San José State University
Economics Department
ECON 104, Mathematical Methods for Economics, Section 02, Fall 2019

Course and Contact Information

Instructor:	Dr. Triya Seshadri
Office Location:	DMH 219
Email:	triyakshana.seshadri@sjsu.edu
Office Hours:	W 3pm-4pm and by appointment
Class Days/Time:	MW 12:00pm- 1:15pm
Classroom:	DMH 161

Course Description

Applications of Linear Algebra and Differential Calculus to Economic Analysis. Topics include market equilibrium, properties of production functions, multipliers, optimization methods, comparative statics analysis.

Mathematics and mathematic modeling are essential components of an economist's toolkit. The main objective of this course, hence, is to provide students with the basic mathematical knowledge required to analyze economic problems. To this end, during the semester, we will mainly focus on the following topics: single and several variable Calculus, calculation of derivatives (including partial derivatives), optimization (constrained & unconstrained), matrix algebra, and linear programming.

SJSU classes are designed such that in order to be successful, it is expected that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including weekly assignments, in-class simulations, and three exams. Careful time management will help you keep up with readings and assignments and enable you to succeed in this class. More details about student workload can be found in University Policy S12-3.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students should be able to:

CLO 1: define and explain indifference curve, isoquant, cost minimization, profit

maximization, equilibrium conditions in output and input markets, and the national income model.

CLO 2: identify and apply functions of one or more variables, simple differentiation, partial and total differentiation, and matrix algebra.

CLO 3: solve simple real-world optimization problems both mathematically and graphically.

Important Dates for the course:

Category	**Date**
Last Day to Drop without W	Sept 3rd 2019
Last Day to Add the Course	Sept 10th 2019
Mid Term 1	Sept 18th 2019
Graded Homework 1	Sept 18th 2019
Mid Term 2	October 16th 2019
Graded Homework 2	October 16th 2019
Mid Term 3	November 13th 2019
Graded Homework 3	November 13th 2019
Final Exam	December 16th 2019

Required Texts/Readings Primary Textbook (Required)

Essential Mathematics for Economic Analysis, 5th Edition, by Knut Sydsaeter, Peter Hammond and Arne Strom.

You may choose to purchase a cheaper, used, 4th edition of the text. If you choose this option, please ensure that the homework and practice questions assigned match-up in your version of the text.

Assignments and Grading Policy

Grades for this course are composed of three homeworks, three midterms (lowest of these is dropped), and a final exam. The grading rubric and a description of each component is provided below:

Homework

You will have three graded homework assignments. Each is worth 10% of the final grade. I highly recommend that you work in groups on homework assignments. However, each student must hand in a separate write-up. All homework is due at the beginning of class and no late homework will be accepted. In addition to the graded homework, I will assign practice questions for you to work on. These will not be graded; however, in my experience, students who complete practice questions tend to master the subject faster and do better in exams.

Midterm and Final Exam

We have three Midterm exams. Each midterm is worth 20% of your grade. The lowest of these will be dropped. The Final exam is worth 30% of your grade. While Midterm exams are not cumulative, the course material is like a scaffold. You need to understand and apply earlier material to successfully complete later material. Final Exam is cumulative. Exam questions will be similar to questions in your homework

Category	**Percentage of Course Grade**
Homework Assignments (10% each)	30%
Mid Term Exams (20% Each)	40%
Final Exam	30%

Grading Scale:

Grade	**Percentage**
A plus	97 to 100%
A	94 to 96%
A minus	90 to 93%
B plus	87 to 89 %
B	84 to 86%
B minus	80 to 83%
C plus	77 to 79%
C	74 to 76%
C minus	70 to 73%
D	60 to 69%
F	Less than 60%

Classroom Protocol

I take academic honestly very seriously and will follow the policies as published by SJSU. These policies are online and available at http://www.sjsu.edu/senate/S07-2.htm. It is the responsibility of the student to read and understand what constitutes a violation of the honor code. Claims of ignorance cannot be used to justify dishonest behaviors. All instances of academic dishonesty will be reported through the appropriate channels. In this course, any student caught engaging in activities which violate the honor code as written by the University will receive a semester grade of “F” for this course.

Disability Notice

Please see me as soon as possible if you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Disability Resource Center at http://www.drc.sjsu.edu/ to establish a record of

their disability.

Other Class Policies

1. Students will show respect for others at all times.
2. Class will begin on time and end on time.
3. Cell phones need to be set on silent, and laptops speakers need to be muted.
4. Students using electronic devices for non-class purposes will be asked to leave the classroom.
5. Please email me using your SJSU email through Canvas. All attachments need to be through Canvas.
6. I will usually reply within 48 hours except during weekends.
7. I will use Canvas Announcements frequently.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page.

ECON 104 / Math Econ, Fall 2019, Course Schedule

Course Schedule

This is the planned schedule for the course. In addition to the listed readings, additional readings may be assigned and will be handed out in the classroom and posted on Canvas. Any changes to this schedule will be communicated in the class and through Canvas.

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/21	Syllabus, Introduction
2	8/26 8/28	Properties of Functions, Ch 4, 5
3	9/4	Differentiation, Ch 6 **No class 9/2**
4	9/9 9/11	Derivatives in Use, Ch 7
5	9/16 9/18	Derivatives in Use, Ch 7 **Graded Homework 1 Due 9/18 Mid Term 1 9/18**
6	9/23 9/25	Single Variable Optimization, Ch8
7	9/30 10/2	Single Variable Optimization, Ch8
8	10/7 10/9	Functions of Many Variables, Ch 11
9	10/14 10/16	Functions of Many Variables, Ch 11 **Graded Homework 2 Due 10/16 Mid Term 2 10/16**
10	10/21 10/23	Multivariable Optimization, Ch 13
11	10/28 10/30	Constrained Optimization, Ch 14
12	11/4 11/6	Linear Regression
13	11/13	**Graded Homework 3 Due 11/13 Mid Term 3 11/13**
14	11/18 11/20	Matrix and Vector Algebra, Ch15
15	11/25 11/27	Determinants and Inverse Matrices, Ch 16
16	12/2 12/4	Linear Programming (Time Permitting)
17	12/9	**Review**
18	12/16	**Final Exam December 16th**