

**PEOPLE'S UNIVERSITY, BHOPAL*****(Applicable for Admitted from Academic Session 2019-20 onwards)***

Programme: Diploma in Engineering

Semester –VI

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External	Internal	Total
DME16011	Industrial Management and Entrepreneurship Development	3	1	-			Min: 40 (D Grade)	Nil	Nil	Nil

**Duration of Theory (Externals): 3 Hours**

<b>Theory Internal- Max Marks: 30</b>	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
<b>Practical Internal Max Marks: - Nil</b>	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/attendance- Max. Marks: Nil

<b>Pre-Requisite</b>	Nil
<b>Course Outcome</b>	1.Ability to have the knowledge of Management skills. 2.Understand the different aspects of production management. 3.Understand the role of materials management industries.

Unit	Content (Theory)	Marks Weightage
I	<b>Principles of Management:</b> Definitions of Industry, Commerce and Business. Evolution of management theories. Principles of Scientific Management, functions of management. Difference of administration and management, Value Engineering and Value Analysis.	14
II	<b>Organization Structure &amp; Organizational Behavior:</b> Role of industry, Types of ownership – Sole proprietorship, Partnership, Private limited, Public limited company, Industrial Cooperatives, Philosophy, types of Organizations, Line and Staff and functional organizations. Advantages and limitations, departments in a large scale industry. Effective organization. Job analysis, Assessing applicants, selection, motivation, different theories, Leadership in organization, decision making, communication,	14
III	<b>Marketing, Sales &amp; Feasibility Study:</b> Sellers and Buyers markets, Marketing, Sales, Market conditions, monopoly, Pricing Policies. Elements of Cost, Contribution, Break even analysis, Market Survey, Product and production Analysis, Materials input, Manpower, Location, Economic and Technical Evaluation, preparation of Feasibility study reports, - different products – Mechanical, Consumer desires etc.	14
IV	<b>Introduction to ISO 9000 and TQM:</b> Concept of quality discussed by B. Crosby W. Edward, Deming, Taguchi. Quality systems – Definitions of the terms used in quality systems like, quality policy, quality management, quality systems, quality control and quality assurance. Elements quality systems: Management responsibility, Necessity of International standards – Evolution of ISO. 5-S principles – importance – meaning – approach – benefits Various standards under ISO.	14
V	<b>Role of Entrepreneur &amp; Entrepreneurial Development:</b> Concept, definition, role, expectation, entrepreneurship Vs Management, promotion of S.S.I. Self – employment schemes. Product selection, site selection, plant layout, profile and requirement, Institutional Support Needed, Financial Assistance Program.	14

**Text Book/References Books/ Websites:**

1. O.P Khanna , Industrial Engineering and Management ; Dhanpat Rai Publication
2. Banga & Sharma.,Engineering Economics and Management Science; Dhanpat Rai Publication
3. Martund & Telsung ,Industrial Engineering and Management ; S.Chand Publication
4. Entrepreneurship ; NITTT&R, Chennai.
5. Robert Tuchman, Entrepreneurship, American Management Association,

**Suggested List of Laboratory Experiments (Expandable):- Nil**

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total
DME16012	Industrial Engineering & Safety Management	3	1	-	(70)	(30)	Min: 40 (D Grade)	Nil	Nil	Nil

**Duration of Theory (Externals): 3 Hours**

<b>Theory Internal- Max Marks: 30</b>	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance Max. Marks: 15
<b>Practical Internal Max Marks: Nil</b>	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance- Max. Marks: Nil

<b>Pre-Requisite</b>	General study of management and safety management.
<b>Course Outcome</b>	1. Ability to understand about industrial planning, process planning and material handling
	2. To understand about inventory control and job distribution.
	3. To understand about safety and its importance in industrial work

Unit	Contents (Theory)	Marks Weightage
<b>I</b>	<b>Introduction:</b> Industrial Production, Planning and Control: Definition and importance, types of production -job, batch and mass forecasting, routing, scheduling, dispatching. Break even analysis and Gantt chart, application of CPM and PERT techniques.	<b>14</b>
<b>II</b>	<b>Inventory Control:</b> Definition, types of inventory - Codification and standardization, ABC analysis. Economic ordering quantity, Procurement cost, carrying charges, re-order point, simple problems. Types of inspection and procedure Statistical quality control – Basic theory of quality control, relationship between control limits and specification limits.	<b>14</b>
<b>III</b>	<b>Job Evaluation and Wage Plans &amp; Industrial Legislation:</b> Objective, Methods of job evaluation, job evaluation procedure, merit rating (Performance appraisal), method of merit rating, wage and wage incentive plans	<b>14</b>
<b>IV</b>	<b>Safety Concepts And Techniques:</b> History of Safety movement, Evolution of modern safety concept, General concepts of management, Planning for safety for optimization of productivity, Quality and safety, Line and staff functions for safety, Budgeting for safety, Safety policy,	<b>14</b>
<b>V</b>	<b>Safety Performance Monitoring:</b> Recommended practices for compiling and measuring work injury experience, Permanent total disabilities, Permanent partial disabilities, Temporary total disabilities, <b>Safety Education And Training:</b> Importance of training, Identification of training needs, Training methods, Method of promoting safe practice motivation, Communication Domestic Safety and Training.	<b>14</b>

**Text Book/References Books/ Websites:**

1. Benjamin E Niebel and Freivalds Andris; Methods Standards & Work Design; Tata McGraw Hill.
2. S.Sanders Mark, J. McCormick Ernert; Human Factors in Engineering and Design; Tata McGraw-Hill
3. E .Marvin, Mundel & David L; Motion & Time Study: Improving Productivity; Pearson Education
4. Dan Petersen, Techniques of Safety Management; Tata McGraw Hill Company
5. N.V. Krishnan ; Safety Management in Industry; Jaico Publishing House

**Suggested List of Laboratory Experiments :- (Expandable): Nil**

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total
DME16013 (Elective)	Renewable Energy Sources	3	1	-	External (70)	Internal (30)	Min: 40 (D Grade)	Nil	Nil	Nil

**Duration of Theory (Externals): 3 Hours**

<b>Theory Internal- Max Marks: 30</b>	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
<b>Practical Internal Max Marks: Nil</b>	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance- Max. Marks: Nil

<b>Pre-Requisite</b>	General study of Energy Sources
<b>Course Outcome</b>	1. Currents scenario of Energy Demand.
	2. Basic need of country for economics growths.
	3. Sustainable development.

Unit	Contents (Theory)	Marks Weightage
I	<b>Solar Power:</b> Introduction, Solar Photovoltaic, History and projection, Advantage & Disadvantage of Photovoltaic Systems, Cells, <b>Solar Photovoltaic:</b> Basic principle of power generation in a PV cell; Band gap and efficiency of PV cells; Component of PV System, Solar Cells. <b>Solar Thermal:</b> thermal storage; Solar thermal applications - water and space heating; solar ponds; dryers; distillation; solar cooker.	14
II	<b>Hydro Power Generation,</b> Hydro Turbine, Large medium and small hydro power station, Electrical Energy Generation, concepts, various types of generating stations and their locations. Study of Thermal, Hydel, Nuclear and Non Conventional energy generation schemes. Block diagram of various power stations.	14
III	<b>Global Environmental Concerns:</b> United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, Conference of Parties (COP), Various Clean Development Mechanism (CDM), Prototype Carbon fund (PCF), Earth Summit, Sustainable development.	14
IV	<b>Wind Energy Conversion System</b> Wind machine types, classification, parameters. Wind, its structure, statistics, measurements, data presentation, power in the wind. Wind turbine aerodynamics, momentum theories, basic aerodynamics, airfoils and their characteristics, Horizontal Axis Wind Turbine (HAWT)	14
V	<b>Environment Policies:</b> Water Act 1974, The Air Act, 1981, Environmental (Protection) Act.-1986, M. P. State Environment Policy, Municipal Solid Waste (Management & Handling) Rules, 1998, Biomedical Waste (Management & Handling) Rules 1998.	14

**Text Book/References Books/ Websites:**

1. H.P. Garg, J Prakash ,Solar Energy fundamentals & applications;McGraw Hill Education
2. Chetan Solanki, Solar Energy Technologies;PHI publication
3. L. Monition, J. Roux, M. Le Nir, Micro Hydroelectric Power Stations ; Wiley Publication
4. www.uneptie.org
5. www.cpcb.nic.in

**Suggested List of Laboratory Experiments (Expandable):- Nil**

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External	Internal	Total
DME1602	Machine Design	3	1	-			Min: 40 (D Grade)	Nil	Nil	Nil

**Duration of Theory (Externals): 3 Hours**

<b>Theory Internal- Max Marks: 30</b>	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
<b>Practical Internal Max Marks: -Nil</b>	Lab work & Sessional – Max Marks: -Nil	Assignment / Quiz/Attendance- Max. Marks: -Nil

<b>Pre-Requisite</b>	Fundamental knowledge of Applied Mechanics, Strength of Materials, Engineering Materials and Theory of Machines is essential. To develop analytical abilities to give solutions to engineering design problems.
<b>Course Outcome</b>	1. Ability to apply the fundamentals of stress analysis, theories of failure and material science in the design of machine components 2. Use design data books and different codes of design. 3. Select standard components i.e. Fastener, Shafts, Keys, springs, Gears, Bearing with their specifications and design process.

**# Use of machine design data book is permitted in the exam hall.**

Unit	Contents (Theory)	Marks Weightage
<b>I</b>	<b>Introduction to Design:</b> Machine Design philosophy and Procedures, General Considerations in Machine Design, Factor of Safety and Factors governing selection of factor of Safety, Stress Concentration – Causes & Remedies, Properties of Engineering materials, Factors influencing selection of materials, use of design data book, standardization, Interchangeability, Use of standards in design Types of loading, Types of forces, Type of failures, Theories of Elastic Failures – Principal Normal Stress Theory, Maximum Shear Stress Theory & Maximum Distortion Energy Theory.	<b>14</b>
<b>II</b>	<b>Design of Fasteners:</b> Type of fastening - temporary and permanent, types of riveted joint Modes of failure of riveted joint, types of welded joints, Design of parallel and transverse fillet welds, Types of bolts, proportion of nut and bolt dimensions, bolts of Uniform Strength, Design of Bolted Joints subjected to eccentric loading, Stresses in Screwed fasteners, Merits and demerits of screwed and welded joints. <b>Design of machine parts:</b> Cotter Joint, Knuckle Joint.	<b>14</b>
<b>III</b>	<b>Design of Shafts, Keys and Couplings:</b> Types of Shafts, Shaft materials, Standard Sizes, Design of Shafts (Hollow and Solid) using strength and rigidity criteria, Design an axle, types of keys, Design of square, parallel and Sunk Keys, Effect of Keyways on strength of shaft, Design of Couplings – Muff Coupling, Rigid Flange Coupling.	<b>14</b>
<b>IV</b>	<b>Design of springs:</b> Classification and Applications of Springs, Spring – terminology, materials and specifications, Stresses in springs, Wahl's correction factor, Deflection of springs, Energy stored in springs, Design of Helical tension and compression springs subjected to uniform applied loads like I.C. engine valves, weighing balance, railway buffers and governor springs, Leaf springs – construction and application. <b>Design of Spur Gear:</b> Gear classifications and terminology, materials and failure modes, Spur gear design procedure and considerations. Lewis equation for static beam strength of spur gear teeth. Power transmission capacity of spur gears in bending, interference and undercutting.	<b>14</b>

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<b>V</b>	<b>Design of Bearing:</b> Selection of Rolling and Sliding contact Bearing: Types of rolling contact bearing, Selection of bearing type, self aligning, load life relationship, bearing life, load factor, design for cyclic loads and speeds, bearing installation. Application of bearing. Basic principle of Hydro dynamic and Hydro static bearing. Bearing modulus and Bearing characteristics number, selection of lubricant, Bearing failure- causes and remedies.	<b>14</b>
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**Text Book/References Books/ Websites:**

1. V.B.Bhandari; Design of Machine Elements; Tata Mc- Graw Hill.
2. R.K.Jain; Machine Design; Khanna Publication.
3. Abdulla Shariff; Hand Book of Properties of Engineering Materials & Design Data for Machine Elements; Dhanpat Rai & Sons
4. P.C. Sharma and D.K. Aggarwal, A Text Book of Machine Design; S.K. Kataria & Sons.
5. Joseph Edward Shigley; Mechanical Engg. Design Mc-Graw Hill
6. Design Data Book by V.B. Bhandari.
7. Design Data Book by PSG Coimbtore.
8. Design Data Book by Mahadevan.

**Suggested List of Laboratory Experiments:- (Expandable): Nil**



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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100) Min: 40 (D Grade)	External (35)	Internal (15)	Total (50) Min: 20 (D Grade)
DME1603	Measurement and Control	3	1	1						

**Duration of Theory (Externals): 3 Hours**

<b>Theory Internal- Max Marks: 30</b>	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
<b>Practical Internal Max Marks: 15</b>	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance Max. Marks: 05

<b>Pre-Requisite</b>	General study of different measurement concepts.
<b>Course Outcome</b>	1. Design and implement complete measurement systems. 2. Learn how to evaluate errors that accompany a measurement and conduct experimental uncertainty analysis. 3. Use basic tools required to gather information about physical systems.

Unit	Contents (Theory)	Marks Weightage
I	<b>Significance of Measurement:</b> Classification of instruments, Static terms and characteristics-range and span, Accuracy and Precision, Reliability, Calibration, Hysteresis and Sensitivity, Threshold and Resolution, repeatability and Reproducibility, linearity. Dynamic Measurement of Error- classification of Errors, Environmental errors, Signal Transmission Errors, Observation errors, operational errors. Specification, Selection and application for Pressure, temperature, flow, humidity, displacement, Velocity, Force, Strain, Sound	14
II	<b>General Measurement Concept:</b> Limits, Fits and Tolerances, selection of Fit, calculation of fundamental deviation, Tolerance and limits, selection of limits, Tolerances and Allowances.	14
III	<b>Linear Measurement:</b> Standards of length, classification and use of Slip Gauges, wringing process, Precautions to be observed while using slip gauges, classification of linear Measuring instrument, direct and Indirect, construction and working of Vernier Callipers, Micrometers, Vernier Height Gauge, Dial Vernier and Dial Height Gauge, Finding Least Count, Precautions. Dial Gauge	14
IV	<b>Angular Measurement:</b> Need of angular measurement, various instruments used. Methods of measurement and field of application of Protractor, angle gauges, Sine bars, spirit levels, Clinometers and angle Dekkor.	14
V	<b>Control Systems:</b> Block diagram of Automatic Control System, Closed Loop System, Open Loop System, Feed Back Control System, Feed Forward Control System, Servomotor Mechanism, comparison of Hydraulic, Pneumatic, electronic control systems, Proportional control action. Applications of measurements and control for setup for boilers, Air Conditioners, Motor Speed Control.	14

**Text Book/References Books/ Websites:**

1. Bejwith Buck; Mechanical Measurement ; Addison Wesley Pub. London
2. W.G. Holzbock; Instruments For Measurement Control ; Rainold Pub. Co-operation
3. R.K. Jain; Mechanical & Industrial Measurement ; Khanna Publishers New Delhi .
4. Yogendra Varshneya ; Maap Vigyan Avum Yantrikaran ( Hindi ) ; Deepak Prakashan, Morar,Gwalior)
5. H.P. Garg ; Industrial maintenance ; S. CHAND & Company Ltd

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**Suggested List of Laboratory Experiments (Expandable): -**

1. Measurement of strain by using a basic strain gauge and hence verify the stress induced.
2. Speed Measurement by using Stroboscope / Magnetic / Inductive Pick Up.
3. Measurement of flow by using rotameter.
4. Displacement measurement by inductive transducer.
5. Temperature control using Thermal Reed switch & Bimetal switch.
6. Temperature calibration by using Thermocouple.
7. Determination of negative temperature coefficient and calibration of a thermister.
8. Measurement of force & weight by using a load cell.
9. Liquid Level Measurement by using Capacitive Transducer system.
10. Verify characteristics of photo transducer & photo diode.

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100) Min: 40 (D Grade)	External (35)	Internal (15)	Total (50) Min: 20 (D Grade)
DME1604	Refrigeration and Air Conditioning.	3	1	1						

**Duration of Theory (Externals): 3 Hours**

<b>Theory Internal- Max Marks: 30</b>	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance Max. Marks: 15
<b>Practical Internal Max Marks: 15</b>	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance Max. Marks: 05

<b>Pre-Requisite</b>	General study of thermal Engineering
<b>Course Outcome</b>	1. Fundamental principles and applications of refrigeration and air conditioning system 2. Fundamental principles and applications of refrigeration and air conditioning system. 3. Present the properties, applications and environmental issues of different refrigerants

Unit	Contents (Theory)	Marks Weightage
I	<b>Basics of Refrigeration:</b> Definition of refrigeration , Necessity of Refrigeration , Methods of Refrigeration:- Ice refrigeration by expansion of air Refrigeration by Throttling of gas Vapour Refrigeration System Steam Jet Refrigeration System Concept of Heat Engine, Heat Pump and Refrigerator , Unit of refrigeration, C.O.P. and Refrigerating Effect , Major application areas of R.A.C. like Domestic, Commercial and Industrial	14
II	<b>Refrigeration Cycles:</b> Reversed Carnot Cycle and its representation on PV and TS diagram , Air Refrigeration Cycles, Vapor Compression Cycle (V.C.C): - Principle, Components, Representation on P-H and T-S diagram, effects of Wet Compression, Dry Compression, Calculation of COP, Effect of Superheating, under Cooling, Suction Pressure and discharge pressure, Actual V.C.C., (simple numerical), Methods of improving COP (No Description). - Introduction to Multistage V.C.C., its Necessity, Advantages.	14
III	<b>Vapour Absorption System:</b> Comparison between Vapour Compression and Vapour Absorption System, The Theoretical and Practical Vapour Absorption System, Lithium Bromide- Water Absorption System, Three Fluid System. (Electrolux Systems).	14
IV	<b>Refrigerants:</b> Classification of refrigerants , Desirable Properties Of Refrigerants , Nomenclature of Refrigerants , Selection of Refrigerant for specific applications , Concept of Green House Effect, Ozone Depletion, Global Warming , Eco-Friendly Refrigerants like R-134a, Hydrocarbon Refrigerants etc.	14
V	<b>Air- Conditioning Systems:</b> Classification of A.C. systems, Industrial and commercial A.C. systems, summer, winter and Year Round A.C. Systems, Central and Unitary A.C. Systems, Application Areas of A.C. Systems	14

**Text Book/References Books/ Websites:**

1. R.S.Khurmi ; Refrigeration and Air Conditioning ,S.Chand and Co
2. Arora and Domkundwar ; Refrigeration and Air Conditioning, Dhanpat Rai and Sons
3. Manohar Prasad; Refrigeration and Air Conditioning ; New Age Publications
4. P.N.Ananthanarayanan ; Refrigeration and Air Conditioning; Tata McGraw Hill
5. Roy Dossat ; Principles of Refrigeration; Pearson Education



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**Suggested List of Laboratory Experiments :- (Expandable)**

1. Trial on water cooler test rig.
2. Trial on ice plant test rig.
3. Visit to cold storage
4. Demonstration of domestic refrigerator in View of construction, operation and controls used.
5. Demonstration of various controls like L.P. /H.P. cut outs, thermostat, overload protector, solenoid valve used in RAC.
6. Identification of components of 'hermetically sealed compressor'.
7. Visit to repair and maintenance workshop in view of use of various tools and charging procedure.
8. Cooling load calculations for cabin, classrooms, laboratory, canteen and dairy plant, milk storage, small freezers (minimum one).
9. Trial on A.C. test rig.
10. Visit to central A.C. plant in view of ducting system, insulation system and Air distribution system (e.g. frozen food industry/ice- cream industry/mushroom plants/textile industries).
11. Trouble shooting of domestic refrigerator/window air- Conditioner

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (Nil)	Internal (Nil)	Total	External (175)	Internal (75)	Total (250) Min: 100 (D Grade)
DME1605	Major Project	-	-	5			Nil			

**Duration of Theory (Externals): -**

<b>Theory Internal- Max Marks: -Nil</b>	Best of Two Mid Semester Test – Max Marks: -Nil	Assignment/Quiz/Attendance- Max. Marks: -Nil
<b>Practical Internal Max Marks: 75</b>	Lab work & Sessional – Max Marks: -70	Assignment / Quiz/Attendance- Max. Marks: 05

<b>Pre-Requisite</b>	Knowledge of concern subjects.
<b>Course Outcome</b>	The student will be able to-An ability to utilize technical resources. 1. Identify, analyze & define the problem. 2. Generate alternative solutions to the problem identified. 3. Compare & select feasible solutions from alternatives generated. 4. Design, develop, manufacture & operate equipment/program. 5. Acquire higher-level technical knowledge by studying recent development in Engineering field. 6. Compare machines/devices/apparatus for performance practices. 7. Work effectively in a team.

Unit	Contents (Theory)	Marks Weightage
I	The student should prepare a working system or some design or understanding of a complex system that he has selected for his project work using system analysis tools and submit the same in the form of a write-up i.e. detail project report. The student should maintain proper documentation of different stages of project such as need analysis, market analysis, concept evaluation, requirement specification, objectives, work plan, analysis, design, implementation and test plan wherever applicable. Each student is required to prepare a project report based on the above points and present the same at the final examination with a demonstration of the working system if applicable.  Evaluation will be based on his performance in technical work pertaining to the solution of a small size problem, project report, and presentation of work and defending it in a viva-voce	250

**Text Book/References Books/ Websites: Nil****Suggested List of Laboratory Experiments :- (Expandable): Nil**

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (Nil)	Internal (Nil)	Total	External	Internal (50)	Total (50)
DPE1606	Development of Professional Ethics	-	-	1	External (Nil)	Internal (Nil)	Nil	Nil	Min: 20	Min: 20 (D Grade)

**Duration of Theory (Externals): -**

<b>Theory Internal- Max Marks: Nil</b>	Best of Two Mid Semester Test – Max Marks: -Nil	Assignment/Quiz/Attendance- Max. Marks: -Nil
<b>Practical Internal Max Marks: 50</b>	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance- Max. Marks: 50

<b>Pre-Requisite</b>	Nil
<b>Course Outcome</b>	Ability to use of presentation aids, Presentation skills, INTERVIEW TECHNIQUE , Task Management and ethics

Unit	Contents (Theory)	Marks Weightage
I	<b>Presentation Skills</b> Body Language -- Dress Like The Audience Posture, Gestures, Eye Contact And Facial Expression. Presentation Skill – Stage Fright, Voice And Language – Volume, Pitch, Inflection, Speed, Pause; Pronunciation, Articulation, Language, Practice Of Speech; Use Of Aids –OHP,LCD Projector, White Board	50
	<b>Group discussion and Interview technique –</b> Introduction to group discussion, Ways to carry out group discussion, Parameters— Contact, body language, analytical and logical thinking, decision making <b>INTERVIEW TECHNIQUE</b> Necessity, Tips For Handling Common Questions.	
	<b>Working in Teams:</b> Understand and work within the dynamics of a groups. Tips to work effectively in teams, Establish good rapport, interest with others and work effectively with them to meet common objectives, Tips to provide and accept feedback in a constructive and considerate way, Leadership in teams, handling frustrations in group.	
	<b>Professional Ethics:</b> The foundations and norms of professional ethics. The need for separate code of conduct for professionals. The relation between professional and general ethics. Moral conflict and the issue of autonomy of professional ethics. Impact of Violation of Professional Ethics on Society, Remedies.	

**Text Book/References Books/ Websites:**

1. Michael Hatton ;Presentation Skills ( Canada – India Project) ;ISTE New Delhi
2. Richard Hale ,Peter;Target setting and Goal Achievement; Whilom Kogan page India
3. Chakravarty, Ajanta ;Time management ;Rupa and Company
4. Harding ham; Working in Teams;.A Orient Longman.
5. Koehn, D.; The Ground of Professional Ethics, Routledge, 1995.
6. Wuest, D.E; Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

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**Suggested List of Laboratory Experiments :- (Expandable):**

1. Deliver a seminar for 10-12 minutes using presentation aids on the topic given by your teacher.
2. Watch/listen an informative session on social activities. **Make a report** on topic of your interest using audio/visual aids.
3. **Mini Project** on Task Management. Decide any task to be completed in a stipulated time with the help of teacher. Write a report on the group task assigned by teacher related to social and technical activities.
4. Conduct an interview of a personality and write a report on it.
5. Discuss a topic in a group and prepare minutes of discussion. **Write thorough description** of the topic discussed.
6. **Arrange an exhibition**, displaying flow-charts, posters, paper cutting, photographs etc on the topic given by your teacher.