



HANYANG UNIVERSITY

Hanyang International Summer School

Faculty Information	Name	Jun Moon					
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	Home University	College of Engineering					
	Department	Department of Electrical Engineering					
	Homepage	https://junmoony.github.io/					
Course Information	Class No.	18038	Course Code	MAT3008	Credits	3	
	Course Name	Numerical Analysis					
	Lecture Schedule	Tue-Fri / 13:00-16:00					
	Course Description	This course focuses on basic techniques for the efficient numerical solution of problems in science and engineering. Topics include Fourier series, fixed point, root finding, interpolation, approximation of functions, integration, differential equations, direct and iterative methods in linear algebra.					
	Course Objective	The course objective is to learn numerical approaches for computation and solving of mathematical equations. We will study various numerical approaches to solve Fourier series, fixed point, root finding, interpolation, approximation of functions, integration, linear and nonlinear equations and differential equations.					
	Prerequisite	- Engineering mathematics					
	Materials/Textbooks	Lecture slides by Jun Moon					
Evaluation	Attendance	10%	Quiz	%			
	Assignment	%	Mid-term Exam	25%			
	Presentation	%	Final Exam	25%			
	Group Project	%	Participation	%			
	Etc.	Evaluation Item			Ratio		
		Programming assignment			40%		
			%				
Daily Lecture Plan	Week 1	Day 1	Course Introduction				
		Day 2	MATLAB / Python				
		Day 3	Nonlinear equations				
		Day 4	Nonlinear equations / Interpolation and polynomial approximation				



	Week 2	Day 1	Interpolation and polynomial approximation
		Day 2	Curve fitting
		Day 3	Review
		Day 4	Midterm
	Week 3	Day 1	Linear equations
		Day 2	Linear equations / Numerical differentiation and integration
		Day 3	Periodic signal and Fourier series
		Day 4	Differential equations
	Week 4	Day 1	Differential equations
		Day 2	Review
		Day 3	Final
		Day 4	Graduation