

GOVERNMENT OF GUJARAT
LUKHDHIRJI ENGINEERING COLLEGE, MORBI
 Mechanical Engineering Department

Course Teaching-Learning-Evaluation Strategy

Subject: Design Engineering-IIA (3150001) Academic Year: 2022-23 (ODD) Class: 5thSemester

Type of course: Project Work

Faculties: J M Pujara

Prerequisite: Design Engineering-1A & 1B

Course Outcomes (Cos)

CO Nos.	CO statement	Weightage (Marks %)
1.	Orientation with revision of Design Thinking with respect to their problem.	25
2.	Work on their Ideation canvas, Summary of AEIOU activity/inputs ,Preparation of Mind Map, Empathy Map.	25
3.	Preparation of Product Development Canvas (PDC), Product Experience, Product Functions, Product Features, Components.	25
4.	Pre-Design, Iteration & Modification based on feedbacks, Rough Prototype.	25

Teaching and Examination Scheme:

Teaching Scheme			credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE(E)	PA(M)	ESE(V)	PA(I)	
0	0	2	1	0	0	80	20	100

Course Evaluation Plan

	Direct Assessment				
	Internal Evaluation			External(Uni.) Evaluation	
	Mid Sem Exam (continue evaluation) (Theory)	Assignment/ Quiz	Lab. Work	Practical/ Viva (IF)	Uni. Exam (Theory)
Max. Marks			20	80	
Weightage	30%			70%	
CO1			05	20	
CO2			05	20	
CO3			05	20	
CO4			05	20	

Course Content

Sr.No.	Particular	Sub-Head Weightage
1.	Observation towards Empathy <ul style="list-style-type: none"> ➤ Field Activity/observation and outcome ➤ Mind Mapping – Summarization and data analysis ➤ Observation Technique (AEIOU Summary) 	20
2.	Logbook (Individual completed logbook, duly signed By guide regularly) Continuous Assessment Card for Internal Evaluation (Complete and duly signed by guide regularly)	10
3.	Design Problem Definition <ul style="list-style-type: none"> ➤ Secondary research/Prior art search ➤ Diachronic and Synchronic analysis 	10
4.	Canvases/Frameworks <ul style="list-style-type: none"> ➤ AEIOU, Mind Mapping ➤ Empathy mapping ➤ Ideation Canvas ➤ Product development 	15
5.	Pre-Design Calculations	15
6.	Report: Compilation of work report (process report), Online Certificate generated through DE Portal, Future action plan, Question and Answer, Communication Skill, Attitude	10
Total:		80

Course articulation matrix correlation

CO No.	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PS01	PS02
CO1	2	2		1		2				2	2	2	3	2
CO2	1	3	2		2	2	2	2		3	1	1	2	3
CO3	2	2	1	2	2	3	2		2		1	1	2	2
CO4	3	2		2	3	1	1	3		2	2	2	2	1

Justification(s) of correlation between Co and Pos/PSOs

Mapping	Justification(s)
3150001-1 WITH PO1, PO2, PO4, PO6, PO10, PO11, PO12, PSO1, PSO2,	3150001-1 mapped because through 3150001-1 students discuss reverse engineering knowledge orientation towards their problem.
3150001-2 WITH PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2,	3150001-2 mapped because 3150001-2 students will Work on their Ideation canvas, Summary of AEIOU activity/inputs, Preparation of Mind Map, Empathy Map.
3150001-3 WITH PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO11, PO12, PSO1, PSO2,	3150001-3 mapped because students will Prepare a Product Development Canvas (PDC), Product Experience, Product Functions, Product Features ,Components.
3150001-4 WITH PO1, PO2, PO4, PO5, PO6, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2,	3150001-4 mapped because will develop Pre-Design, Iteration & Modification based on feedbacks, Rough Prototype.

Tagging of Cos with POs, PSOs, Cognitive Level (R-Remember, U-Understand, Ap- Apply, An-Analyse, E-Evaluate and C-Create), Knowledge Categories (F—Factual, C—Conceptual, P—Procedural and M—Metacognitive).

CO No.	Statement	POs	PSOs	Cognitive Level	Knowledge Categories
CO1	Orientation with revision of Design Thinking with respect to their problem	PO1 PO2 PO4 PO6 PO10 PO11 PO12	PSO1 PSO2	U	C
CO2	Work on their Ideation canvas, Summary of AEIOU activity/inputs, Preparation of Mind Map, Empathy Map.	PO1 PO2 PO3 PO5 PO6	PSO1 PSO2	Ap, E,C	C,P,M

		PO7 PO8 PO10 PO11 PO12			
CO3	Preparation of Product Development Canvas (PDC), Product Experience, Product Functions, Product Features, Components	PO1 PO2 PO3 PO4 PO5 PO6, PO7 PO9 PO11 PO12	PSO1 PSO2	Ap, An, E, C	C, P, M
CO4	Pre-Design, Iteration & Modification based on feedbacks, Rough Prototype	PO1 PO2 PO4 PO5 PO6. PO7 PO8 PO10 PO11 PO12	PSO1 PSO2	Ap, An, E,C	C, P, M

Online Links:

1. <https://www.youtube.com/watch?v=cYGbaqF89Qk>
2. <https://www.youtube.com/watch?v=brpBM9xV7n8>
3. <https://www.youtube.com/watch?v=QZzXUUnGkng>
4. <https://www.youtube.com/watch?v=EHnLvkdG06M>
5. <https://designengineeringsheetmaker.in/>
6. <https://www.youtube.com/watch?v=Q7IVU6Q9H8A&t=54s>
7. <https://www.youtube.com/watch?v=PbzNMMZe4KU>