Jordan University of Science and Technology
Faculty of Computer & Information Technology
Computer Engineering Department

CPE200 Numerical Analysis
First Semester 2020-2021

Course Catalog
2 Credit Hours. Prerequisite: MATH 201+MATH 203 + CS 113 Basic skills of numerical methods such, Solving linear and non-linear equations and their systems numerically, numerical differentiation and integration, solving ordinary differential equations and their systems numerically, error calculations, curve fitting and interpolation. Students will be exposed to some special software related to numerical methods.

Text Book	
Title	Numerical Methods Using Matlab
Author(s)	John H. Mathews, Kurtis D. Fink
Edition	3rd Edition
Short Name	Ref#1
Other Information	

Instructor	
Name	**Dr. Rami Al Na"Mneh**
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Instructor	
Name	**Mrs. Shatha Al Hasan**
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Class Schedule & Room

Section 1:
  Lecture Time: Sun : 08:30 - 09:30
  Room: منصة الكترونية

Section 2:
  Lecture Time: Sun : 08:30 - 09:30
  Room: منصة الكترونية

Section 3:
  Lecture Time: Mon : 08:30 - 09:30
  Room: منصة الكترونية

Section 4:
  Lecture Time: Mon : 13:00 - 14:00
  Room: منصة الكترونية

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
1731130	CS113 Object-Oriented Programming Lab	Prerequisite / Study
902030	MATH203 Ordinary Differential Equations	Prerequisite / Study
902010	MATH201 Intermediate Analysis	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3	The Solution of Nonlinear Equations f(x)=0	**Chapter 2** From **Ref#1**
Weeks 4, 5, 6	The Solution of Linear System AX=B	**Chapter 3** From **Ref#1**
Weeks 6, 7, 8	Interpolation and Polynomial Approximation	**Chapter 4** From **Ref#1**
Weeks 9, 10	Curve Fitting	From **Ref#1**
Weeks 11, 12, 13	Numerical Differentiation	**Chapter 6** From **Ref#1**
Weeks 14, 15, 16	Numerical Integration	**Chapter 7** From **Ref#1**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Develop, test and evaluate numerical algorithms for solving linear and nonlinear equations [1SO1]	35%	
Develop, test and evaluate numerical algorithms for d approximating functions using various curve fitting methods. [1SO1]	25%	
Develop, test and evaluate numerical algorithms for numerical differentiation and integration [1SO1]	25%	

Implement, test and evaluate numerical algorithms using programming skills. [1SO1, 1SO2, 1SO6]	15%	

Relationship to Program Student Outcomes (Out of 100%)																
A	B	C	D	E	F	G	H	I	J	K	SO1	SO2	SO3	SO4	SO5	SO6	SO7
											90	5				5	

Evaluation	
Assessment Tool	**Weight**
Final	50%
Assignments, quizzes and Exams	50%

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