



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

Course Code & No	IE452		رقم المقرر ورمزه
Course Name	Manufacturing System Analysis		اسم المقرر
Credit Hours	3 (3+1+1)		عدد الساعات المعتمدة
Pre-requisite	IE 302, IE 312		المتطلب السابق

General Description	توصيف عام
Definition and classification of manufacturing systems; Manufacturing automation fundamentals; Manufacturing Metrics and Economics; Single-Station Manufacturing Cells; Group technology and design of manufacturing cells. Modeling of Manufacturing Systems: Analytical Models, IDEF0, IDEF1X, Petri Nets; High volume manufacturing systems design and analysis; Flexible manufacturing design and analysis; Automated inspection performance analysis	

Course Objectives	أهداف المقرر
<p>This course is designed to provide a definition and classification of manufacturing systems. It gives the principles of designing, modelling, and evaluating the performance of various types of manufacturing systems.</p> <p>By the end of the course, each student should be able to</p> <ul style="list-style-type: none"> • Recognize automation Fundamental: Manufacturing functions for automation, automation strategies • Analyze of manufacturing systems performance measures (Metrics and Economics) • Design and analysis of Single-Station manufacturing Cells • Develop models of manufacturing systems: using IDFX0 and IDFX1, Analytical models, simulation models, and Petri net models • Design high volume manufacturing systems: such as Automated flow line, Automated assembly line • Design of flexible manufacturing systems (FMS): group technology, planning, design & performance analysis 	

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Course Outlines	مفردات المقرر
<ul style="list-style-type: none"> • This course is designed to provide a definition and classification of manufacturing systems. It gives the principles of designing, modelling, and evaluating the performance of various types of manufacturing systems . • • By the end of the course, each student should be able to • Recognize automation Fundamental: Manufacturing functions for automation, automation strategies • Analyze of manufacturing systems performance measures (Metrics and Economics) • Design and analysis of Single-Station manufacturing Cells • Develop models of manufacturing systems: using IDFX0 and IDFX1, Analytical models, simulation models, and Petri net models • Design high volume manufacturing systems: such as Automated flow line, Automated assembly line • Design of flexible manufacturing systems (FMS): group technology, planning, design & performance analysis 	

References	المراجع
<p>Required Textbooks</p> <ul style="list-style-type: none"> • Production System, and Computer Integrated Manufacturing, Groover, M.P. Automation, Prentice Hall., latest edition • Modeling and Analysis of Manufacturing Systems, Askin, R.G. & Standridge, C.R., John Wiley & Sons. latest edition <p>Essential References Materials</p> <ul style="list-style-type: none"> • Production System, and Computer Integrated Manufacturing, Groover, M.P. Automation, Prentice Hall., latest edition • Modeling and Analysis of Manufacturing Systems, Askin, R.G. & Standridge, C.R., John Wiley & Sons. latest edition 	