Republic of Iraq
The Ministry of Higher Education & Scientific Research

University:Kufa
College:Education for Girls
Department:Computers
Stage:4rd
Lecturer name:Rusul Hassan and Wafaa Hadi
Academic Status:Architecture
Qualification:Computer Msc
Place of work:Najaf

Course
Weekly Outline

Course Instructor	**Rusul Hassan Naser , Wafaa Hadi Hanoon**				
E_mail	rusulh.nasir@uokufa.edu.iq , wafaah.hannon@uokufa.edu.iq				
Title	Numerical analysis, differential equations				
Course Coordinator					
Course Objective	• Key issues in simulation include acquisition of valid source information about the relevant selection of key characteristics and behaviours, the use of simplifying approximations and assumptions within the simulation, and fidelity and validity of the simulation outcomes.				
Course Description	**Introduction to simulation , Simulation Study Methods , Random number generation: Mid – Square method , Mid-Product method , Fibonacci method , Linear Congruential method, Random number test: Frequency Tests , Kolmogorov –Smirnov test , Chi-square test , Linear Equation Simulation :Test Linear Equations , Non-linear equation simulation: Test non-linear equation, Monto-Karlow method, Dynamic Simulation, Programming of Dynamic models, Simulations Languages**				
Textbook					
References	• **Avrill M. Law and W. David Kelton "Simulation Modelling and Analysis"McGraw-Hill, 1991. .** • **Meenakshi Sundaram K, Santhanam T,Saroja M, and Sumathi C P, "Minimizing redundancy in the retrieval of records from question bank using mid-product method", *Proceedings of the nternational Conference on Emerging Trends in Computing*, Kamarajar College of Engineering and Technology, Virudhunagar, India, Jan 8-10, 2009, pp69-72.** • **Meenakshi Sundaram.K, Santhanam.T, Saroja. M and Sumathi C.P., "A Performance Analysis of Modified Mid-Square and Mid-Product Techniques to Minimize the Redundancy for Retrieval of Database Records", *Journal of Computer Science*, Science Publications, USA, Vol.6(4), ISSN 1549-3636, 2010, pp.386-391.**				
Course Assessment	Term Tests	Laboratory	Quizzes	Project	Final Exam
	(40%)		(10%)	----	As (50%)
General Notes					

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Course weekly Outline

week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Introduction to simulation	Introduction to Matlab	
2		Method of Decisions	Using loop and condition statements in Matlab	
3		Simulation Study Methods	Using loop and condition statements in Excel	
4		Simulation Models	Applied programming in Matlab and Excel	
5		Random number generation	Programming of Mid – Square method	
6		Mid – Square method	Applied Examples in Matlab and Excel	
7		Mid-Product method	Programming of Mid-Product method	
8		Fibonacci method	Applied Examples in Matlab and Excel	
8		Linear Congruential method	Programming of Fibonacci method	
9		Random number test	Applied Examples in Matlab and Excel	
10		Frequency Tests	Programming of Congruential method	
11		Kolmogorov –Smirnov test	Applied Examples in Matlab and Excel	
12		Applied examples	Programming of Kolmogorov –Smirov test	
13		Chi-square test	Applied Examples in Matlab and Excel	
14		Applied examples	Programming of Chi - square tes	
15		Linear Equation Simulation	Applied Examples in Matlab and Excel	
16		Test Linear Equations	Programming of Linear Equations	
17		Applied Examples	Applied Examples in Matlab and Excel	
18		Computer programming of linear equations	Programming of non - linear Equations	
19		Non-linear equation simulation	Applied Examples in Matlab and Excel	

20		**Test non-linear equation**	**Programming of Dynamic models**	
21		**Applied examples**	**Applied Examples in Matlab and Excel**	
22		**Computer programming of non-linear equations**	**Programming of Monto-Karlow method**	
23		**Monto-Karlow method**	**Applied Examples in Matlab**	
24		**Applied Examples**	**Applied Examples in Matlab**	
25		**Dynamic Simulation**	**Applied Examples in Excel**	
26		**Programming of Dynamic models**	**Applied Examples in Excel**	
27		**Simulations Languages**	**Exercises in Monto-Karlow method**	
28		**Training with Excel Examples(1)**	**Exam in Monto-Karlow method**	
29		**Final Exam**	**Final Exam**	

Instructor Signature: **Dean Signature:**