



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

#### Course Information

Course Code and Name:	ME461 Computer Aided Design/Computer Aided Manufacturing
Credit Hours:	3 (3 Lecture + 1 Tutorial)
Prerequisites:	ME363 Manufacturing Technology

#### Course Description

Introduction to Computer Aided Engineering. Solid modeling. Introduction to Finite Element Method. CAD packages. Static linear analysis in one, two, and three dimensions. Steady state thermal analysis. Introduction to non-linear analysis. Optimum design. Computer applications in mechanical design. Automation strategies. Production economics. High volume production systems. Automated flow lines. Assembly and line balancing. Numerical control. NC part programming. DNC, CNC, and adaptive control. Industrial robots. Material handling and storage. Group technology and flexible manufacturing. Quality control and automated inspection. Control systems. Programmable controllers. Computer networks.

#### Textbook

Title	Computer-Aided Manufacturing		
Authors	TC. Chang, RA. Wysk, HP. Wang		
Publisher	Pearson	Year and Edition	2005, 3 <sup>rd</sup> Edition

#### Course Contents

Introduction of computer-Aided Engineering, Computer applications in mechanical design.
Geometric modelling and solid modelling. CAD packages and CAD databases
Rapid prototyping, Production economics
High volume production systems and FMS. Automated flow lines.
Automated assembly and line balancing.
Automated material handling and storage.
Group technology, Computer-aided process planning CAPP
Numerical control and NC part programming. DNC, CNC, and adaptive control.
Industrial robots.
CAQC and automated inspection.
Automated control systems. Programmable controllers, industrial automation sensors, actuators, and motors. Automation computer networks.

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

Official Stamp

