



AL IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY
COLLEGE OF ENGINEERING
Department of Mechanical Engineering

Course Information	
Course Code and Name:	ME 469 Special Topics in Manufacturing Engineering and Safety
Credit Hours:	3 (3 Lecture + 1 Tutorial)
Prerequisites:	ME 216 Mechanics of Materials, ME 363 Manufacturing Technology

Course Description
Introduction to structure-based deformation behavior of materials, mechanical testing to obtain properties, stress and strain relationships in two and three-dimensional elastic problems, introduction to fracture mechanics, mechanical and manufacturing aspects of extrusion and sheet metal forming, material selection criteria in design, and factor of safety.

Textbook			
Title	Mechanical Behavior of Materials: Engineering Methods for Deformation, Fracture, and Fatigue		
Authors	Norman E. Dowling		
Publisher	Prentice Hall	Year and Edition	2012, 4th edition

Course Contents
Introduction to the course
Structure and deformation in materials
Mechanical testing
Stress-strain relationship and deformation behavior
Introduction to fracture mechanics
Extrusion process
Sheet metal forming
Material selection in design
Factor of safety

Academic Coordinator Prof. Dr. Sabbah Ataya	Signature <i>S. Ataya</i>
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