SM275 SYLLABUS FALL 2019-2020

Text: Mathematics for Economics (PDF)
Course Coordinator: minut@usna.edu

Student Learning Outcomes: Learning Goals and Objectives for SM275: Mathematics for Economics

Upon successful completion of this course, students are able to do the following:

1. Perform basic operations with matrices.
2. Solve simple equilibrium models in economics using matrix methods.
3. Apply the theory of difference equations to analyze growth models in economics.
4. Apply the theory of constrained optimization to problems involving utility maximization or least-cost combination of inputs.

Lesson	Day	Date	Section	Topics
1	M	8/19	6	Discrete Dynamical Systems
2	W	8/21	7	Interest Rates
3	F	8/23	7	Interest Rates
4	M	8/26	8	Cobwebs
5	W	8/28	9.1	Solutions of First Order Systems
6	F	8/30	9.2-9.3	Fixed Points, Discrete Market Models
7	T	9/3		Review
8	W	9/4	10	Second Order Dynamical Systems
9	F	9/6	10	Second Order Dynamical Systems
10	M	9/9	11	A Model for the National Economy
11	W	9/11	12.1-12.2	Fixed Points and Stability for Second Order Systems
12	F	9/13	12.3	Stability for Second Order Systems
13	M	9/16	13.1	Stability of Discrete Market Models
14	W	9/18	13.2	Stability of National Income Models
15	F	9/20		Review
16	M	9/23		TEST 1
17	W	9/25	1.1-1.3	Market Models
18	F	9/27	2.1-2.2	Matrices
19	M	9/30	3.1-3.2	Linear Systems, Reduced Row Echelon Form
20	W	10/2	3.3	Finding Solutions to Linear Systems
21	F	10/4	3.4	Elementary Row Operations and Inverses
22	M	10/7	3.5	Solving Systems with Inverses
23	W	10/9		Review
24	F	10/11	4.1	Basic Concepts of Determinants
25	W	10/16	4.2	Properties of Determinants
26	F	10/18	4.3-4.4	Determinants and Inverses, Cramer's Rule
27	M	10/21	5.1-5.2	Market Models, National Income Model
28	W	10/23	5.3	Leontief Input-Output Models

29	F	10/25		Review
30	M	10/28		TEST 2
31	W	10/30	14	Critical Points and Second Derivative Test
32	F	11/1	14	Critical Points and Second Derivative Test
33	M	11/4	15	Economic Applications
34	W	11/6	15	Economic Applications
35	F	11/8	16	Lagrange Multipliers
36	W	11/13	16	Lagrange Multipliers
37	F	11/15	16	Lagrange Multipliers
38	M	11/18`	17	Optimization with Inequality Constraints
39	W	11/20	17	Optimization with Inequality Constraints
40	F	11/22	18	Linear Programming
41	M	11/25	18	Linear Programming
42	W	11/27		Review
43	M	12/2		TEST 3
44	W	12/4		Review