Mathematics 43-40242
Pre-Calculus III
Advanced Topics
Spring Quarter 2016
De Anza College

Instructor: Robert Ramsey

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Lecture: Tuesday and Thursday, 1:30 pm to 3:45 pm
De Anza College, Main Campus
Room G5

Office Hours: Tuesday and Thursday; 12:30 pm to 1:30 pm
De Anza College, Main Campus
PSME Building, Room S33

Text: **Precalculus with Limits, 3rd e/**
Author: Ron Larson
ISBN-13: 9781439049099
Publisher: Cengage
Copyright: 2012

Prerequisites: MATH 41 and MATH 42 (both with a grade of C or better); or a satisfactory score on Calculus Readiness Test within the last calendar year.

Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.

About the Course: Math 43 is the third course in the three part pre-calculus course series, designed to give students a solid understanding in the fundamental concepts necessary to succeed in differential and integral calculus. Topics covered include hyperbolic functions, parametric equations, systems of

equations and inequalities, vectors, lines and planes, sequences and series, polar coordinates, mathematical induction, and the binomial theorem.

At De Anza College beginning in Fall, 2015 we are phasing out **Larson,** *Precalculus with Limits*, **2nd edition** and phasing in **Larson,** *Precalculus with Limits*, **3rd edition.**

We will cover the following sections from the Larson, Precalculus with Limits, 3rd edition, textbook:

> **Chapter 7**   (all §ections)
> **Chapter 8**   (all §ections)
> **Chapter 9**   (§ 9.1 – 9.5)
> **Chapter 10** (§10.6 – 10.9)
> **Chapter 11** (all §ections)
> **Hyperboic Functions**

In addition, in this course, we make use of graphical and numeric techniques to understand the concepts necessary to succeed in Calculus.

Student Learning Outcome Statements (SLO)

• **Student Learning Outcome**: Analyze, investigate, and evaluate linear systems, vectors, and matrices related to two or three dimensional geometric objects.

• **Student Learning Outcome**: Graph and analyze regions/curves represented by inequalities or trigonometric, polar, and parametric equations, including conic sections.

• **Student Learning Outcome**: Analyze, develop, and evaluate formulas for sequences and series; Justify those formulas by mathematical induction.

Course Objectives

A. Graph and analyze curves in polar coordinates
B. Graph and analyze parametric equations.

C. Explore matrices, matrix reduction and determinants in the context of solving systems of linear equations
D. Solve systems of inequalities and systems of non-linear equations
E. Perform operations with 3D vectors
F. Explore equations of lines and planes in 3-space.
G. Develop and use sequences and series
H. Write proofs using mathematical induction
I. Use the binomial theorem to calculate binomial coefficients and to expand binomial expressions
J. Examine the logic of conditional and bi-conditional statements as they appear in mathematical statements
K. Examine Hyperbolic functions, their graphs and verify and use common hyperbolic identities, and solve equations containing hyperbolic expressions

Study Group Information: Every student is encouraged to form a study group of two to four students. These groups will work together to complete their homework and other course assignments.

Tests: We will cover chapters seven thru eleven of the Larson, Precalculus with Limits, 3rd edition textbook. There will be four exams this quarter, near the end of chapters 7, 8, 9 and 10. The exams will be composed of both computational and concept based questions. Each exam will last approximately one hour. The questions on the exam will require the student to demonstrate his or her ability in integrating the methods, ideas and techniques learned in class. Many, but not all, questions will require the student to communicate ideas and conclusions in short essay format.

Finally, there will be no make-up exams unless arrangements are made prior to the date of said exam, and said exam is taken before the regular exam is scheduled. Should any exam be missed, without prior arrangement, that exam will count as zero.

Homework: Homework is intended as a means of increasing every students understanding, and as a means of mastering the course material. Every student is encouraged to register at www.webassign.net with the use of the course key, which will be passed out on the first day of class. Homework will be evaluated for accuracy and completion in order to assess every student's comprehension of material covered in lecture and to provide feedback to students on their progress. All homework is assigned and completed online and counted as extra credit.

Successful completion of every homework assignment should not be interpreted, in and of itself, as sufficient effort to pass Math 43. In addition, handouts passed out in class, and any in-class assignments not completed, should be considered additional home work.

Quizzes: Quizzes will be completed in class. Quizzes will be both announced and unannounced, i.e. pop-quizzes. There will be approximately six quizzes this quarter with the five highest quizzes used to calculate your average quiz score.

The quizzes completed in class are mandatory, and are used to determine your quiz score and indirectly used to complete your class participation grade. The quizzes in class will emphasis information covered during lecture.

Class Participation: Attendance during lecture is mandatory and leaving early is highly discouraged. Students are responsible for all announcements made in class, whether they are present or not. Successful performance in this course requires classroom attendance, completion of all in-class assignments, as well as homework online, and serious effort on the exams, in-class quizzes, and the final.

Final: There will be a two hour comprehensive final exam which will contain material from all chapters covered thru the course of this spring quarter. The date of the final exam is **Tuesday, June 21, 2016** from 1:45 pm to 3:45 pm in Room G5.

Grading:	4 exams (4 @ 15% each)	60 %
	Homework (Extra Credit)	10 %
	Class Participation	10 %
	Quizzes (Announced and Unannounced)	10 %
	Final	20 %
TOTAL		100 %

Grades will be as follows:

A	=	90.00 to 100.00 %
B	=	80.00 to 89.99 %
C	=	70.00 to 79.99 %
D	=	55.00 to 69.99 %
F	=	less than 55.00 %

Academic Integrity: Any credible accusation of academic dishonesty, no matter how minor, will be investigated, and if found to be meritorious, will be dealt with severely. Students caught cheating will receive an F for that assignment and notice of the offense will be forwarded to the chairman of the department of mathematics and the Vice President for Academic Affairs for further punitive action.

Disruptive Behavior: Unruly or disruptive behavior to include incessant talking, rude, profane, or vulgar language, threatening or violent behavior, and\or any form of disrespect, directed at the instructor or fellow classmates will not be tolerated. Such behavior will result in the immediate and permanent removal of the offending individual from this course. In addition, students are expected to refrain from sending text messages during class.

Important Dates:

Monday, Apr. 4 :: First day of Winter Quarter 2015**.**

Saturday, Apr. 16 :: Last day to add quarter-length classes. *Add date is enforced.*

Sunday, Apr. 17 :: Last day to drop for a full refund or credit (quarter-length classes)**.** *Drop date is enforced.*

Sunday, Apr. 17 :: Last day to drop a class with no record of grade. *Drop date is enforced.*

Friday, Apr. 29 :: Last day to request pass/no pass grade. *Request date is enforced.*

Friday, May 27 :: Last day to drop with a "W." *Withdraw date is enforced.*

Saturday - Monday, May 28-30 :: Memorial Day Weekend (no classes)

Saturday - Friday, June 18-24 :: Spring Final Exams

Friday, June 24 :: Last day to file for a spring degree or certificate

Friday, June 24 :: Last day of Spring Quarter

Saturday, June 25 :: Commencement Ceremony

Monday, June 27 :: First day of Summer Session