

**DEPARTMENT OF INDUSTRIAL ENGINEERING
COURSE SYLLABUS**

<i>COURSE TITLE</i>	<i>ENGLISH CODE/NO</i>	<i>ARABIC CODE/NO.</i>	<i>CREDITS</i>			
			<i>Th.</i>	<i>Pr.</i>	<i>Tr.</i>	<i>Total</i>
Material Handling and Packaging	IE 455	هـ ص ٤٥٥	3	1	-	3
<i>Pre-requisites:</i>	IE 255, IE 331					
<i>Course Role in Curriculum</i>	<i>Required or Elective:</i>		Elective			
<i>Catalogue Description:</i> Historical development of material handling and packaging. Objectives and principles of material handling. Material handling concepts: unit load, containerization, ASRS. Types of material handling equipment and their economics. Role of packaging in material handling. Areas of special importance to packaging. Package design. Economics of packaging. Package research and testing. Management of the packaging function.						
<u>Textbooks:</u>						
<ul style="list-style-type: none"> • MATERIAL HANDLING, Raymond A. Kulwiec, (1985), John Wiley, New Jersey. • FUNDAMENTALS OF PACKAGING TECHNOLOGY, Klalter Soroka, Richard Warrington, (1995) 						
<u>References:</u>						
<ul style="list-style-type: none"> • MATERIALS HANDLING EQUIPMENT, N. Rudenko, (1969), Mir Publications, Moscow 						
<u>Supplemental Materials:</u>						
<u>Course Learning Outcomes:</u>						
<i>By the completion of the course the student should be able to:</i>						
<ol style="list-style-type: none"> 1. Learn fundamental principles of material handling systems. 2. Develop understanding of special concepts in material handling. 3. Learn analytical procedures for the study of different material handling equipment. 4. Learn fundamental principles of packaging. 5. Improve presentation and team work skills. 						
<u>Topics to be Covered:</u>						<u>Duration in Weeks</u>
1	Basis for material handling analysis					1
2	Principles of material handling					2
3	The unit load concept					1
4	Packaging principles					2

5	Materials used for Packaging	2.5
6	Equipment selection Procedure	2
7	Material handling cost concepts	2
8	Storage and Warehousing	1.5

Student Outcomes addressed by the course: (Put a \checkmark sign)

(a)	an ability to apply knowledge of mathematics, science, and engineering	\checkmark
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	
(d)	an ability to function on multidisciplinary teams	\checkmark
(e)	an ability to identify, formulate, and solve engineering problems	\checkmark
(f)	an understanding of professional and ethical responsibility	
(g)	an ability to communicate effectively	\checkmark
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	a recognition of the need for, and an ability to engage in life-long learning	\checkmark
(j)	a knowledge of contemporary issues	
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	

Key Student Outcomes assessed in the course: () and ()

Instructor or course coordinator: Dr. Mohammed Abdullah Balubaid

Last updated: Jan. 2014