

**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>
<b>Production Planning and Control</b>	<b>IE 451</b>	هـ ص ٤٥١	3	2		3
<i>Pre-requisites:</i>	IE 351					
<i>Course Role in Curriculum</i>	<i>Required or Elective:</i>		Required Core Course			
<i>Catalogue Description:</i> Basic concepts of Production and Operations Management (POM). Design of products and services. Processes and technologies. E-commerce and operations management. Inventory management. Supply-Chain management. Just-in-time and lean production. Forecasting. Material Requirements Planning (MRP). Introduction to Enterprise Requirement Planning (ERP). Capacity and Aggregate planning. Scheduling.						

**Textbooks:**

Heizer J., and Render B., Principles of Operations Management, Eighth Edition, Prentice Hall

**Supplemental Materials:**

Course Notes: First day materials, Course projects, Guide to assignments

**Course Learning Outcomes:**

*By the completion of the course the student should be able to:*

1. Understanding how to manage the production function.
2. Understand some standard tools techniques used by production or operation managers.
3. Design of products and services, techniques from improving design process.
4. Develop an appreciation for interaction of this management activity with other management systems within the organization.
5. Use computer software to solve production managerial problems.
6. Determine the optimal capacity and product availability.
7. Solve real case studies.
8. Work in group to solve homework and projects.

<b><u>Topics to be Covered:</u></b>		<b><u>Duration in Weeks</u></b>
1	Introduction to Production Planning and Control	1
2	Demand Forecasting	4
3	Aggregate Production Planning	3
4	Inventory Management System	2
5	Material Requirement Planning (MRP)	1
6	Operation Scheduling	2
7	Supply Chain Management	1
8	Measuring Manufacturing Systems Complexity	3

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

(a)	an ability to apply knowledge of mathematics, science, and engineering	
(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	$\checkmark$
(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.	$\checkmark$

**Key Student Outcomes assessed in the course:** ( i ) and ( k )

***Instructor or course coordinator:*** Dr. Rami Alamoudi

***Last updated:*** February 2015