Jordan University of Science and Technology
Faculty of Science & Arts
Basic Sciences And Humanities Department

HSS221MATH Numerical Analysis
First Semester 2023-2024

Course Catalog
2 Credit Hours. Basic skills in numerical methods such, as solving linear and non-linear equations and their systems numerically, numerical differentiation and ntegration, solving ordinary differential equations and their systems numerically, error calculations, curve fitting, and interpolation.

Text Book	
Title	Numerical Methods Using Matlab
Author(s)	John H. Mathews, Kurtis D. Fink
Edition	3rd Edition
Short Name	Textbook
Other Information	Slides of the text book

Instructor	
Name	**Anwar Almomani**
Office Location	-
Office Hours	Sun : 11:30 - 12:30 Tue : 11:30 - 12:30
Email	adalmomani@just.edu.jo

Class Schedule & Room

Section 1:
  Lecture Time: Sun, Tue : 12:30 - 13:30
  Room: NG56

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2, 3	The Solution of Nonlinear Equations f(x)=0	**Slides** From **Textbook**
Weeks 4, 5	The Solution of Linear System AX=B	**Slides** From **Textbook**
Week 6	1)The Solution of Linear System AX=B // 2) Interpolation and Polynomial Approximation	**Slides** From **Textbook**
Weeks 7, 8	Interpolation and Polynomial Approximation.	**Slides** From **Textbook**
Weeks 9, 10	Curve Fitting: Least Square approximation.	**Slides** From **Textbook**
Weeks 11, 12, 13	Numerical Differentiation.	**Slides** From **Textbook**
Weeks 14, 15, 16	Numerical Integration.	**Slides** From **Textbook**
Week 16	Review	**Slides** From **Textbook**

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
To be able to approximate roots of nonlinear equations using different methods. [25SLO1]	25%	
To be able to solve different types of linear systems of equations. [25SLO2]	25%	
To be able to find a function that approximates a given discrete data or continuous function using least square sense. [25SLO3]	25%	
To be able to evaluate integrals and derivatives numerically. [25SLO1]	25%	

Relationship to Program Student Outcomes (Out of 100%)					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
50	25	25			

Evaluation	
Assessment Tool	**Weight**
First Exam	30%
Second Exam	30%
Final Exam	40%