Identification	Subject (code, title,	MATH 225, Linear algebra and m	athematical analysis,		
	credits)	6 ECTS	-		
	Department	Mathematics			
	Program	Undergraduate			
	(undergraduate,				
	graduate)				
	Term	Spring, 2022			
	Instructor	Javanshir Azizov			
	E-mail:	Javanshir.Azizov@khazar.org, azi	zov.javanshir@gmail.com		
	Phone:	(+994 50) 753 99 09	0		
	Classroom/hours Office hours	Saturday: 08:30-10:00, 10:10-11:4	0		
Prerequisites		school algebra and trigonometry	Drior experience with calculus is		
Prerequisites	es The prerequisites are high school algebra and trigonometry. Prior experience with helpful but not necessary.				
Language	English				
Compulsory/Elective	0				
Required textbooks		et al, Thomas' Calculus: Early Tr	ranscendental, 12th edition,		
and course materials	e 1	(2010), (<u>http://libgen.org/</u>)			
	2. V.V. Konev. Linear Algebra, Vector Algebra and Analytical				
	Geometry, Textbook. Tomsk: TPU Press, 2009, 114 pp.				
		ar Algebra and its Applications. 4 th			
	Supplementary book 1. James Stewart,Essential calculus. Early transcendentals, Second Edition,				
	Brooks/Cole (2013	3)(<u>http://libgen.org/</u>)			
	2. Poole, D., Linear a	algebra: a modern introduction. 4 th E	Edition, 2014.		
Course website					
Course outline	Linear algebra and analytic	c geometry is a major course at Scho	ool of Economics and		
	Management. This introductory course covers two content areas: Linear Algebra Mathematical analysis. This introductory course covers differentiation, matrix op				
	determinants and systems	of linear equations.	_		
Course objectives	The concents of limits ten	agent to survey differentiation, ab	oin miles coloritations of		
Course objectives	 bijectives The concepts of limit; tangent to curve; differentiation; chain rule; calculations of determinants, matrix operations, Systems of linear equations, Gaussian elimination. Concept of functions; trigonometric functions Limits and continuity Derivative; Differentiation rules Matrix algebra Determinants Systems of linear equations 				
	Gaussian elimination				
Learning outcomes	Itcomes Upon successfully completing this course students will be able to:				
U	To find limit of functions at points				
	To find derivatives of functions				
	To apply theorems to solve real world problems				
	Calculations of determinants				
	Matrix operations				
	Solve systems of linear equations				
	- Solve systems				
Teaching methode	-		X		
Teaching methods	Lecture		Х		
Teaching methods	Lecture Experiential exercise		XX		
Teaching methods	Lecture Experiential exercise Assisted work				
Teaching methods	Lecture Experiential exercise		X		
Teaching methods Evaluation	Lecture Experiential exercise Assisted work Assisted lab work	Date/deadlines	X		
	Lecture Experiential exercise Assisted work Assisted lab work Others	Date/deadlines	X X		

	Quizzes (4-5)	20 (3 quizzes)			
	Activity	5			
	Final Exam	40			
	Total	100			
Policy	 off before lecture! (Not siler violators will be reprimande No late assignments will be for acceptable excuses. Med by-case basis. No late homework will be a basis. Students may discuss for your own work. If studen name on the top of students Quizzes may be given unamhomework. There will be not students will be divided into will be assigned some probl No make-up exams. If studen missed exam. If students should miss class notify the instructor by emamake-up work. Students are responsible for related to the covered topics information and announcem 	Final Exam 40 Total 100 • NO CELL PHONES are allowed during lecture and lab sessions. PLEASE turn them off before lecture! (Not silent or vibrating mode). This is a university policy and violators will be reprimanded accordingly. • No late assignments will be accepted without prior arrangement with the instructor for acceptable excuses. Medical and family emergency will be considered on case-by-case basis. • No late homework will be accepted. Homework is to be completed on an individual basis. Students may discuss homework with classmates, but students are responsible for your own work. If students have consulted classmates, please note the individuals name on the top of students' assignment. • Quizzes may be given unannounced throughout the term and will count as one homework. There will be no make-up quizzes. • Students will be divided into groups of 3 individuals for study group sessions and will be assigned some problems to solve together in the class. • No make-up exams. If students miss an exam, a zero score will be assigned to the missed exam. • If students should miss class due to personal emergency or medical reasons, please notify the instructor by email immediately. A doctor's note will be required for make-up work. • Students are responsible for completing the reading assigned from the textbook related to the covered topics and for checking email regularly for important information and announcements related to the course. • University policy on academic honesty concerning exams and individual work will be strictly enforced.			

	Date/Day		Textbook/Assignments
Week	(Tentative)	Topics	
1	12.02.22 12.02.22	Rates of Change and Tangents to CurvesLimit of a Function and Limit Laws	[1] Ch.2.1, 2.2
2	19.02.22 19.02.22	The Precise Definition of a LimitPractice	[1] Ch. 2.3
3	26.02.22 26.02.22	One-Sided LimitsContinuity	[1] Ch. 2.4, 2.5
4	05.03.22 05.03.22	Limits Involving Infinity; Asymptotes of GraphsTangents and the Derivative at a Point	[1] Ch. 2.6, 3.1,
5	12.03.22 12.03.22	The Derivative as a FunctionDifferentiation Rules	[1] Ch. 3.2, 3.3 Quiz 1 (6 pts)
6	19.03.22 19.03.22	 The Derivative as a Rate of Change Derivatives of Trigonometric Functions 	[1] Ch. 3.4, 3.5
7	26.03.22 26.03.22	Novruz holiday	
8	02.04.22 02.04.22	 The Chain Rule Implicit Differentiation Derivatives of Inverse Functions and Logarithms 	[1] Ch. 3.6, 3.7, 3.8
9	09.04.22 09.04.22	 Midterm Exam Inverse Trigonometric Functions 	[1] Ch. 3.9
10	16.04.22 16.04.22	 Systems of linear equations: Basic Concepts, Gaussian Elimination, Homogeneous Systems of Linear Equations Matrices: Basic definitions, Matrix operations, Types of matrices, Kronecker Delta Symbol, Properties of Matrix Operations 	[2] p. 43-53 [2] p. 7-19
11	23.04.22 23.04.22	Determinants: Permutations and Transpositions, Determinant General Definition, Properties of Determinants	Quiz-2 (7 pts) [2] p. 20-30
12	30.04.22 30.04.22	Determinant CalculationPractice	[2] p. 31-35
13	07.05.22 07.05.22	• Inverse matrices: Three Lemmas, Theorem of Inverse Matrix, Calculation of Inverse Matrices by ElementaryTransformations	[2] p. 36-42
14	14.05.22 14.05.22	Matrix RankProblem solving	Quiz-3 (7 pts) [2] p. 43-53
15	21.05.22 21.05.22	Cramer's Rule, Cramer's General RuleProblem solving	[2] p.54-59
16	28.05.22 28.05.22	Holiday	
	TBA	Final Exam	