Math 117
Introduction to Mathematics for Business and Economics

4.0 Units   Fall 2023   MWF 11:00-11:50am

Location: KAP 146

Instructor: Aykut Arslan
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Office Hrs: TBD
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Course Description
This course introduces the basic concepts of functions and graphs, including polynomials and rational functions as well as exponential and logarithmic functions. We will also cover systems of linear equations and matrices.

Learning Objectives
The goal of this course is to introduce students to the basic concepts of functions that can be used to model and solve real world phenomena and problems that arise in business and economics.

    Prerequisite(s): Math 040

Required Readings and Supplementary Materials
Required: *Precalculus*, Version $\lfloor \pi \rfloor = 3$, Corrected Edition by Carl Stitz and Jeff Zeager
         Freely available online at http://stitz-zeager.com/.

Description and Assessment of Assignments
Students are expected to complete regular problem sets that reinforce topics covered.
There will be in-class assessments on Sept 13, Oct 11, and Nov 8 and a final on Friday Dec 6.

Grading Breakdown

Assignment	% of Grade
Participation	5%
Homework	10%
Assessment 1	20%
Assessment 2	20%
Assessment 3	20%
Final Exam	25%

Assignment Submission Policy
Homework will be posted on Blackboard is to be submitted via Gradescope.

Additional Policies
Each Assessment will be administered once in lecture and twice as a Re-Assessment in discussion. Any student may choose to re-assess a previously taken exam. The recorded score for the Assessment will be the highest score attained on any of the three opportunities to take that assessment.

Week	Monday	Tues	Wednesday	Thurs	Friday
1	8/21 Course Overview 1.1 - Cartesian Plane	8/22 Sets of Numbers	8/23 1.1 - Distance in the Plane	8/24 Midpoints	8/25 1.2 - Relations 1.3 - Intro to Functions
2	8/28 1.3 - Intro to Functions 1.4 - Function Notation	8/29 Applied Domain	8/30 1.5 - Function Arithmetic	8/31 Difference Quotients of Lines	9/01 1.6 - Graphing Functions
3	**Labor Day**	9/05 Min and Max	9/06 1.7 - Transformations	9/07 Moving Lines	9/08 2.1 - Linear Functions
4	9/11 Chapter 1 Review	9/12 Review	**9/13 Assessment 1 Chapter 1**	9/14 Exam Solns	9/15 2.1 - Rate of Change
5	9/18 2.2 - Absolute Value	9/19 Triangle Inequality	9/20 2.3 - Quadratic Functions	9/21 Re-Assessment 1	9/22 2.4 - Inequalities
6	9/25 3.1 - Graphs of Polynomials	9/26 Sign Diagrams	9/27 3.2 - Factor Theorem	9/28 Synthetic Division	9/29 3.3 - Real Zeros
7	10/02 3.4 - Complex Zeros	10/03 Re-Assessment 1	10/04 4.1 - Rational Functions	10/05 Applications	10/06 4.2 - Graph Rational Functions
8	10/09 Chapters 2, 3 & 4 Review	10/10 Review	**10/11 Assessment 2 Chapters 2, 3 & 4**	**Fall Break**	
9	10/16 5.1 - Function Composition	10/17 Examples	10/18 5.2 - Inverse Functions	10/19 Re-Assessment 2	10/20 5.3 - Algebraic Functions
10	10/23 6.1 - Intro to Exponents	10/24 Compound Interest	10/25 6.1 - Intro to Logarithms	10/26 Richter Scale	10/27 6.2 - Properties of Logarithm
11	10/30 6.3 - Exponential Equations	10/31 Re-Assessment 2	11/01 6.4 - Logarithmic Equations	11/02 Function Races	11/03 6.5 - Applications
12	11/06 Chapters 5 & 6 Review	11/07 Review	**11/08 Assessment 3 Chapters 5 & 6**	11/09 Exam Solns	**Veteran's Day**
13	11/13 8.1 - Gaussian Elimination	11/14 Applications	11/15 8.2 - Augmented Matrics	11/16 Re-Assessment 3	11/17 8.3 - Matrix Arithmetic
14	11/20 8.3 - Matrix Multiplication	11/21 Geometry	**Thanksgiving Break**		
15	11/27 8.4 - Matrix Inverses	11/28 Re-Assessment 3	11/29 8.5 - Determinants	11/30 Area and Volume	12/01 Chapter 8 Review
	Study Days		**12/06 Final Assessment Cummulative**		

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on Research and Scholarship Misconduct.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086
eeotix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776
osas.usc.edu
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
[dps.usc.edu](dps.usc.edu), emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
[dps.usc.edu](dps.usc.edu)
Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

*Occupational Therapy Faculty Practice - (323) 442-33*40 or otfp@med.usc.edu
chan.usc.edu/otfp
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.