GUJARAT TECHNOLOGICAL UNIVERSITY

MECHANICAL (INDUSTRIAL ENGINEERING) (46)

VALUE ENGINEERING AND ANALYSIS

SUBJECT CODE: 2714608

SEMESTER: I

Type of course: Major Elective I

Prerequisite: NA

Rationale: The aim of the course is to familiarize students with the basic approaches of Value Engineering. Application of different phase/job plan of VE helps student in Industry base project.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P	C	Theory Marks		Practical Marks				
				ESE (E)	PA (M)	PA (V)		PA (I)		
						ESE	OEP	PA	RP	
3	2	2	5	70	30	20	10	20	0	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Introduction: An Overview of Value Engineering (VE) - Definition, Concepts and Approaches of Value Analysis and Engineering, Evolution of VE.	5	10
2	Phases of Value Engineering and Result Accelerators: Application of different phases of VE	10	30
3	Function Evaluation: Different types of functions, Evaluation of function by different methods, , Steps of problem setting system, Problem solving system, Setting and solving management –decision- type problems, Setting and solving service problems	9	20
4	Selection of Evaluation VE Projects: Projects Selection, Methods Selection, Value Standards, Application of VE Methodology	6	15
5	VE Technique: Function Analysis System Technique (FAST), Creating and Using FAST diagram. Life cycle cost model	6	8
6	Organization for VE: Forming VE team, Coordination and working of VE team, Essential qualifications and training for VE team, Effect of value analysis on other work in the business	4	7
7	VE Level of Effort: VE Team, Coordinator, Designer, Different Services, Definitions, Construction management Contracts, Value Engineering Case studies	5	10

Reference Books:

1. Value Engineering Theory, Parker,D.E., Sundaram Publishsers,
2. Techniques of Value Engineering and Analysis, Miles, L.D., McGraw Hill Book Co.
3. Compendium on Value Engineering, Tufty Herald, G., The Indo American Society.

Course Outcome:

After learning the course the students should be able to:

1) Demonstrate Value Engineering application in industry
2) Describe value engineering job plans
3) Demonstrate case study on value engineering for different application

List of Experiments:
Students will prepare case study and presentation on different industry product. Minimum 5 case study to be prepared

Open Ended Problems:
1. Students can prepare project on value engineering of automobile product
2. Students can prepare project on FAST diagramming of different products

Major Equipments:

Industry base case study