



HANYANG UNIVERSITY

Hanyang International Summer School

Faculty Information	Name		Kijung Yoon				
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Course Information	Class No.	18063	Course Code	MAT2003	Credits	3	
	Course Name	Linear Algebra					
	Lecture Schedule	Mon-Thu / 09:00 – 12:00 AM					
	Course Description	This course provides a complete introduction to linear algebra. It covers the basics of solving systems of linear equations in the beginning, and deeper understanding is developed by examination of matrix factorizations, orthogonality, and vector spaces. Least squares problems, eigenvalue problems, the singular value decomposition and principal component analysis will also be studied as fundamental tools for solving data-driven problems.					
	Course Objective	The goal for this course is to understand key computations and some of the ideas behind matrix theory and linear algebra.					
	Prerequisite	No prerequisite					
	Materials/Textbooks	Lecture Slides will be provided. Introduction to Linear Algebra (5th Ed) by Gilbert Strang					
Evaluation	Attendance	5%	Quiz	0%			
	Assignment	20%	Mid-term Exam	35%			
	Presentation	0%	Final Exam	40%			
	Group Project	0%	Participation	0%			
	Etc.	Evaluation Item			Ratio		
					%		
			%				
Daily Lecture Plan	Week 1	Day 1	Opening Ceremony				
		Day 2	Matrix multiplication				
		Day 3	Linear equations				
		Day 4	Matrix inverses				
	Week	Day 1	LU Factorization				



	2	Day 2	Eigenvalues & Eigenvectors
		Day 3	Vector space
		Day 4	Independence
	Week 3	Day 1	Midterm exam
		Day 2	Least squares problem
		Day 3	QR factorization
		Day 4	Determinants
	Week 4	Day 1	Diagonalization
		Day 2	Spectral theorem
		Day 3	Singular value decomposition
		Day 4	Final exam