



HANYANG UNIVERSITY

Hanyang International Summer School

Office of International Affairs, Hanyang University
 222 Wangsimni-ro, Seongdong-gu, Seoul, 04763, Korea
 Tel. +82-2-2220-2456 | iss@hanyang.ac.kr

2018 HISS Course Syllabus

Name:	Numerical Analysis	Professor:	JungHwan Song
		E-mail:	camp123@hanyang.ac.kr
		Home Univ.:	Hanyang University
		Dept.:	Mathematics

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
--------------	---

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
Preparations:	[Numerical Methods : Faires/Burden] [pre requisites : Calculus I and II, and Linear Algebra]

Schedule:	Week 1	1. Introduction of the course, Review of Calculus. 2. Bisection method, Fixed point method 3. Newton method
	Week 2	1. Secant method, Error Analysis 2. Exam1 3. Interpolation and Lagrange polynomial 4. Divided difference, Hermite Interpolation
	Week 3	1. Cubic Spline 2. Numerical differentiation 3. Exam2 4. Elements of numerical integrations
	Week 4	1. Composite numerical integrations, Romberg algorithm 2. Systems of linear equations, pivoting. 3. Iterative Techniques for solving Linear systems Final exam

Evaluation:	Two Midterms (60%)	Final (30%)	Attendance (10%)	Assignments (0%)	Participation (0%)	Etc. (0%)
-------------	--------------------	-------------	------------------	------------------	--------------------	-----------

