

**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>Maintenance and Replacement Policies</b>	<b>IE 452</b>	حص ٤٥٢	3	1	-	3
<i>Pre-requisites:</i>	IE 332, IE 351					
<i>Course Role in Curriculum</i>	<i>Required or Elective:</i>		Elective			
<i>Catalogue Description:</i> Maintenance systems. Maintenance operation and control. Preventive Maintenance: concepts, modeling, and analysis. Maintenance planning and scheduling. Maintenance material control. Computerized Maintenance Management Systems. Replacement studies. Case studies						
<i>Textbooks:</i> <b>PLANNING &amp; CONTROL OF MAINTENANCE SYSTEMS</b> , Duffuaa, S. O., Raouf, A. and Campbell, J. D., (1999), Modeling and Analysis, John Wiley & Sons, New York, USA., ISBN: 0-471-17981-7						
<i>References:</i> <ul style="list-style-type: none"> <li>• <b>STRATEGIES FOR EXCELLENCE IN MAINTENANCE MANAGEMENT CAMPBELL</b>, J D, 1995, , Productivity Press, Portland.</li> <li>• <b>GLOSSARY OF GENERAL TERMS IN MAINTENANCE MANAGEMENT: BS 3811</b>, British Standard Institute.</li> <li>• <b>RELIABILITY CENTERED MAINTENANCE</b>, Smith, A M, (1993), McGraw Hill, New York.</li> <li>• <b>MAINTENANCE PLANNING AND SCHEDULING HANDBOOK</b>, Palmer, D, (1999), McGraw Hill, New York.</li> <li>• Class notes/handout material provided by instructor</li> <li>• Web-page for the Course, Group name: mrp2</li> <li>• Group home page: <a href="http://groups.yahoo.com/group/mrp2">http://groups.yahoo.com/group/mrp2</a></li> <li>• Group email: <a href="mailto:mrp2@yahoogroups.com">mrp2@yahoogroups.com</a></li> </ul>						
<i>Supplemental Materials:</i>						
<i>Course Learning Outcomes:</i> <i>By the completion of the course the student should be able to:</i> <ol style="list-style-type: none"> <li>1. Explain maintenance-function as a system.</li> <li>2. Operate and control a maintenance system.</li> <li>3. Explain the mechanism of the breakdown repair.</li> <li>4. Explain and design complete maintenance system based on maintenance planning, scheduling and control, and also demonstrate how to handle and evaluate various computerized maintenance management systems (CMMS s)</li> </ol>						

<b><u>Topics to be Covered:</u></b>		<b><u>Duration in Weeks</u></b>
1	Maintenance systems	2
2	Maintenance operation and control	2
3	Preventive maintenance, concepts, modeling and analysis	2
4	Maintenance planning and scheduling	2
5	Maintenance material control	2
6	Computerized maintenance management systems	2
7	Replacement studies	2
8	Case studies	2

**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	$\checkmark$
(d)	an ability to function on multidisciplinary teams	
(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	
(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:** ( ) and ( )

***Instructor or course coordinator:*** Prof. Said Ali Hassan El-Quliti

***Last updated:*** Jan. 2013