

Fall 2023

ME 403-101: Mechanical Systems Design I

Harry Kountouras

Follow this and additional works at: <https://digitalcommons.njit.edu/mie-syllabi>

Recommended Citation

Kountouras, Harry, "ME 403-101: Mechanical Systems Design I" (2023). *Mechanical and Industrial Engineering Syllabi*. 440.

<https://digitalcommons.njit.edu/mie-syllabi/440>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Mechanical and Industrial Engineering Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact digitalcommons@njit.edu.

ME-403

Mechanical Systems Design

TEXT: Atila Ertas, Jesse Jones, The Engineering Design Process, John Wiley & Sons, 1996 2 Edition

LAB MANUAL: Engineering Design with SolidWorks 2013, Planchard & Planchard, SDC Publications

WEEK	TOPIC	PROJECT ASSIGNMENTS
1	Introduction/Engineering Design Search on Process/CAE/CAD/CAM/CAE Library Awareness User Skills	Proj #1: MCAE Software Literature Search.
2	Structured and Unstructured Problems	
3	Design Methods	
4	Creative Design/Ideation	Proj #2: Solid Model Design
5	Innovations in Engineering Design	
	EXAM # 1	
6	Design Synthesis/Mathematical Models	
7	Decision Processes/Material Selection	Proj #3: FEA Simulation in Mechanical Systems
8	Decision Support: Selection Problem	
9	Finite Element Analysis/Modeling and Simulation in Mechanical and Thermal/Fluid Systems	Proj #4: FEA Simulation in Thermal Systems
	EXAM #2	
10	Decision Support: Compromise Problem	
11	Optimization Methods in Design: Overview	
12	Optimization/Mathematical Methods	Proj #5: Design Proposal For ME 408
13	Leadership and Professionalism in Engineering/ Engineering Law/Engineering Ethics	
14	FINAL EXAM	