FUTURE UNIVERSITY IN EGYPT جامعة المستقبل

Faculty of Engineering & Technology

Modeling and Simulation

Information :

Course Code :	MAN 380	**Level :**	Undergraduate	**Course Hours :**	2.00- Hours

Department : Department of Mechanical Engineering

Instructor Information :

Title	Name	Office hours
Professor	Hassan Ahmed Ahmed Mohamed Metered	2
Professor	Hassan Ahmed Ahmed Mohamed Metered	2
Assistant Lecturer	Rana Mohamed Abdel Rahman Saleh	4
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Description :

Mathematical models for mechatronics systems for single and multivariable systems; Laplace and state space formulation continuous, discrete and combined system models; Hardware-in-the loop simulation and rapid prototyping of real-time electro-mechanical systems; Matlab, SimMechanics, Simulink are used to build models and virtual prototypes.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Identifybasicappliedand engineeringscience.
2 -	Identify principles in the of design of mechanical components,differentmaterials,andmanufacturingtechnologies in the field of mechanical power engineering and some other engineering disciplines.
3 -	Identify principles in the fieldofdesignoffluidflow, thermodynamics,gasdynamics,turbo-machinery, heattransferengineering and fundamentals of thermal and fluid processes
b.Intellectual Skills: :	
1 -	Definethe mechanical powerengineeringproblems and evaluate designs, processes, and performance and propose improvements.
2 -	Derivedifferentsolutionalternativesfortheengineeringproblems, analyze, interpret data and design experiments to obtain new data, and evaluate the power losses in the fluid transmission lines and networks
3 -	Analyze the performance of the basic types of internal combustion engines, hydraulic machines, fluid power systems, subsystems and various control valves and actuators.
c.Professional and Practical Skills: :	
1 -	Use laboratory, workshop e4quipment and field devices competently and safely.
2 -	Analyze the record data in the laboratory.
3 -	Prepare engineering drawings, computer graphics, and write specialized technical reports.

d.General and Transferable Skills: :	
1 -	Collaborate effectively within multidisciplinary team.
2 -	Share ideas, communicate effectively and work in stressful environmentand within constraints.
3 -	Lead and motivate individuals and work with others according to the rules of the professional Ethics.

Teaching And Learning Methodologies :
Lectures
Tutorial
Class discussions and activities
Homework and self-study

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st Midterm	25.00	6	
2nd Midterm	25.00	11	
Assignmets	10.00	15	
Final Exam	40.00	16	