

Siruseri IT park, OMR, Chennai - 603103

DEPARTMENT OF MECHANICAL ENGINEERING (Common To CSE,ECE, MECH & IT)

Evaluation method : Assignment and Direct interaction during Tutorials

UNIT III (SIX SIGMA METHODOLOGIES)							
19	Design for six sigma (DfSS)	R3	1	BB	L2	CO4	PO6-PO8
20	Design For Six Sigma Method	R3	1	BB	L1,L2	CO4	PO6-PO8
21	Failure Mode Effect Analysis (FMEA)	R3	1	PPT	L1,L2,L3	CO4	PO6-PO8
22	FMEA process	R3	1	PPT	L1,L2	CO4	PO6-PO8
23	Risk Priority Number (RPN)	R3	1	BB	L1,L2	CO4	PO6-PO8
24	Six Sigma and Leadership	R3	1	BB	L2	CO4	PO6-PO8
25	Committed leadership	R3	1	PPT	L2,I3	CO4	PO6-PO8
26	Change Acceleration Process (CAP)	R3	1	PPT	L2,L3	CO4	PO6-PO8
27	Developing communication plan , Stakeholder	R3	1	PPT	L2	CO4	PO6-PO8
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any.....Seminar and Assignment							
Evaluation method: Assignment and Direct interaction during Tutorials							
UNIT IV (SIX SIGMA IMPLEMENTATION AND CHALLENGES)							
28	Tools for implementation , Supplier Input Process Output Customer (SIPOC)	R3	1	PPT	L2,L3	CO4	PO6-PO8
29	Quality Function Deployment or House of Quality (QFD)	R3	1	PPT	L1,L2	CO4	PO6-PO9
30	Alternative approach , implementation , leadership training	R3	1	PPT	L1,L2,L3	CO4	PO6-PO9
31	Close communication system,	R3	1	PPT	L2	CO4	PO6,PO8,PO12
32	project selection , project management and team	R3	1	PPT	L1,L2	CO4	PO6,PO8,PO12
33	Champion training , customer quality index , challenges	R3	1	BB	L2,L3	CO4	PO6,PO8,PO12
34	program failure, CPQ vs six sigma	R3	1	BB	L1,L2	CO4	PO6,PO8,PO12
35	structure the deployment of six sigma	R3	1	BB	L2	CO4	PO6-PO8
36	cultural challenge , customer/internal metrics	R3	1	BB	L2	CO4	PO6-PO8
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any.....Seminar and Assignment							
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UNIT V (EVALUATION AND CONTINOUSIMPROVEMENT METHODS)							
37	Evaluation strategy , the economics of six sigma quality	R3	1	BB	L2	CO5	PO9,PO10
38	Return on six Sigma (ROSS)	R3	1	BB	L1,L2,L3	CO5	PO8
39	ROI, poor project estimates , continuous improvement	R3	1	BB	L1,L2	CO5	PO6,PO8
40	lean manufacturing ,value, customer focus	R3	1	BB	L2,L3	CO5	PO6,PO8,PO10
41	Perfection, focus on waste, overproduction , waiting	R3	1	BB	L1,L2	CO5	PO6,PO8
42	Inventory in process (IIP), processing waste	R3	1	BB	L1,L2	CO5	PO9,PO10,PO12
43	Transportation, motion	R3	1	PPT	L2	CO5	PO6,PO8,PO12
44	Making defective products, underutilizing people	R3	1	PPT	L2	CO5	PO6,PO8,PO12
45	Kaizen – 5S	R3	1	BB	L1,L2,L3	CO5	PO6,PO8,PO12
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any.....Seminar and Assignment							
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Content Beyond the Syllabus Planned							
1	IMPLEMENTATION OF LEAN SIX SIGMA IN VARIOUS INDUSTRIES - AN OVERVIEW						
2	STATISTICAL PROCESS CONTROL						
Reference Books							
1	Michael L.George, David Rowlnalds, Bill Kastle, What is Lean Six Sigma, McGraw – Hill 2003						
2	Thomas Pyzdek, The Six Sigma Handbook, McGraw-Hill,2000						
3	Fred Soleimannejed , Six Sigma, Basic Steps and Implementation, AuthorHouse, 2004						
4	Forrest W. Breyfogle, III, James M. Cupello, Becki Meadows, Managing Six Sigma:A Practical Guide to Understanding, Assessing, and Implementing the Strategy That Yields Bottom-Line Success, John Wiley & Sons, 2000						
5	James P. Womack, Daniel T.Jones, Lean Thinking, Free Press Business, 2003						
6	P. R. Hemalatha, Murali Saktheeswaran, T. Suba Nachiar, Lean Six Sigma, Technical Publications, 2020						
Website/URL references							
1	https://www.sixsigmaonline.org/						
2	https://www.investopedia.com/terms/s/six-sigma.asp						

Blooms Level														
Level 1 (L1) : Remembering Level 2 (L2) : Understanding Level 3 (L3) : Applying					Lower Order Thinking	Fixed Hour Exams	Level 4 (L4) : Analysing						Higher Order Thinking	Projects / Mini Projects
							Level 5 (L5) : Evaluating							
							Level 6 (L6) : Creating							
Mapping syllabus with Bloom's Taxonomy LOT and HOT														
Unit No	Unit Name					L1	L2	L3	L4	L5	L6	LOT	HOT	Total
Unit 1	LEAN AND SIX SIGMA BACKROUND AND FUNDAMENTALS					2	9	0	0	0	0	11	0	11
Unit 2	THE SCOPE OF TOOLS AND TECHNIQUES					3	9	3	0	0	0	15	0	15
Unit 3	SIX SIGMA METHODOLOGIES					4	9	3	0	0	0	16	0	16
Unit 4	SIX SIGMA IMPLEMENTATION AND CHALLENGES					4	9	3	0	0	0	16	0	16
Unit 5	EVALUATION AND CONTINOUSIMPROVEMENT METHODS					5	9	3	0	0	0	17	0	17
Total						18	45	0	0	0	0	75	0	75
Total Percentage						24	60	0	0	0	0	100	0	100
CO PO Mapping														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	0	0	0	0	0	3	2	2	1	1	0	2	0	0
CO2	0	0	0	0	0	3	2	2	1	1	0	2	0	0
CO3	0	0	0	0	0	3	2	2	1	1	0	2	0	0
CO4	0	0	0	0	0	3	2	2	1	1	0	2	0	0
CO5	0	0	0	0	0	3	2	2	1	1	0	2	0	0
Avg	0	0	0	0	0	3	2	2	1	1	0	2	0	0
Justification for CO-PO mapping														
CO1	Students can know about the basic knowledge of lean six sigma.													
CO2	Students can identify the problem with the help of using the six sigma tools.													
CO3	Students can use six sigma methods for reducing the failure.													
CO4	Students can identify the tools for implementation and challenges.													
CO5	The students is able to improve continous quality improvement in production.													
3		High level			2			Moderate level			1		Low level	
Name & Sign of Faculty Incharge : Dr.S.PRASATH /														
Name & Sign of Subject Expert : Dr.S.PRASATH /														
Head of the Department : Dr.S.PRASATH /														