Advanced Numerical Analysis

First term 1397-98 (Fall 2018)

Code: 24-14-603-01   **Credit: 3**

Lecturer: **Hassan Azarkish**
Assistant Professor, Mechanical Engineering Department
Hassan.Azarkish@eng.usb.ac.ir

Assessments: Homework (20%)
Midterm exam (30%)
Final exam (50%)

References:
- Numerical Analysis (Richard L. Burden, J. Douglas Faires)
- Applied Numerical Methods with MATLAB for Engineers and Scientists (Steven C. Chapra)
- Numerical Methods Using MATLAB (G. R. Lindfield, J. Penny)

Weeks	Subjects
1st - 2^{ed}	Programming with MATLAB
3rd - 4th	Solution of Equations in One Variable
5th	Iterative Techniques in Matrix Algebra
6th - 7th	Numerical Differentiation and Integration
8th - 9th	Initial-Value Problems for Ordinary Differential Equations
10th -11th	Numerical Solutions to Partial-Differential Equations
12th -13th	Boundary-Value Problems for Ordinary Differential Equations
14th -15th	Numerical Solutions of Nonlinear Systems of Equations
16th	Interpolation and Polynomial Approximation