

**Programme** : Diploma in CE/EE/ET/ ME/MT/CM/IT  
**Programme Code** : 01/02/03/04/05/06/07  
**Name of Course** : Construction Management  
**Course Code** : MA481

**Teaching and Scheme:**

	Hours/Week	Total Hours
Theory	04	64
Practical	--	--

**Evaluation Scheme:**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Three class tests of 60 min duration	3 Hrs	--	--	--
Marks	20	80	--	--	--

**Course Rationale:**

The Civil Engineer has to plan, Manage and execute Civil Engineering works. He has to manage different resources. He should have knowledge of basic management of basic management processes related to Civil engineering field.

**Objectives:**

The student will able to

1. Understand management techniques.
2. Plan, Monitor and execute various types of construction work
3. Manage different resources (Men, Material, Money, Machines)
4. Read, draw & update bar charts, CPM and PERT.
5. Inspect & control quality of construction.

**Contents:**

Topic No.	Topic & Subtopic	Hrs	Marks
1	<b>Construction Industry</b> 1.1 Importance of construction industry in National Development. 1.2 Special characteristics of Civil engineering works. 1.3 Classification and types of construction works. 1.4 Agencies associated with construction works. 1.5 Resources of construction industry, Material, Manpower, Money, Machinery. 1.6 Stages in construction – Planning stage execution stage. 1.7 Objectives of Construction Management.	06	06

2	<b>Scientific Management</b> 2.1 Definition of Management. 2.2 Necessity Of Scientific management. 2.3 Principles of Management. 2.4 Functions of Management. 2.5 Application of Principal and function of management to Civil Engineering works.	07	08
3	<b>Leadership and human relationship</b> 3.1 Leadership – styles of leadership 3.2 Desirable qualities of leadership of effective Execution of construction work. 3.3 Functions of leadership 3.4 Human relation, Human needs 3.5 Motivation and its importance and need, functions of Motivation, Hygiene and motivation factors.	07	08
4	<b>Planning and scheduling of construction works</b> 4.1 Levels and stages of planning –(pre & post tenders) 4.2 Necessity and Importance of planning. 4.3 Planning for owner/client and planning for contractor. 4.4 Site selection and orientation of building. 4.5 Study of drawing, Design, Raw materials Equipment sand human resources required. 4.6 Methods of scheduling, Advantages of scheduling. 4.7 Bar chart, Preparing construction schedule. Advantages and limitations of bar charts. 4.8 Planning and scheduling by Network Construction, Logic, Determine of various timings EST, EFT, LST, LFT. Total float preparation of activity table, Example on developing Critical path, Introduction to PERT. Terms used. 4.9 Comparison between CPM and PERT. 4.10 Preparing Construction schedule comprising of items of work and duration. 4.11 Resource Aggregation for labour.	14	24
5	<b>Communication at site</b> 5.1 Importance of communication at construction site. 5.2 Types of communication. 5.3 Barriers to effective communication. 5.4 Techniques to overcome barriers of effective communication.	04	06
6	<b>Safety in Civil Engineering</b> 6.1 Importance of safety in construction works. 6.2 Common Causes of accidents, types of accidents. Remedial measures. 6.3 Terms used- Injury frequency rate(IFR), Injury Severity rate (ISR), Injury Index (II), Accident cost. 6.4 Effective safety Programme.	06	08
7	<b>Site layout</b> 7.1 Storing and stacking of material site. 7.2 Location of Machinery and equipment. 7.3 Factors on which site layout depend. 7.4 Preparation of site layout.	06	08

8	<b>Inspection and quality</b> 8.1 Concept of quality. 8.2 Supervision techniques to establish dimensional control such as line, Level Gradient, Slope, Plumb Camber. 8.3 Functions of Inspection Department. 8.4 Quality assurance and quality control. 8.5 Sampling Techniques.	06	08
9	<b>Application of Computer in Construction Management.</b> 9.1 Types of software 9.2 Application of software & Areas, 9.3 Merits and Demerits of software.	04	004
10	<b>Entrepreneurship in Construction Management</b> 10.1 Concept of Entrepreneur and Entrepreneurship 10.2 Merits of Entrepreneurship and employment. 10.3 Types of Construction Management.	04	06
<b>Total</b>		<b>64</b>	<b>80</b>

**Suggested Instructional Strategies:**

Lecture Method, Use of teaching aids, Demonstration, Case Study.

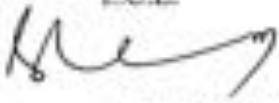
**Learning Resources:** Books, Journals

**Reference Book:**

SN	Author	Title	Publisher
1	M.L.Dhir, Gehlot	Construction Planning & Management	Wiley New Delhi
2	Harpal Singh	Construction Management & Accounts	Tata McGraw Hill
3	B.Sengupta & Guha	Construction management & planning	Tata McGraw Hill
4	R.L.Peurifoy	Construction Planning equipment and methods	McGraw-Hill Co, Ltd.
5	Banga & Shoral	Origination of Management	McGraw-Hill Co, Ltd.

Prepared By

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I.C.E.

  
**Head of Civil Engg.**  
**Govt. Polytechnic,**  
**Pune.**

(A.S. Zampare)  
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**GOVERNMENT POLYTECHNIC, PUNE**  
(An Autonomous Institute of Govt. of Maharashtra)

Programme	:	Diploma in CE/EE/ET/ ME/MT/CM/IT
Programme Code	:	01/02/03/04/05/06/07
Name of Course	:	Industrial organization Management
Course Code	:	MA482

**Teaching Scheme:**

	Hours /Week	Total Hours
Theory	03	48
Practical	---	---

**Evaluation:**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Three class tests of 60 Minutes	03 Hrs.	---	---	---
Marks	20	80	---	---	---

**Course Aims:**

At the end of course, student will be able to :

- Create necessary awareness and motivation of technical student for promoting self-employment and alternative to wage employment
- Develop skill for organizing market survey and managements.
- Appreciate importance of human relations in industry.

**Course Objectives:**

After going through this course the diploma technician will be able to know :

- The basic knowledge about entrepreneurship
- Fundamentals of accounting finance, marketing.
- Various aspects of management, Taylor's principle.
- Management techniques.
- Different acts used in factories.

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**Course Content:**

Sr. No.	Topic/Subject	Hrs.	Marks
1.	<b>Overview of Business and Entrepreneurship :</b> Type of Business: Service, Manufacturing, Trade. Industrial sectors introduction to: Engineering Industry, IT Industry, Banking, insurance, Retail. Globalisation: Introduction, Advantages and Disadvantages w.r.t. India.	05	08
2.	<b>Organizational Management :</b> Organization: Definition, Steps in organization. Types of Organization: Line, Functional, Line and Staff, Project. Departmentation: By product, by process, by function. Principles of Organization: Authority and responsibility, Span of control, Effective delegation, Communication. Forms of Ownership: Proprietorship, Partnership, Joint stock, Co-operative society, Government sector.	08	14
3.	<b>Management Process :</b> What is management : Evolution, Various definition of management, concept of management, Levels of management, administration of management, scientific management by F W Taylor. Principle of management: Function of management: Planning, organizing, directing, coordinating, controlling	08	14
4.	<b>Financial Management and Accounting :</b> Financial management objective and function. Capital generation and management: type of capital-fixed and working, sources of raising capital, feature of short term, medium term and long term sources. Budget and account: types of budget, production budget-sample format, fixed and variable budget-concept, profit and loss account, important accounting terminology, types of account: rules for debit and credits, systems of book keeping, books of accounts, Balance sheet: meaning, sample format, meaning of different terms involved.	07	12
5.	<b>Material Management :</b> Inventory concept, its classification, functions of inventory: ABC analysis-necessity and steps: Economic order quantity concept, graphical representation, determination of EOQ: Standard steps in purchasing : Modern technique of material management: material resources planning(MRP)-function of MRP, input to MRP, benefit of MRP. Enterprise resource planning (ERP)-concepts, list of modules, advantages and disadvantages of ERP.	07	12
6.	<b>Marketing :</b> Market survey, definition, modern concept of marketing orientation, project report preparation, utility, project report preparation of utility for evaluation, market oriented report, product costing, project costing.	05	08

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	format, evaluation of project report, costing and pricing classification of costs, calculation of break even point, packing and advertising.		
7.	<b>Industrial Safety and legislative acts :</b> Safety management: cause of accident, types of industrial accident, preventive measure, safety procedure. Industrial legislation – necessity of acts: important definition and main provision of following act – workman compensation act, minimum wages act, Indian factory act.	04	06
8.	<b>Quality management and ISO :</b> Meaning of quality: quality management system –activities, benefits, Quality control-objective, function, advantages, quality circle-concepts, characteristics and objectives, quality assurance-concepts, quality assurance system. Meaning of total quality and TQM: components of TQM-concept, element of TQM, benefits. Modern techniques and system of quality management like-Kaizen, 5S, Six Sigma. ISO 9001:2000: benefits, Main clauses.	04	06

**Instructional Strategy:**

Sr. No.	Topic	Instructional Strategy
1.	Overview of Business and Entrepreneurship	Class room Teaching
2.	Organizational Management	Class room Teaching
3.	Management Process	Class room Teaching
4.	Financial Management and Accounting	Class room Teaching
5.	Material Management	Class room Teaching
6.	Marketing	Class room Teaching
7.	Industrial Safety and legislative acts	Class room Teaching
8.	Quality management and ISO	Class room Teaching

**Reference Books :**

Author	Title	Publisher
Sept. 1988, TTTI, Chandigarh	Entrepreneurship development training material	Sept. 1988, TTTI, Chandigarh
March 1988, TTTI, Chandigarh	Report for institutional entrepreneurship development and management courses in selected institutions	March 1988, TTTI, Chandigarh
Uday Parikh, T.V. Rao and D.M. Pestonjee	Behavioural processes in organizations	Tata McGrawhill.



## GOVERNMENT POLYTECHNIC, PUNE

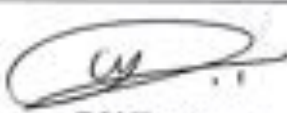
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O.P. Khanna	Industrial engineering and management	Dhanpat Rai and sons.
Banga and Banga	Project Planning and entrepreneurship	Khanna Publishers.
David, Kroenke	Management Information Systems	McGraw Hill Book Co.
Lester R. Bittel, John W. Newstrom	What every supervisor should know	McGraw Hill Book Co.

### Specification Table :

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1.	Entrepreneurship development	03	03	--	06
2.	Finance and accounting	06	02	--	08
3.	Marketing	--	04	04	08
4.	Fundamentals of accounting	06	02	--	08
5.	Organization	07	04	04	15
6.	Management	10	10	06	26
7.	Acts	04	--	--	04
8.	Fields of industrial psychology	05	--	--	05
	<b>Total</b>	40	26	14	80

### Prepared By:

 C.Y. Totewar Lect. in Electrical	(A.S. Zampure) Member Secretary, PBOS	(N.S. Kadam) Chairman, PBOS
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**Programme** : Diploma in CE/ EE/ET/ME/MT/CM/ IT  
**Programme Code** : 01/02/03/04/05/06/07/15/16/17/18/19  
**Name of Course** : Entrepreneurship Development  
**Course Code** : MA483

**Teaching Scheme;**

	Hours /Week	Total Hours
Theory	03	48
Practical	---	---

**Evaluation Scheme;**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests of 60 Minutes	03 Hrs.	---	---	---
Marks	20	80	---	---	---

**Course Rationale;**

To make the students aware of entrepreneurship as one of the career options and hence to teach them the various aspects of starting a enterprise.

**Course Objectives;**

After studying this course, the student will be able to

- SWOT analysis.
- Business Environment scanning and opportunity scanning. (Search)
- Market assessment.
- Project formulation.
- Identification of product / Technology / Equipment
- Financial Sources.
- Sales and Marketing
- Reasons of failure of entrepreneurs.

**Course Content;**

Chapter No.	Name of Topic/Sub topic	Hrs	Weightage
1.	<b>Entrepreneurship Awareness</b>		
	Entrepreneurship – need, scope & philosophy. Definition of an entrepreneur, attributes, Entrepreneurship. Need Analysis: Human Need, SWOT Analysis, goal setting, business environment, emerging trends, Information & collection techniques, opportunities. Role of Entrepreneur in Indian economy	08	10
2.	<b>Starting &amp; Identification of Project</b>		
	Product and services, demand availability & resource requirement. Market survey technique – Identification of market, marketing trends, market survey techniques, agencies & organizations to be contacted. Product, suppliers of plant, equipment & raw material technology. Venture Capital Funding	08	14
3.	<b>Preparation of Project report</b>		



	Structure of project report, purpose of project report. Working & fixed capital, financial institutions, procedures & Norms for financing feasibility criteria, project planning, time management, legal formalities, municipal by laws. Safety considerations, plant layout, commissioning of plant & equipment, trial production.	10	16
4.	<b>Information &amp; support systems</b> Information needed & their sources. Information related to Project Information related to procedures & formalities. Support systems a) Small scale business planning Requirements b) Govt. & financial Agencies, Formalities. Role of Central Government and State Government in promoting Entrepreneurship- introduction to various incentives, subsidies and grants – Export Oriented Units – fiscal and tax concession available. Role of following agencies in the Entrepreneurship Development - District Industries Centers (DIC), Small Industries Service Institute (SISI), Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB)	10	16
5.	<b>Management of Enterprises</b> Forms of business Organization. Human behavior, personnel management, sales Management. Marketing practice, distribution channels, Advertisings, Packaging.	06	12
6.	<b>Why do entrepreneurs fail?</b> The four entrepreneurial pitfalls (Peter Ducker) Case studies of successful entrepreneur. Women entrepreneurs – Reasons for low women entrepreneurs, problems & prospectus.	06	12
	<b>Total</b>	<b>48</b>	<b>80</b>

#### Instructional Strategy:

Sr. No.	Topic	Instructional Strategy
1.	Entrepreneurship Awareness	Lecture, market survey, workshops, interviews.
2.	Starting & Identification of Project	
3.	Preparation of Project report	
4.	Information & support systems.	
5.	Management of Enterprises	
6.	Why do entrepreneurs fail?	

#### Text Books:

Sr. No	Author	Title	Publication
1.	S. Saini, B.S. Rathore	Entrepreneurship - Theory & Practice	

#### Reference Books:

Sr. No	Author	Title	Publication
1.	Vasant Dsai, Pragati Desai	Entrepreneurial development Vol. I	
2.	Vasant Dsai, Pragati Desai	Entrepreneurial development Vol. II	
3.	Vasant Dsai, Pragati Desai	Entrepreneurial development Vol.	

		III	
4.	Colombo Staff College, Manila	Entrepreneurship Development Plan	TMH, New Delhi
5.	Jerald Greenberg, Robert A. Baron/ Carol A. Sales/ Frances A. Owen / Verlag (1999)	Behaviour in organizations, Pearson Education.	Tata Mcgraw Hill.
6.	The winning Edge, corporate creativity.	Pradip N. Kandwalla	Tata Mcgraw Hill.(2006)
7.	John L. Colley, Jacqueline L. Doyle,	Corporate Governance	Tata Mcgraw Hill. (2003)
8.	Timpe, Dale A	Creativity	M/s. Jaico Publishing House, New Delhi. Tata Mcgraw Hill. (2005),

**Learning Resources:**

Books, Articles, Case studies

**Specification Table:**

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1.	Entrepreneurship Awareness	02	06	02	*10
2.	Starting & Identification of Project :	04	06	04	14
3.	Preparation of Project report business plan.	03	10	03	16
4.	Information & support systems.	04	08	04	16
5.	Management of Enterprises :	04	06	02	12
6.	Why do entrepreneurs fail?	04	04	04	12
	<b>Total</b>	<b>21</b>	<b>40</b>	<b>19</b>	<b>80</b>

  
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**Programme** : Diploma in CE/EE/ET/ME/MT/CM/IT  
**Programme Code** : 01/02/03/04/05/06/07/15/16/17/18/19  
**Name of Course** : Material Management  
**Course Code** : MA484

**Teaching Scheme:**

	Hours /Week	Total Hours
Theory	03	48
Practical	--	--

**Evaluation Scheme:**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Three class tests of 60 Minutes	03 Hrs.	--	--	--
Marks	20	80	--	--	--

**Course Rationale:**

This course deals with management of materials. Smooth running of any industry depends upon the interdepartmental relations and planning for execution of work jointly. Efficiency of production department also depends upon the availability of raw material of required quality and quantity. Therefore there should be proper co-ordination between production department, production planning, stores department and purchase department. Incorrect materials planning can also lead to higher inventories & high cost.

**Course Objectives:**

After studying this course, the student will be able to

- To know the importance of materials and inventory management
- To know the different aspects of buying procedure and price forecasting.
- To acquaint with latest techniques in materials management
- To know procedure for giving requisition of materials along with specifications
- To know different features of negotiation technique and management of obsolete and scrap materials.



**Course Content:**

Chapter No.	Name of Topic/Sub topic	Hrs	Weight-age
<b>1</b>	<b>Importance of Materials Management</b>		
	1.1 Growing importance of Materials Management	<b>10</b>	<b>16</b>
	1.2 Scope of Materials Management		
	1.3 Objectives and functions of Materials Management		
	1.4 Organizing for Materials Management		
	1.5 Introduction to Materials planning		
	1.6 Importance of specifications in Materials Management		
<b>2</b>	<b>Inventory Management</b>		
	2.1 Selective control – ABC Analysis - Purpose and objectives of ABC Analysis Mechanics	<b>10</b>	<b>16</b>
	2.2 Advantages of ABC Analysis limitations of		
	2.3 ABC Analysis		
	2.4 Order point – Lead Time, safety stock, Re-order point, standard order. Economic order		
	2.5 Quantity (EOQ), Graphical & Analytical Method		
<b>3</b>	<b>Buying procedure</b>		
	3.1 Sourcing, Buy or lease	<b>10</b>	<b>16</b>
	3.2 Purchase systems		
	3.3 Problems in relations with supplier		
	3.4 Value Analysis → Definition & scope		
	3.5 Selection of products for value analysis		
	3.6 Value analysis framework		
	3.7 Implementation & methodology		
	3.8 Ethics in purchasing		
<b>4</b>	<b>Price forecasting</b>		
	4.1 Importance & Approaches	<b>01</b>	<b>02</b>
<b>5</b>	<b>Inventory control &amp; Cost reduction techniques</b>		
	5.1 Inventory turns ratios	<b>05</b>	<b>08</b>
	5.2 Standardization- need & importance		
	5.3 Codification- concept, benefits.		
	5.4 Value engineering & Value analysis- concept & process		
<b>6</b>	<b>Latest Techniques in Materials Management</b>		
	6.1 Just in Time (JIT) zero inventory concept	<b>05</b>	<b>10</b>

	6.2	Integrated computerized management systems in Materials Management		
	6.3	Introduction to SAP.		
7	<b>Management of obsolete Surplus and Scrap material</b>			
	7.1	Definitions, Reasons for generation and accumulation of obsolete Surplus and scrap, Survey committee, presale preparations, sale, auction, sale by tender.	07	12
<b>Total</b>			<b>48</b>	<b>80</b>

### **Instructional Strategy:**

Sr. No.	Topic	Instructional Strategy
1	Importance of Materials Management	Class room teaching
2	Inventory Management	Class room teaching
3	Buying procedure	Class room teaching
4	Price forecasting	Class room teaching
5	Inventory control & Cost reduction techniques	Class room teaching
6	Latest Techniques in Materials Management	Class room teaching
7	Management of obsolete & scrap material	Class room teaching

### **Text Books:**

Sr. No	Author	Title	Publication
1	Ammer Deans S.	Materials Management	R.D. Irwin Hllions
2	P. Gopalkrishan and M. Sundaresan	Materials Management An Integrated approach	Prentice – Hall of India Pvt. Ltd. New Delhi.
3	M.M. Shah	An integrated concept of Materials Management	Tata McGraw Hill Publisher Co. Ltd. New Delhi

### **Reference Books:**

Sr. No	Author	Title	Publication
1	P.G. Menon	Materials Management	
2	A Deb	Materials Management	Academic Publishers
3	Dobler D.W. and Lee C	Purchasing and Materials Management	---

4	Brandy C.S.	Materials Handbook	---
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**Learning Resources:** OHP, LCD, Projector, and Transference, White board

**Specification Table:**

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1	Importance of Materials Management	6	6	4	16
2	Inventory Management	6	6	4	16
3	Buying procedure	6	6	4	16
4	Price forecasting	--	1	1	02
5	Inventory control & Cost reduction techniques	2	4	2	08
6	Latest techniques in Materials Management	2	4	4	10
7	Management of obsolete and scrap materials	6	6	--	12
<b>Total</b>		<b>28</b>	<b>33</b>	<b>19</b>	<b>80</b>

(Prof.N.S.Kadam)  
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**Programme** : Diploma in CE/EE / ET/ ME/MT/ CM / IT  
**Programme Code** : 01/02/03/04/05/06/07/21/24/26/15/16/17/18/19  
**Name of Course** : Supervisory Management  
**Course Code** : MA485

**Teaching Scheme:**

	Hours /Week	Total Hours
Theory	03	48
Practical	---	---

**Evaluation Scheme:**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests, each of 60 Min. duration	03 Hrs	---	---	---
Marks	20	30	---	---	---

**Course Rationale:**

The diploma holders are intended to work as a supervisor in the industry. He has to perform a versatile role in the activities of an industry; he has to coordinate his subordinates and the higher personals. The students are required to understand to function as a supervisor. He should be able to plan, organize, and direct the subordinates to achieve better results within time for a task assigned to him.

**Course Objectives:**

After studying this course, the student will be able to

- Know the basic duties of a supervisor.
- Plan a particular job by splitting the whole job into pieces and monitoring each step.
- Understand human behaviors, identify skills, utilize skills, and observe safety of workers.
- Achieve better overall efficiency and utilize maximum capacity of machineries.

**Course Content:**

Sr. No	Name of Topic/Sub topic	Hrs	Weightage
1.	<b>Introduction</b>		
	1.1 Management of a job. Necessity for Scientific Management for supervisor. Handling complexity and achieving optimization.	02	04
2.	<b>Planning by Supervisor</b>		
	2.1 Objectives of planning. Planning activities. Planning by supervisor. Detailing and following of each step. Prescribing standard forms for various activities. Budgeting at supervisory level for materials and man power. Planning a programme and actions for a job.	04	08
3	<b>Organizing by supervisor</b>		
	3.1 Organizing physical resources. Matching human needs with job needs. Allotment of tasks to individual and establishing relationship among persons working in a group.	04	08

<b>4.</b>	<b>Directions by supervisor</b>		
4.1	Need for such directions and instructions to subordinates. Need for clarity, completeness and feasibility of instructions. Reviving of effectiveness of communication. Personal counseling. Advance predictions of possible mistakes. Elaborating decisions. On the spot adjustments during execution of job. Laying disciplinary standards in over all working.	06	10
<b>5.</b>	<b>Motivation to subordinates</b>		
5.1	Workers participation in maangement of a job. Achievement motivation. Recognition for devotion. Delegating responsibilities to subordinates. Activities and intensions towards the growth of an individual. Identification of human needs and providing safety to the workers.	06	10
<b>6.</b>	<b>Coordination &amp; implementation</b>		
6.1	Understanding link between various departments in respect of process and quality standards. Synchronization of duties of subordinates. Control over the performance in respect of quality; quality of production; time and cost. Measuring performance, comparing with standard, correcting unfavorable deviations.	10	14
<b>7.</b>	<b>Check list by supervisor</b>		
7.1	Introduction to subordinates regarding the job undertaken. Planning the days work suitable for the job. Responsibility survey. Checking possibility for acceptance of assignment from new department.	08	10
<b>8.</b>	<b>Moving up in the organization</b>		
8.1	Demonstration of job competence. Exhibition of leadership and initiative. Looking for to accept challenging responsibilities and acceptance of the same. Attitude and actions to be followed and avoided. Stressing the value of own contribution. Achievement of trust of subordinates and the higher management.	08	16
	<b>Total</b>	<b>48</b>	<b>80</b>

#### Instructional Strategy:

Sr. No.	Topic	Instructional Strategy
1.	Introduction	Lecture method
2.	Planning by supervisor	Lecture method
3.	Organizing by supervisor	Lecture method
4.	Directions by supervisor	Lecture method
5.	Motivation to subordinates	Lecture method
6.	Coordination & implementation	Lecture method
7.	Check list by supervisor	Lecture method
8.	Moving up in the organization	Lecture method

**Text Books:**

Sr. No	Author	Title	Publication
1	Industrial Management	Shrinivasan	Khanna publisher, New Delhi

**Reference Books:**

Sr. No	Author	Title	Publication
1.	Industrial organization and Engineering Economies	Banga and sharma.	Khanna publisher, New Delhi
2.	Industrial Engineering and Management	O.P. Khanna	Dhangat Rai and Sons, New Delhi
3.	What every Supervisor Should Know	Lestec R. Bittel John W. Newstrom	McGraw Hill Publishing Company, ( GREGG Division )

**Learning Resources:**

Books, Articles, C.D.'s, Visits, Video Cassettes No. 115 and 120

**Specification Table:**


Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1.	Introduction	02	02	-	04
2.	Planning by supervisor:	06	01	01	08
3.	Organizing by supervisor	04	02	02	08
4.	Directions by supervisor	05	03	02	10
5.	Motivation to subordinates	05	03	02	10
6.	Coordination & implementation	10	02	02	14
7.	Check list by supervisor	06	02	02	10
8.	Moving up in the organization	08	04	04	16
	<b>Total</b>	<b>46</b>	<b>19</b>	<b>15</b>	<b>80</b>

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Chairman, PBOS

  
**Head of Civil Engg.  
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**Programme** : Diploma in CE/EE / ET/ ME/MT/ CM / IT  
**Programme Code** : 01/02/03/04/05/06/07/15/16/17/18/19  
**Name of Course** : Total Quality Management  
**Course Code** : MA 486

**Teaching Scheme:**

	Hours /Week	Total Hours
Theory	03	48
Practical / Tutorial	---	---

**Evaluation Scheme:**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests, each of 60 minutes	3Hrs.	--	--	--
Marks	20	80	--	--	--

**Course Rationale:**

In today's international market the quality is another name for universal acceptance for product and services. Hence the mechanical engineers must have consciousness about various quality aspects required for manufacturing /service sector.

To fulfill this need this subject about various factors and philosophies in quality development is introduced. So that student will have most of basic inputs before they enter their profession.

**Course Objectives:**

After studying this course, the student will be able to

- To understand the importance of Quality Standards and consumer need for quality items for price paid by him..
- To understand Quality Management Foundation and introduction to total quality management
- To know about Quality circle, Kaizen and various Quality improvement tools.
- To know about Quality Assurance Systems and Quality Management through ISO 9000 series.
- To know about Toyota way and Six Sigma concepts.

**Course Content:**

Chapter No.	Name of Topic/Sub topic	Hrs	Weight age
<b>1.</b>	<b>Introduction</b>		
	1.1 Basic concepts related with quality, Various definition of quality. Quality of design and quality of conformance, Service quality Vs product quality.	06	08
	1.2 Quality policy: definition and objectives. Quality audit.		
	1.3 Quality assurance: - definition, meaning it's various forms and advantages. Quality audit, quality mindedness, inspection and quality control.		
<b>2.</b>	<b>Quality Management Foundation and introduction to total quality management.</b>		
	2.1 Strategic quality management (HoshinKanri) Strategic quality planning, quality goals. The vision – future state of organization, good understanding by everyone, inspiration, achievable QCDF (Quality Cost Delivery Flexibility), Customer focus, sharing by all values of the leadership, organization and employees.	08	12
	2.2 Total Quality:- definition ,objectives, eight dimensional model of total quality.		
	2.3 Total Quality management:- definition , need ,mission, initiative and concept. Barriers, implementation and advantages.		
	2.4 TQM Models :-Juran trilogy , Deming programme , Mckinsey model, Crosby program.		
<b>3.</b>	<b>Quality Management Processes</b>		
	3.1 <b>Quality planning</b> Quality culture ( Kaizen and Quality circle ) Quality Circle: - concept, objective, structure, steps in formation of quality Circle. Roles of people involved in quality Circle. advantages of quality Circle.	12	20
	3.2 What is Kaizen. <ul style="list-style-type: none"> <li>- The concept, meaning and definition ,areas for Kaizen</li> <li>- 10 ground rules for change.</li> <li>- Traditional methods Vs Kaizen , Kaizen Vs innovation</li> <li>- Types of waste and Waste elimination, value added work, hidden waste and obvious waste, Identification of wastes.</li> <li>- 5S in housekeeping and their meaning</li> <li>- Improvement in work methods.</li> </ul> Achievement after Kaizen		
	3.3 Quality improvement Old statistical and analytical tools for quality. i) Tally-sheet ii) Graphs iii) Histograms iv) Stratification v) Scatter diagram vi) Control chart vii) Pareto diagram		
	3.4 New tools of quality (At least one example to be introduced for each tool) i) Ishikawa diagram ii) Arrow diagram iii) Relations diagram iv) Tree diagram v) Affinity diagram vi) Matrix diagram		

	3.5	Additional tools of quality improvement i) Brains storming ii) Flow charts iii) 5W & 1H iv) 5 WHYS		
<b>4. Quality Management Infrastructure</b>				
		History of evolution of ISO 9000 standards. European economic community (EEC), need for quality system standards, International organization for standardization (ISO) adopted by Bureau of Indian Standards (BIS)	12	16
		ISO 9000: 2000 Quality system ISO 9000 series standards, ISO 9000 elements understanding requirement, assessment with respect to quality system. Documentation and implementation, quality manual, structure, internal quality audit, external audit and certification.		
	4.3	Various Quality Systems Vocabulary and features ISO 9001:2008 Requirements for a quality management system ISO 9004 : 2009 Guidelines for the effectiveness and efficiency of the quality management system IS 14000: 2004 series, its importance ISO 19011: guidance on auditing and environmental management systems.		
<b>5. Principles of the Toyota way</b>				
	5.1	Introduction to Toyota way, Toyota production system (TPS), lean production, '4' P model of Toyota way.	04	12
	5.2	Toyota way principles and their meaning.		
<b>6. Six Sigma</b>				
	6.1	Introduction to six sigma, Psychology of six sigma,	06	12
	6.2	Six sigma DMAIC process		
	6.3	The six sigma players, their roles and Responsibilities. Champions , Master black Belts, Black belts, Green belts.		
	6.4	Factors to be considered while selecting a project for six sigma, Do's and Don'ts for making six sigma effective. Advantages of six sigma. The zero defects concept.		
<b>Total</b>			<b>48</b>	<b>80</b>

#### Instructional Strategy:

Sr. No.	Topic	Instructional Strategy
1.	Introduction	Lecture method
2.	Quality Management Foundation and introduction to total quality management.	Lecture method
3.	Quality Management Processes	Lecture method, Transparencies, Internet surfing.
4.	Quality Management Infrastructure	Lecture method, Transparencies, Internet surfing.
5.	Principles of the Toyota way	Lecture, Ppt& Discussion
6.	Six Sigma	Lecture method, Ppt& Discussion



**Text Books:**

Sr. No	Author	Title	Publication
1.	Dr. K.C.Arora	Total Quality Management	S.K.Kataria and sons
2.	B.Janakiraman and R.K. Gopal	Total Quality Management Text and cases	Prentice Hall of India pvt. Ltd. New Delhi.
3.	Subburaj	Total Quality Management	Tata Mc - Graw Hill Co., New Delhi.
4.	Gupta, Srinivas N & B Valarmathi	Total Quality Management	Tata Mc - Graw Hill Co., New Delhi.

**Reference Books:**

Sr. No	Author	Title	Publication
1.	Peter S.Pande Robert P. Neuman Roland R.Cavanagh	Six Sigma way	Tata Mc - Graw Hill Co., New Delhi.
2.	Jeffrey K. Liker	The Toyota Way	Tata Mc - Graw Hill Co., New Delhi.
3.	Suganthi and Samuel	Total Quality Management	Prentice Hall of India pvt. Ltd. New Delhi

**Learning Resources:** Books, journals, Internet searches.

**Specification Table:**

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1.	Introduction	08	--	--	08
2.	Quality Management Foundation and introduction to total quality management.	08	04	--	12
3.	Quality Management Processes	08	08	04	20
4.	Quality Management Infrastructure	08	08	--	16
5.	Principles of the Toyota way	08	04	--	12
6.	Six Sigma	08	04	--	12
<b>Total</b>		<b>52</b>	<b>28</b>	<b>--</b>	<b>80</b>

  
(Prof. P.U. Garge)  
Prepared By

(Prof. A.S. Zampure)  
Secretary, PBOS

(Prof. N.S. Kadam)  
Chairman, PBOS

Programme : Diploma in CE/ EF/ET/ ME/MT/ CM/IT/DDGM  
 Programme Code : 01/02/03/04/05/06 /07/08/21/22/23/24/26/15/16/17/18/19  
 Name of Course : Management Information System  
 Course Code : MA487

**Teaching Scheme:**

	Hours /Week	Total Hours
Theory	03	48
Practical	---	---

**Evaluation Scheme:**

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests, each of 60 Min. duration	03 Hrs.	---	---	---
Marks	20	80	---	---	---

**Course Rationale:**

MIS is a concept continuous to evolve, emerging trend consistent with the evolution of the MIS concept endures computing. It is the power of computers, which makes MIS feasible. It also deals with the impact of computers and information technology innovation and organizational design and planning. It is used to know how to manage any organization using Software requirement specification Data flow diagrams, coding techniques for evolution of manager. From this point of view, the course is introduced.

**Course Objectives:**

After studying this course, the student will be able to

- Understand the role of MIS in various functional areas of management.
- Understand the determination of requirement and analysis it to design information system necessary.
- Understand the supporting role of MIS in decision-making, problem solving
- Understand the management in finance department.
- Understand the role of coding techniques for authentication
- Develop and use different management skills
- Visualize the impact of information Technology in organizational communication & leadership
- Understand the concept of quality management
- Understand the use of database management system in MIS
- Understand the role of taxation in India by studying the types of taxes such as service tax, income tax, excise duty, VAT
- Determine the alternative solutions
- Understand various steps required to process any organization using system development cycle
- Understand the concept of Profit and loss, details about budgeting system

Course Contents:

Chapter No.	Name of Topic/Sub topic	Hrs	Weight age
1.	<b>Information Systems and Organizations</b>		
	1.1 Organizational and Information, System Structure, Data and Information, Management and Decision Making, Classification of Information Systems, Information support for functional areas of Management, Impact of Business on Information System, Organizing Information Systems	04	10
	1.2 Decision Support Systems: Definition, Evolution of DSS, Characteristics of DSS, Model Management, Group Decisions		
2.	<b>System Analysis and Design</b>		
	2.1 Organizational context of System Analysis, Role of System Analyst, System Development Life Cycle, Requirements Analysis	04	10
	2.2 System Requirements Specification: System requirements specification: Example, Data dictionary, Steps in Systems Analysis, Modularizing requirements specifications, Conclusions.		
3.	<b>Feasibility Analysis</b>		
	3.1 Deciding on project goals, Examining alternative solutions, Evaluating proposed solution, Cost-benefit analysis, Payback period, Feasibility report, and System proposal.	08	15
	3.2 Data flow diagrams: Symbols used in DFD's Describing a system with a DFD, Good conventions in developing DFDs Leveling of DFDs, Logical and Physical DFDs.		
	3.3 Process Specifications: Process specification methods, structured English Some examples of process specification.		
4.	<b>Management</b>		
	4.1 <b>Quality Management:</b> Specific Objectives: Meaning of Quality State Principles of Quality Management, Describe Modern Technique & Systems of Quality Management Quality Management System: Activities, Benefits Quality Control - Objectives, Functions, Advantages Quality Circle - Concept, Characteristics & Objectives Quality Assurance - Concept, Quality Assurance System Total Quality: Meaning of Total Quality Total Quality Management: Components of TQM, Elements of TQM, Benefits Modern Technique & Systems of Quality Management like 6-Sigma, ISO 9001:2000 - Benefits, Main clauses.	10	15



	4.2	<b>Financial Management</b> Specific Objectives: Explain functions of financial management; State the sources of finance & types of budgets, Describe concepts of direct & indirect taxes. Financial Management- Objectives & Functions Budgets and accounts :Types of Budgets Production Budget - Sample format: Labour Budget - Sample format, Profit & Loss Account & Balance Sheet: Meaning, sample format, Meaning of different terms involved. Meaning & Examples of - Excise Tax, ServiceTax, Income Tax, Value Added Tax, Custom Duty		
	4.3	Data input Methods: Data input, Coding techniques, Detection of error in codes, Validating input data, interactive data input.		
5.	<b>Executive Information System and Executive Support System</b>			
	5.1	Why EIS and ESS? Internal factor and External factor	10	15
	5.2	What is EIS and ESS? Characteristics of EIS and ESS		
	5.3	Informational characteristics, User Interface/Orientation Characteristics, Managerial/Executive Characteristics		
	5.4	EIS/ESS Capabilities and Benefits		
	5.5	Expert System-Definition,Components,Application and Limitations		
6.	<b>Management Issues in MIS</b>			
	6.1	Information Security and Control :Why breakIT System Security?	12	15
	6.2	Information System Security Threats: External Security Threats: Internet Connections,Remote Dial -in Capabilities Internal Security Threats: Passwords,User Terminations,Authorisation Levels, Special Privileges, Virus Checking, Audit Trails		
	6.3	Ethical And Social Dimensions		
Total			48	80

#### Instructional Strategy:

Sr. No.	Topic	Instructional Strategy
1.	Information and Management	Class room teaching for all
2.	Information Gathering	
3.	Feasibility Analysis	
4.	Decision Table	
5.	Database Management Systems (DBMS)	
6.	Control Audit and security of information systems	

#### Text Books:

Sr. No	Author	Title	Publication
1.	V Rajaraman	Analysis & design of Information system	PHI
2.	S.Sadagopan	Management Information Systems	PHI
3.	James A.O'Brien George M.Marakas	Management Information Systems - Tenth Edition	McGraw Hill

Reference Books:

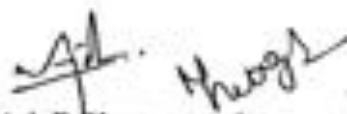
Sr. No	Author	Title	Publication
1.	Gordon B. Davis and Margeth H. Olson	MIS	
2.	Kroenke Davis	Management information System	2 <sup>nd</sup> edition
3.	Sein	MIS	
4.	Jawadekar W.S.	MIS	
5.	Millind Oka	MIS	
6.	Jayashankar	Decision Support Systems	
7.	Lucas	Information System Concepts for Management	4 <sup>th</sup> edition

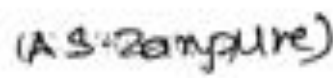
Learning Resources: OHP, LCD Projector and Transparency.

Specification Table:

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1.	Information and Management	04	04	02	10
2.	Information Gathering	04	02	04	10
3.	Feasibility Analysis	02	08	05	15
4.	Decision Table	02	08	05	15
5.	Database Management Systems (DBMS)	06	04	05	15
6.	Control Audit and security of information systems	04	05	06	15
Total		22	31	27	80

Prepared By

  
(Smt. A.B. Bhusagare &  
Smt. N.R. Wagh)

  
(A.S. Zampure)  
Member Secretary, PBOS

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Name of Programme : Diploma in CE/EE/ET/ME/MT/CM/IT  
 Programme Code : 01/02/03/04/05/06/07/15/16/17/18/19  
 Name of Course : Apparel Management  
 Course Code : MA488

**Teaching Scheme –**

	Hours / Week	Total Hours
Theory	03	48
Term Work / Practical	-	-

**Evaluation –**

	Progressive Assessment	Theory	Practical	Oral	Term Work
Duration	Two Class Tests of 60 Mins	03	-	-	-
Marks	20	80	-	-	-

**Course Aim –**

This course provides an introductory view of the managerial and technical factors which influence the day to day operation of a clothing factory. The course makes aware the students about the dramatic role of the fashion which changes frequently and guides to reconcile the conflicting requirements of the market and its manufacturing facilities in order to stay in business.

**Course Objective – Student will be able to –**

- Introduce the process, the structure, the technological environment of the apparel product development.
- Develop skills in the managerial ability of the organization of a clothing industry.
- Bifurcate various departments working together to run the activities of apparel product development such as design department, marketing department,



finance department, purchasing department, production department & operation department.

- Explore the ideas and views about forecasting, fashion trends, price structure, designing, collection, planning, pattern making, grading and producing a sample garment to work in the department of designing in a clothing industry.
- Acquire the skill of marketing by getting introduced to various managerial task of marketing such as pricing distributing the product, selling, sales forecasting and budgeting.
- Explore the manner in which production functions are operated such as product manufacturing function, service functions, production engineering, personnel and training, machinery and equipment maintenance, general maintenance, store, production planning and control, budgetary control.
- Give the importance of quality and can control the system to assure the required quality.

#### Course Content –

##### Section – I

Sr. No.	Topic / Subtopic	Hours	Weight age	Practical
1	<b>The Process and the Structure of the Apparel Industry</b> a) Structure b) Technological Environment of Product development. c) The process of product development	04	10	
2	<b>The Organization of a Clothing Industry</b> a) Principles of Management b) Definition of Management c) Functions of Management	06	10	

	Planning, Organizing, Staffing, Direction, Control.			
3	<b>Design Department</b> a) Forecasting b) Fashion Trends c) Price Structure d) Designing e) Collection f) Planning g) Pattern Making h) Production of Sample Garment i) Pattern Grading.	08	08	
4	<b>Marketing Department</b> a) Definition of Marketing Management b) Marketing calendar c) Product Pricing d) Price Evaluation e) Product Planning f) Customers g) Distribution h) Selling h) Sales Forecasting	06	12	

**Section – II**

Sr. No.	Topic / Subtopic	Hours	Weight age	Practical
5	<b>Finance Department</b> a) Definition of Finance Management b) Functions of the Finance Department c) Providing Management Information d) Budgeting	04	06	

	e) Garment Costing Administration			
6	<b>Purchasing Department</b> a) Objective of the Purchase Department b) Function of the Purchase Department c) Information of Suppliers d) Prices e) Processing f) Verification g) Speculative buying h) Store keeping i) Stock management j) Purchase Order.	06	08	
7	<b>Production Department</b> a) Objective and Functions of the Production department. b) Manufacturing Functions c) Service Functions d) Production Engineering e) Personnel and Training f) Machinery and Equipment Maintenance g) General Maintenance h) Technical Stores i) Control Functions j) Production Planning and Control h) Budgetary Control	08	12	
8	<b>Operations Department</b> a) Company calendar b) Pre production planning and control c) Order Concentration	05	14	



d) The Production order			
e) Production Planning and Control			
f) Marker and cut Planning			
g) Marker planning			
h) Cutting Room Production Planning			
i) Control Procedures			

Learning Resources: - Books, Magazines, Journals LCD, etc.

#### Reference Books

Author	Title	Publisher
Gerry Cooklin	Introduction to Clothing Manufacture	Hartniolls Ltd. Cornwall
Jones Richard M.	Apparel Industry	
Harold Carr-John Pomeroy	Fashion Design & Product Development	
Chuter A. J.	Introduction to Clothing Production Management	London BSP pro Books
Diamond Jay	Retail Buying	
Devid J. Tyles	Material Management in Clothing Production	Book Base Ltd.

#### Specification Table -

Sr. No.	Topic	Knowledge	Comprehension	Application	Total
1.	<u>Section - I</u> The Process and the Structure of the Apparel Industry	04	02	04	10
2.	The Organization of a Clothing Industry	04	02	04	10
3.	Design Department	02	02	04	08

4.	Marketing Department	04	04	04	12
5.	<b>Section – II</b> Finance Department	02	02	02	06
6.	Purchasing Department	04	02	02	08
7.	Production Department	04	04	04	12
8.	Operations Department	06	04	04	14

**Instructional Strategy -**

Sr. No.	Topic	Instructional Strategy
1.	<b>Section – I</b> The Progress and the Structure of the Apparel Industry	Theoretical treatment
2.	The Organization of a Clothing Industry	Theoretical treatment
3.	Design Department	Theoretical treatment
4.	Marketing Department	Theoretical treatment
5.	<b>Section – II</b> Finance Department	Theoretical treatment
6.	Purchasing Department	Theoretical treatment
7.	Production Department	Theoretical treatment
8.	Operations Department	Theoretical treatment

Prepared by

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