

NORTH CAROLINA STATE UNIVERSITY
 Department of Mathematics
MA 303 Syllabus - Fall 2009
 Text: Introduction to Linear Analysis
 By N.J. Rose

Date	Sections	Topics
Aug. 20	1.1, 1.2	Difference Equations
Aug. 25	1.2, 1.3	Difference Equations, Compound Interest
Aug. 27	1.3	Compound Interest
Sept. 1	1.4, 1.5	Mortgage Amortizations, 1 st Order Difference Equation
Sept. 3	1.6	1 st Order Difference Equations
Sept. 8	1.7	Complex Numbers
Sept. 10	1.7, 1.8	Complex Numbers, Fibonacci Numbers
Sept. 15	1.9	Properties of Solutions of Second Order Linear Difference Equations
Sept. 17		Test #1
Sept. 22	1.10	Homogeneous 2 nd Order
Sept. 24	1.10	Homogeneous 2 nd Order
Sept. 29	1.11	Non-homogeneous
Oct. 1	1.12, 1.13	Economic Model, Gambler's Ruin
Oct. 6	2.1	Differential Equations
Oct. 13	2.2	Separation of Variables
Oct. 15	2.2, 2.3	Examples, First Order Linear
Oct. 20		Test #2
Oct. 22	2.3	Linear 2 nd Order
Oct. 27	3.1, 3.2	N-tuples, Matrix Notation for Linear Systems
Oct. 29	3.3, 3.4	Properties of Solutions, REF & RREF
Nov. 3	3.6	Solutions of Systems
Nov. 5	3.8	Matrix Algebra
Nov. 10	3.9, 3.10	Powers, Transposes, Inverses
Nov. 12	3.10, 3.12	Inverses, Determinants
Nov. 17		Test #3
Nov. 19	3.13, 3.14	Eigenvalues & Eigenvectors
Nov. 24	3.14	Eigenvalues & Eigenvectors
Dec. 1	3.15	Systems of Differential Equations
Dec. 3	3.16	A^k and Solutions of Systems of Difference Equations