6629.
- Any student found guilty of academic misconduct shall be subject to disciplinary action. Academic misconduct includes, but is not limited to, the following actions: cheating; helping other students cheat; plagiarism; unauthorized possession of examinations, reserve library materials or laboratory materials; unauthorized changing of grades on an examination, instructor's grade book or grade report; nondisclosure or misrepresentation in filling out applications or other college records. The following disciplinary actions and sanctions may be imposed for any of the above infractions of regulations: Disciplinary Probation, Disciplinary Suspension, Dismissal, and Expulsion. At the very least, academic misconduct may result in a failing grade in this class.
- Students are expected to attend regularly all classes for which they are registered. When the number of absences is excessive and hinders a student's progress, the instructor may recommend expulsion from the class. For a 15-week course, that means more than **three consecutive absences or five cumulative absences**. Based on the recommendation of the instructor, and with the concurrence of the Campus Instructional Officer and the Campus Student Services Officer, a student will be dropped for persistent absences or for persistent failure to complete class assignments. Similarly, a student may be dropped for behavior that interferes with the educational environment of the class. Any student who has been dropped has the right to appeal through the student Academic Grievance Policy (see Student Handbook).

<b>Date</b>	<b>Class Activity</b>	<b>Homework Problems</b>	<b>Readings</b>
W 8/23	Intro. to class and 1.3		1.1-1.4
M 8/28	1.3, 1.4		2.1- 2.2
W 8/30	Exploration 1.2 & 1.3		2.3 - 2.6
<b>M 9/4</b>	<b>Labor Day-No Class</b>		
W 9/6	2.1, 2.2, 2.3		
M 9/11	2.5, 2.6		
W 9/13	Explorations 2.2a & 2.2 b & 2.7		
M 9/18	2.8 & 2.9		Read 3.1 & 3.2
W 9/20	3.1 & 3.2	Ex. 2, 6, 8, 10, 14, 20, 29, 40	Read 3.3 & 3.4
M 9/25	3.3 & 3.4	Ex. 52, 53, 63, 74, 76, 83	
W 9/27	3.4 cont. Exploration 3.1	Ex. 88	
<b>M 10/2</b>	<b>Exam #1 (Chapters 1, 2, &amp; 3)</b>		<b>Read 4.1 &amp; 4.2</b>
W 10/4	4.1 – 4.4		
<b>M 10/9</b>	<b>Fall Break- No Class</b>		
W 10/11	4.5 – 4.7		
M 10/16	5.1 – 5.3		
W 10/18	5.4 – 5.6		
M 10/23	6.1 & 6.2		
W 10/25	6.3 – 6.5		
M 10/30	Exploration 6.1		
<b>W 11/1</b>	<b>Exam #2 (Chapters 4, 5 &amp; 6)</b>		
M 11/6	7.1, 7.2		
W 11/8	7.3, 7.4		
M 11/13	7.5, 7.6		
W 11/15	8.1, 8.2		
M 11/20	8.3		
<b>W 11/22</b>	<b>No Class Thanksgiving</b>		
M 11/27	8.5		
W 11/29	8.6		
M 12/4			
W 12/6	Review		
<b>M 12/11</b>	<b>Final Exam 1:00 – 3:00</b>		

Key: AA – Algebra Aerobics  
 Ex – Exercises at the end of the Chapter  
 Explore – Explorations at the end of the Chapter