



HANYANG UNIVERSITY

Hanyang International Summer School

Faculty Information	Name	Kijung Yoon				
	E-mail	kiyoon@hanyang.ac.kr				
	Home University	Hanyang University				
	Department	Electronic Engineering				
	Homepage	https://yoonlab.hanyang.ac.kr				
Course Information	Class No.	TBA	Course Code	MAT2003	Credits	3
	Course Name	Linear Algebra				
	Lecture Schedule	Mon-Thu / 09:00am – 12:00pm				
	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	Introduction to matrix and vector			
		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