

Sub.	Course Description – توصيف مقرر دراسي	الموضوع	 كليات المعرفة ALMAAREFA COLLEGES
Date		التاريخ	

Course Code & No	IE420		رقم المقرر ورمزه
Course Name	Industrial System Simulation		اسم المقرر
Credit Hours	3 (2+1+2)		عدد الساعات المعتمدة
Pre-requisite	IE-322		المتطلب السابق

General Description	توصيف عام
Introduction to the concept of simulation including modeling and simulation languages; Appropriate inputs to a simulation model, and random number generation; Analysis of the output from a simulation model; Validation of the simulation model.	

Course Objectives	أهداف المقرر
The main purpose of the course is to provide the students with the ability to analyze problems by using simulation models and simulation languages.	
<p>By the end of the course, each student should be able to</p> <ul style="list-style-type: none"> • Identify and Recognize the basic concepts of simulations • Recognize the procedures and methods to model an industrial system • Collect, analyse, and prepare parameters data of the industrial system • Develop simulation model using software Arena • Compose simulation process using Arena • Analyse, interpret, and judge result data from simulation. 	

Sub.	Course Description – توصيف مقرر دراسي	الموضوع	 كليات المعرفة ALMAAREFA COLLEGES
Date		التاريخ	

Course Outlines	مفردات المقرر
<ul style="list-style-type: none"> • Introduction • Fundamental simulation concepts • Guided Tour Through Arena • MODELING BASIC OPERATIONS AND INPUTS • Review of basic Probability and statistics • Input data modelling • Random number generation • Modelling detailed operations • Statistical analysis of output from terminating simulations • Variance Reduction Techniques • Design of experiments • Conducting Simulation Studies • Project Presentations 	

References	المراجع
<p>Required Textbooks</p> <ul style="list-style-type: none"> • Kelton, W. D., Sadowski, R. P., and Swets, N.B., Simulation with Arena, 5th edition McGraw Hill, latest edition. • Law, A.M. Simulation Modeling and , edition. McGraw Hill International Ed. <p>Essential References Materials</p> <ul style="list-style-type: none"> • Jerry Banks; John S. Carson II; Barry L. Nelson; David M. Nicol, Discrete-Event System Simulation, 5th edition, latest edition 	