San Diego Community College District Mesa College Course Syllabus, Fall 2019

Subject Area and Course Number: Mathematics 116Units: 3.0Course Title: College and Matrix AlgebraUnits: 3.0Class Meets: Monday, Wednesday 6:00 - 7:25 P.M., room MS418ClassNumber: 11542Instructor: Russell La PumaOffice: MS222EVoice mail: (619) 388-2767 x5503Office Hours: MW 4:30 PM - 5:30 PMWeb: http://homework.sdmesa.edu/rlapumaE-mail: lapumath@gmail.comMyMathLab course ID: lapuma08975E-mail: lapumath@gmail.com

Prerequisite: Math 96 with a grade of "C" or better, or equivalent or Milestone M50 or M40; or students with a milestone M30 must enroll in MATH 116X (Mathematics 116 and Mathematics 15C learning community). or

MATH 109 with a grade of "C" or better, or equivalent.

Course Description: This course is designed to strengthen the algebra skills of students seeking Business or Natural Science degrees who are required to take an applied calculus course. Topics in the course include the theory of functions; graphing functions; exponential and logarithmic functions; solving equations involving algebraic, exponential and logarithmic functions; solving systems of linear equations; matrix algebra; modeling; and applications problems. Analytical reading and problem solving skills are required for success in this course.

Student Learning Objectives: Upon successful completion of the course the student will be able to:

1. Analyze, graph, and evaluate linear functions related to application problems in business and the natural sciences.

2. Perform algebraic operations on functions and determine function inverses.

3. Analyze and interpret the relationship between the properties and graphs of polynomial functions.

4. Determine all the exact zeros of a polynomial by applying root-finding techniques and theorems.

5. Analyze and interpret the graphs of algebraic functions including square root, cube root, absolute value, piece-wise defined functions and rational functions.

6. Solve and graph linear inequalities in one and two variables and non-linear inequalities in one variable.

7. Analyze and apply rigid and non-rigid transformations to algebraic, exponential and logarithmic functions.

8. Solve equations involving logarithmic and exponential functions, including application problems.

9. Perform algebraic operations with matrices.

10. Construct systems of equations from application problems and solve them using various techniques.

11. Use the above skills in various applications such as partial fraction decomposition or linear programming.

Course Learning Outcomes: Students are able to perform operations on functions, including writing and simplifying the difference quotient.

Students are able to graph rational functions.

Evaluation: There will be three tests and a final examination. To avoid the need for make-up tests, the score of any missed test will be dropped and the final and remaining tests given extra weight. There will be no make-up tests. There will be short quizzes tentatively scheduled for every other class meeting, with the lowest two quiz scores dropped. Homework will be done either on line using MyMathLab, or from the textbook. The final grade will be determined as 90-100% A, 80-89% B, 70-79% C, 60-69% D, with the following weights in effect:

| Homework | 10% | |
|-------------------|-----|------|
| Quizzes | 10% | |
| Tests, best two @ | 24% | each |
| Test, worst | 8% | |
| Final | 24% | |

Text and Supplies: Essentials of College Algebra, Lial, Hornsby, Schneider, & Daniels, 12th edition, ISBN: 978-0-13-599914-1; or

MyMathLab Access, ISBN: 978-0-13-590255-4.

A scientific calculator capable of evaluating log and trig functions is required for the course. A graphing calculator (e.g. a TI-84) is highly recommended. You will be allowed to use a calculator on any test unless otherwise directed. The use of a mobile phone or a computer *will not* be allowed on tests or quizzes.

- Attendance Requirements: A student accumulating unexcused absences of more than 6% of the total hours that the class meets (equal to two class meetings) may be dropped by the instructor. If there are unexcused absences of more than 12% (four class meetings), or missed tests, the student *will* be dropped. The withdrawal deadline is **October 25**. Any student still enrolled in the course after that date cannot receive a "W." It is the student's responsibility to add, drop, or withdraw from classes before course deadlines.
- **Tardiness:** Class begins at the set hour. It is understood that tardiness is occasionally unavoidable, but chronic tardiness disrupts the learning environment. Likewise, it is usually inappropriate to leave before the end of class without consulting the instructor. If the instructor is more than twenty minutes late, students may leave after signing an attendance sheet.
- **Classroom Behavior and Student Code of Conduct:** Students are expected to respect and obey standards of student conduct while in class and on campus. The student Code of Conduct, disciplinary procedure, and student due process (Policy 3100, 3100.1, and 3100.2) can be found in the current college catalog. Under most circumstances, food, beverages, and phones, are unnecessary and unwelcome in the classroom.
- **Collaboration and Cheating:** You are encouraged to work with tutors or other students on homework and class topics, provided you share learning, not just answers. (Consider attending the MT2C Math & Science Tutoring, LRC 1st floor.) Collaboration on exams or quizzes, however, is regarded as cheating and will result in a zero for that exam.
- Accommodation of Disability: Students with disabilities who may need academic accommodations should discuss options with their professors during the first two weeks of class.

| Math 116 – La Puma – Fall 2019 | | | | |
|--------------------------------|----------|--------------|---------|---------------------------|
| week | | Mon | | Wed |
| | Aug 19 | introduction | Aug 21 | Chapter 1 |
| 1 | | | | |
| | Aug 26 | Chapter 1 | Aug 28 | Chapter 1 |
| | - | | | |
| 2 | Son 2 | Labor Day | Son 4 | 2.1 |
| | Sep 2 | Labor Day | Sep 4 | 2.1 |
| 3 | | | | |
| | Sep 9 | 2.3 | Sep 11 | 2.4 |
| 4 | | | | |
| | Sep 16 | 2.5 | Sep 18 | 2.7 |
| _ | • | 2.6 | | |
| 5 | Con 00 | aatab .uz | Con OF | T |
| | Sep 23 | review | Sep 25 | lest 1 |
| 6 | | Torrew | | |
| | Sep 30 | 2.8 | Oct 2 | 3.1 |
| 7 | | | | 3.2 |
| | Oct 7 | 3.2 | Oct 9 | 3.4 |
| | | 3.3 | | |
| 8 | 0.111 | 0.5 | 0.140 | |
| | Oct 14 | 3.5 | Oct 16 | 4.1 |
| 9 | | 7.1 | | 7.2 |
| | Oct 21 | catch up | Oct 23 | Test 2 |
| 10 | | review | | Withdrawal deadline 10/25 |
| 10 | Oct 28 | 4.3 | Oct 30 | 4.4 |
| | 00120 | 4.4 | | 4.4 |
| 11 | NI 4 | 10 | | |
| | Nov 4 | 4.6 | Nov 6 | 5.1 |
| 12 | | | | |
| | Nov 11 | Veterans Day | Nov 13 | 5.2 |
| 12 | | | | 5.3 |
| 13 | Nov 18 | catch up | Nov 20 | Test 3 |
| | | review | 1107 20 | Test 5 |
| 14 | NI 07 | | | |
| | Nov 25 | break | Nov 27 | I nanksgiving Day |
| break | | | | |
| | Dec 2 | 5.5 | Dec 4 | 5.7 |
| 15 | | 5.7 | | 5.8 |
| 15 | Dec 9 | 54 | Dec 11 | catch up |
| | 2000 | 5 | | review |
| 16 | . | | | |
| | Dec 16 | Final | Dec 18 | no class |
| F | | | | |

Schedule subject to change with prior notice.