Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF325	Numerical Analysis	6	3	0	0	3	4

Prerequisites	ING207
Admission Requirements	ING207

Language of Instruction	Turkish
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	This is an obligatory course which offers an introduction to numerical analysis to Computer Engineering students. The goal is to present to solution techniques used numerical analysis problems. The students who accomplish this course, will have a basis understanding of numerical algorithms and skill to implement algorithms. Hence, students who take this course will be able to develop numerical solution approaches for various problems. In summary the objective of this course are as follows: To describe the numerical analysis problems. To understand the context and difficulty of the numerical analysis problems. To have knowledge about solution procedures used in numerical analysis. To have the ability to implement algorithms for solving complex numerical analysis problems.
Content	W 1 : Introduction to analysis W 2 : Introduction to programming with MATLAB W 3 : Solution of nonlinear equations W 4 : Newton and Bisection Methods W 5 : Solution of the linear equation systems W 6 : LU factorization W 7 : Jacobi & Gauss-Seidel Iterative Approaches W 8 : Curve fitting and interpolation W 9 : Least square method W 10 : Midterm W 11 : Numerical Derivation W 12 : Taylor series expansion W 13 : Numerical integration W 14 : Trapezoidal & Simpson Methods
References	Gilat, A. and Subramaniam,V.,2008, Numerical Methods for Engineers and Scientists: An introduction with applications using MATLAB

Theory Topics

Week	Weekly Contents
1	Introduction to analysis
2	Introduction to programming with MATLAB
3	Solution of nonlinear equations
4	Newton and Bisection Methods
5	Solution of the linear equation systems
6	LU factorization
7	Jacobi & Gauss-Seidel Iterative Approaches
8	Curve fitting and interpolation
9	Least square method
10	Midterm
11	Numerical Derivation
12	Taylor series expansion
13	Numerical integration
14	Trapezoidal & Simpson Methods