



HANYANG UNIVERSITY

2018 HISS Syllabus

[Numerical Methods for Engineers]

Professor: **Se-Jin Yook**
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Home Univ.: Hanyang University
Dept.: School of Mechanical Engineering

Description: This course will cover the basic numerical analysis techniques including root finding, integration, differential equation, partial differential equation, matrix, etc. This course involves a significant amount of programming assignments to improve students' programming skills. This course is designed mainly for mechanical engineering major students. **This course is designed mainly for mechanical engineering major students.**

Objective: - To solve mathematical and engineering problems by numerical methods
- To improve students' programming skills

Preparations: Prerequisite courses are Computer Programming, and Engineering Mathematics

Schedule:	Week 1	Introduction, Mathematical modeling and engineering problem-solving, Computers and software, Round-off errors and truncation errors
	Week 2	Roots of equations: Bracketing methods, Roots of equations: Open methods, Linear algebraic equations
	Week 3	Gauss elimination, LU decomposition, Interpolation, Least-squares regression
	Week 4	Numerical differentiation and integration, Ordinary differential equations: One-step methods, Ordinary differential equations: Multi-step methods

Evaluation:	Midterm (%)	Final (%)	Attendance (%)	Assignments (%)	Participation (%)	Etc. (%)
	45	45	10	00	00	00

Hanyang International Summer School

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