



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

Course Code & No	IE343		رقم المقرر ورمزه
Course Name	Manufacturing Processes – I		اسم المقرر
Credit Hours	3 (3+1+1)		عدد الساعات المعتمدة
Pre-requisite	IE-341, IE-342		المتطلب السابق

General Description	توصيف عام
Engineering materials processing parameters that influence design considerations, product quality and production costs; Definition of stress, strain and mechanical properties of materials applied to metal forming processes; sheet metal forming, processes (deep drawing, stretch shearing and bending); bulk forming processes (forging, rolling, extrusion and wire drawing); basic casting techniques; Welding processes.	

Course Objectives	أهداف المقرر
To gain detailed knowledge of basic manufacturing processes such as casting, welding, bulk forming and sheet metal forming	
<p>By the end of the course, each student should be able to</p> <ul style="list-style-type: none"> Recognize engineering processing parameters that influence design considerations Understand the effect of manufacturing processes on product quality and production costs Define and calculate stress, strain and mechanical properties of materials applied to metal forming processes Analyze and design Sheet metal forming, processes, Bulk forming processes, Casting processes, and Joining Processes 	

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

Course Outlines	مفردات المقرر
<ul style="list-style-type: none"> • Introduction • Engineering processing parameters that influence design considerations • Product quality and production costs • Definition of stress, strain and mechanical properties of materials applied to metal forming processes • Sheet metal forming, processes (deep drawing, stretch shearing, ironing, stamping, and bending) • Bulk forming processes (forging, rolling, extrusion and wire drawing) • Basic casting techniques • Joining Processes (Welding) 	

References	المراجع
<p>Required Textbooks</p> <ul style="list-style-type: none"> • Manufacturing Processes for Engineering Materials by S. Kalpakjian and S.R. Schmid, latest edition • Manufacturing Engineering and Technology, by S. Kalpakjian and S.R. Schmid, latest edition <p>Essential References Materials</p> <ul style="list-style-type: none"> • Azapagic, A., A. Emsley, and I. Hamerton, Polymers, the Environment and Sustainable Development, Wiley, West Sussex, UK, latest edition • ASM Handbook, Vol. 8 Mechanical Testing and Evaluation, ASM International, Materials Park, OH, latest edition 	