



HANYANG UNIVERSITY

Hanyang International Summer School

Faculty Information	Name	JungHwan Song					
	E-mail	camp123@hanyang.ac.kr					
	Home University	Hanyang University					
	Department	Mathematics					
	Homepage						
Course Information	Class No.	18075	Course Code	MAT3008	Credits	3	
	Course Name	Numerical Analysis					
	Lecture Schedule	Mon-Thu /9:00~12:00 AM					
	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