



HANYANG UNIVERSITY

2019 HISS Syllabus (Numerical Analysis)

Professor:	JungHwan Song
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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
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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:	Midterm (%)	Final (%)	Attendance (%)	Assignments (%)	Participation (%)	Etc. (%)
	60	30	10	00	00	00

Hanyang International Summer School

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