



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Bachelor of Engineering**  
**Subject Code: 3152210**  
**INDUSTRIAL MANAGEMENT**  
**B.E. 5<sup>th</sup> SEMESTER**

**Type of course:** Under Graduate level

**Prerequisite:** Zeal to learn the subject

**Rationale:**

Mining engineers are expected to work during most of their career at top level. They are also expected to deal with workforce and management problems. In the present era of competition, optimum utilization of the resources with achieving higher productivity is essential for any industry to survive. Quality and cost controls are also other important factors which contribute to the day to day supervision issues. This course aims to deal effectively with such issues along with familiarization of acts and laws applied to industries.

**Teaching and Examination Scheme:**

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	0	3	70	30	0	0	100

**Content:**

Sr. No.	Topics	Teaching Hrs.	Module Weightage
1.	<b>Introduction:</b> Industrial management and its need	2	4.4%
2.	<b>CPM:</b> Introduction, basic network construction, AOA and AON systems, network development, language of CPM, advantages and limitations. <b>PERT:</b> Introduction; difference between CPM and PERT; three time estimates for PERT; average time/ expected time calculation; advantages and limitations.	8	17.8%
3.	<b>Production planning and control (PPC):</b> Introduction; functions; objective and steps in production planning; production control; progress control; Scheduling-meaning and need for productivity and utilization; Gantt chart; Critical ratio scheduling-method and numeric examples; bottlenecking.	8	17.8%
4.	<b>Plant layout and material handling:</b> Site selection for plant location (urban and rural); location economics; techniques used for location selection; factors considered for plant layout; analytical tools of plant layout; layout problems; principals of plant layout; flow pattern; design of workplace layout.	9	20%



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	<b>Material Handling:</b> Introduction; objectives; cost; basic handling systems; material handling devices; relation between plant layout and materials handling.		
5.	<b>Marketing:</b> Market research and its classification; market research techniques; sales forecasting (factors, types and methods); marketing organization; marketing and customer service; customer satisfaction; consumer behavior; environmental variables; buyer behavior study; marketing strategies; marketing information system; marketing control; market promotions; duties of marketing manager.	9	20%
6.	<b>Inspection:</b> introduction; objectives; organization of inspection department; inspection standards; methods; tools; life testing; reliability. <b>Quality control:</b> introduction; factors affecting quality; objectives; functions; advantages and disadvantages; product quality analysis (PQA); quality assurance; quality planning; quality management system.	9	20%

### Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
08	14	20	14	14

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table

### Reference Books:

1. Industrial organization and engineering economics by T.R.Banga and S.C.Sharma
2. CPM & PERT principles and Applications by L.S.Srinath.
3. Modern Production Management by Buffa.
4. Value Analysis by Mikes.

### Course Outcome:

After learning the course the student will be able to:

1. Prepare and analyze CPM and PERT for given activities.
2. Conduct production planning and control.
3. Design plant layout.
4. Handle material as per industrial requirements.
5. Analyze and design as per the current market demands.
6. Conduct inspection and quality assurance activities.