

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Civil (Construction Engineering & Management)

Value Engineering

SUBJECT CODE: 3711411

Type of Course: Elective Subject

Prerequisite: NIL

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	PA(M)	Viva	PA (I)		
3	0	2	4	70	30	30	20	150

Contents:

Sr.No.	Topics	Hrs.	% Weightage
1	Introduction: Concept and definition, objectives of Value engineering, Advantages of Value methodology, Scenario of value engineering with context to India, Origin of Value engineering. Quantity surveying and value engineering, team of value engineering and its quality, Applicability to Mega projects, Value engineering and project management.	6	15
2	Value Analysis: Concept, Job planning and its importance in value engineering, Various phases of Value Engineering -Information Phase, Function Analysis Phase, Creative Phase, Evaluation Phase , Development Phase.	9	21
3	Functional Analysis: Functions at various levels and of various types, cost and worth of function, importance of functional analysis, FAST Diagramming - How to prepare	9	21
4	Creative Phase:	9	21

	Creative thinking and creative processes, Application in Value engineering, Various techniques, fundamental approaches of similarity, contiguity and contrast, Positive approach		
5	Cost Model: Introduction, Value, Cost and Worth, True and Poor value, Factors affecting the value , Value Index, Cost and Value Gap, importance of cost model in Value Engineering , Function and Matrix Cost model, Life cycle cost analysis	6	15
6	Environmental Impact Assessment with VE approach for the projects.	3	07
	Total	36	100

Reference Book(s)

1. Larry W. Zimmerman, “Value Engineering: A Practical Approach for Owners”, Designers & Contractors - CBS Publication.
2. Arthur E. Mudge, “Value Engineering: A Systematic Approach”, Mc GrawHill.
3. Donald E. Parker, “Value Engineering : Theory”, Soundaram Publishers
4. O' Brien J.J., “Value Analysis in Design and Construction”, Mc Graw Hill.
5. “Value Methodology” A Pocket Guide to Reduce Cost and Improve Value Through Function Analysis; Lawrence D Miles Foundation.
6. Lomansh, S., “Value Management: A Textbook”, 1997 - Sterling Publishers (Pvt.) Ltd., New Delhi