Santa Clara University Department of Electrical Engineering Aleksandar I. Zecevic Spring 2014

ELEN 211: Modern Network Analysis I
TEXT: W-K. Chen: Graph Theory and Its Engineering Applications, World Scientific, 1997 (recommended).

SYLLABUS

WEEK TOPIC

- 1 Review of fundamental concepts
- 2 Matrices and systems of linear equations
- **3** Topological concepts
- 4 Network matrices
- 5 Network matrices (ctd.)
 - MIDTERM

6

- 7 Loop and cutset analysis
- 8 Loop and cutset analysis (ctd.)
- 9 State equations
- **10** State equations (ctd.)
- 11 FINAL EXAM

LEARNING OUTCOMES

Students who successfully complete this course should be able to:

- 1. Use graph theoretic concepts and Laplace transforms to analyze the behavior of linear circuits.
- 2. Describe the circuit topology in terms of network matrices.
- 3. Formulate fundamental cutset equations in matrix form.
- 4. Formulate fundamental loop equations in matrix form.
- 5. Formulate and solve state equations for regular and degenerate circuits.

GENERAL INFORMATION

OFFICE:	Engineering Center, Room 223
OFFICE HOURS:	By appointment
PHONE:	(408) 554-2394
FAX:	(408) 554-5474
E-MAIL:	azecevic@scu.edu
WEBSITE:	http://www.engr.scu.edu/~azecevic/

GRADING

The Midterm and Final exams will be worth 40% and 60% of the grade, respectively. Homework problems will be assigned for practice, but they will *not* be corrected or graded. Instead, detailed solutions will be made available.