DESIGN ENGINEERING OUTLINE

Module Name	Topics	Learning Outcome	Complexity Level	Session Count	Duration per Session (Hours)	Total Duration (Hours)
DESIGN ENGINEEING	Product Development Steps	• Understand the stages involved in product development from concept to market. • Apply product development methodologies to real-world engineering projects. • Manage resources and timelines effectively throughout the product development lifecycle.	Intermediate	1	2	20
	Design Tools	• Gain proficiency in using design software and tools relevant to engineering disciplines. • Apply design tools effectively to create and analyze engineering designs. • Explore advanced features and techniques in design tools to optimize design processes.	Basic	2	1.5	

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DESIGN ENGINEERING	Concept Development	• Generate and evaluate concepts to address engineering problems or requirements. • Apply creativity and innovation in developing engineering concepts. • Communicate and present conceptual designs effectively to stakeholders.	Intermediate	1	2	
	Design Methodologies	• Understand various design methodologies such as Agile, Lean, or Design Thinking. • Apply appropriate design methodologies to different engineering projects. • Evaluate the effectiveness of design methodologies in achieving project goals.	Advanced	2	1.5	

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DESIGN ENGINEERING	Simulation And Analysis (SW/Ansys)	• Utilize simulation and analysis tools to predict and optimize engineering designs. • Interpret simulation results to make informed design decisions. • Validate designs through simulation and analysis against specified criteria.	Advanced	1	2	
	GD&T	• Understand the principles and application of GD&T in engineering drawings and specifications. • Apply GD&T symbols and conventions accurately to communicate design requirements. • Interpret GD&T annotations and apply them to manufacturing processes.	Advanced	1	1	

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DESIGN ENGINEERING	Project Guidelines And Criteria	• Understand project guidelines and criteria set by clients, stakeholders, or regulatory bodies. • Develop project plans and strategies to meet specified guidelines and criteria. • Monitor and evaluate project progress against established guidelines and criteria.	Intermediate	1	2	
	Patent Documentation	• Understand the process and requirements for patent documentation in engineering innovation. • Prepare and submit patent applications accurately and effectively. • Evaluate patent documentation to ensure compliance with legal and technical standards.	Advanced	1	2	

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DESIGN ENGINEERING	Project Discussion	• Engage in constructive discussions and debates on engineering projects and topics. • Communicate ideas and opinions effectively in a group setting. • Collaborate with peers to analyze and solve engineering problems presented in project discussions.	Advanced	1	3	