



HANYANG UNIVERSITY

Hanyang International Summer School

Faculty Information	Name					
	E-mail					
	Home University					
	Department					
	Homepage					
Course Information	Class No.		Course Code	MAT3008	Credits	3
	Course Name	Numerical Analysis				
	Lecture Schedule	Tue-Fri /				
	Course Description	Theory and practice of computational procedures including (1)finding an approximated solution of a function, (2)approximation of functions by interpolating polynomials, (3)numerical differentiation and integration, (4)finding a solution of system of equations with using theories in linear algebra				
	Course Objective	Study and practices in finding an approximated solution of a function, approximation of functions by interpolating polynomials, numerical differentiation and integration, and finding a solution of system of equations with using theories in linear algebra				
	Prerequisite	- Calculus I and II, and Linear Algebra				
	Materials/Textbooks	Numerical Methods : Faires/Burden				
Evaluation	Attendance	10%	Quiz	%		
	Assignment	%	Mid-term Exam	60%		
	Presentation	%	Final Exam	30%		
	Group Project	%	Participation	%		
	Etc.	Evaluation Item			Ratio	
			%			
			%			
Daily Lecture Plan	Week 1	Day 1	Opening Ceremony			
		Day 2	Introduction of the course, Review of Calculus.			
		Day 3	Bisection method, Fixed point method, Newton method			
		Day 4	Secant method, Error Analysis			
	Week 2	Day 1	Interpolation, Lagrange polynomial			
		Day 2	Exam1			
		Day 3	Divided difference			
		Day 4	Hermite Interpolation, Cubic Spline			
	Week	Day 1	Numerical differentiation			



	3		
		Day 2	Elements of numerical integrations
		Day 3	Exam2
		Day 4	Composite numerical integrations, Romberg algorithm
	Week 4	Day 1	Systems of linear equations, pivoting, review of linear algebra
		Day 2	Iterative Techniques for solving Linear systems
		Day 3	Final exam
		Day 4	Review exam2 and Final