

***Faculty of Engineering & Technology***

***P.K. University***

***Shivpuri (MP)***



**Evaluation Scheme & Syllabus for**  
**(Department of Mechanical Engg.)**

**Diploma-( Mechanical Engg.)**  
**( V Semester)**

**(Effective from Session 2025-26)**

# EVALUATION SCHEME

## DIPLOMA MECHANICAL ENGG. (V SEMESTER)

| Study And Evaluation Scheme For Diploma Mechanical Engineering |                                                      |              |   |   |         |                            |    |     |                     |    |     |                                    |
|----------------------------------------------------------------|------------------------------------------------------|--------------|---|---|---------|----------------------------|----|-----|---------------------|----|-----|------------------------------------|
| SEMESTER-V                                                     |                                                      |              |   |   |         |                            |    |     |                     |    |     |                                    |
| SUBJECT CODE                                                   | SUBJECTS NAME                                        | STUDY SCHEME |   |   | Credits | MARKS IN EVALUATION SCHEME |    |     |                     |    |     | Total Marks of Internal & External |
|                                                                |                                                      | Periods/Week |   |   |         | INTERNAL ASSESSMENT        |    |     | EXTERNAL ASSESSMENT |    |     |                                    |
|                                                                |                                                      | L            | T | P |         | Th                         | Pr | Tot | Th                  | Pr | Tot |                                    |
| DINDUME501                                                     | Industrial Management & Entrepreneurship Development | 4            | - | - | 4       | 30                         | -  | 30  | 70                  | -  | 70  | 100                                |
| DTHEOME502                                                     | Theory of Machines                                   | 3            | 1 | - | 4       | 30                         | -  | 30  | 70                  | -  | 70  | 100                                |
| DMACHME503                                                     | Machine Tool Technology & Maintenance                | 3            | 1 | - | 4       | 30                         | -  | 30  | 70                  | -  | 70  | 100                                |
| DDESIME504                                                     | Design and Estimation                                | 3            | 1 | - | 4       | 30                         | -  | 30  | 70                  | -  | 70  | 100                                |
| DPRODME505                                                     | Production Technology I                              | 3            | 1 | - | 4       | 30                         | -  | 30  | 70                  | -  | 70  | 100                                |
| DINTEME506                                                     | Integrative Communication Lab                        | 0            | 0 | 2 | 1       |                            | 25 | 25  |                     | 25 | 25  | 50                                 |
| DINDUME507                                                     | Industrial Training                                  | -            | - | - | 2       | -                          | -  | -   | -                   | -  | 50  | 50                                 |
| Total                                                          |                                                      | 16           | 4 | 2 | 23      | 150                        | 25 | 175 | 350                 | 25 | 425 | 600                                |

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**III YEAR V SEMESTER**

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**DINDUME501**  
**INDUSTRIAL MANAGEMENT AND ENTREPRENEURSHIP DEVELOPMENT**

1. *Principles of Management*
  - 1.1 Management, Different Functions: Planning, Organizing, Leading, Controlling.
  - 1.2 Organizational Structure, Types, Functions of different departments.
  - 1.3 Motivation: Factors, characteristics, methods of improving motivation, incentives, pay, promotion, rewards, job satisfaction, job enrichment.
  - 1.4 Need for leadership, Functions of a leader, Factors for accomplishing effective leadership, Manager as a leader, promoting team work.
2. *Human Resource Development*
  - 2.1 Introduction, objectives and functions of human resource development (HRD) department.
  - 2.2 Recruitment, methods of selection, training strategies and career development.
  - 2.3 Responsibilities of human resource management – policies and functions, selection – Mode of selection – Procedure – training of workers, Job evaluation and Merit rating.
3. *Wages and Incentives*
  - 3.1 Definition and factors affecting wages, methods of wage payment.
  - 3.2 Wage incentive – type of incentive, difference in wage, incentive and bonus; incentives of supervisor.
  - 3.3 Job evaluation and merit rating.
4. *Human and Industrial Relations*
  - 4.1 Industrial relations and disputes.
  - 4.2 Relations with subordinates, peers and superiors.
  - 4.3 Characteristics of group behavior and trade unionism.
  - 4.4 Mob psychology.
  - 4.5 Grievance, Handling of grievances.
  - 4.6 Agitations, strikes, Lockouts, Picketing and Gherao.
  - 4.7 Labour welfare schemes. 4.8 Workers' participation in management.
5. *Professional Ethics*
  - 5.1 Concept of professional ethics.
  - 5.2 Need for code of professional ethics.
  - 5.3 Professional bodies and their role.
6. *Sales and Marketing management*
  - 6.1 Functions and duties of sales department.
  - 6.2 Sales forecasting, sales promotion, advertisement and after sale services.
  - 6.3 Concept of marketing. 6.4 Problems of marketing.
  - 6.4 Pricing policy, break even analysis.
  - 6.5 Distribution channels and methods of marketing.
7. *Labour Legislation Act (as amended on date)*
  - 7.1 Factory Act 1948.

- 7.2 Workmen's Compensation Act 1923.
- 7.3 Apprentices Act 1961. 7.4 PF Act, ESI Act.
- 7.4 Industrial Dispute Act 1947.
- 8. *Employers State Insurance Act 1948.***
  - 8.1 Payment of Wages Act, 1936.
  - 8.2 Intellectual Property Rights Act
- 9. *Material Management***
  - 9.1 Inventory control models.
  - 9.2 ABC Analysis, Safety stock, Economic ordering quantity.
  - 9.3 Stores equipment, Stores records, purchasing procedures, Bin card, Cardex.
  - 9.4 Material handling techniques.
- 10. *Financial Management***
  - 10.1 Importance of ledger and cash book.
  - 10.2 Profit and loss Account, Balance sheet.
  - 10.3 Interpretation of Statements, Project financing, Project appraisal, return on investments.
- 11. *Entrepreneurship Development***
  - 11.1 Concept of entrepreneur and need of entrepreneurship in the context of prevailing employment conditions.
  - 11.2 Distinction between an entrepreneur and a manager.
  - 11.3 Project identification and selection.
  - 11.4 Project formulation.
  - 11.5 Project appraisal.
  - 11.6 Facilities and incentives to an entrepreneur.
- 12. *Fundamental of Economics***
  - 12.1 Micro economics.
  - 12.2 Macro economics.
- 13. *Accidents and Safety***
  - 13.1 Classification of accidents based on nature of injuries, event and place.
  - 13.2 Causes and effects of accidents.
  - 13.3 Accident-prone workers.
  - 13.4 Action to be taken in case of accidents with machines, electric shock, fires and erection and construction accidents.
  - 13.5 Safety consciousness and publicity.
  - 13.6 Safety procedures.
  - 13.7 Safety measures – Do's and Don'ts and good housekeeping.

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**DTHEOME 502**  
**THEORY OF MACHINES**

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- 1. MECHANISMS AND MACHINES:** Definition, Kinematic pairs, types of mechanism, Special types of mechanism, Space mechanisms.
- 2. KINEMATIC ANALYSIS & SYNTHESIS:** Displacement, Velocity and Acceleration of plane mechanism, Graphical and analytical techniques, Synthesis of mechanisms - Crank Rockers, Four Bar Mechanisms, Slider Crank Mechanisms.
- 3. DYNAMICS OF MACHINES :** Static and dynamic force analysis, Graphical and analytical approaches, Engine mechanisms, Turning moment diagram, Flywheel analysis, Gyroscopic action in machines.
- 4. GOVERNORS:** Types and classification, Principle of working of gravity controlled and spring controlled governors, Stability, Isochronisms, Sensitivity and capacity.
- 5. UNBALANCE IN MACHINES, ENGINES AND BALANCING :** Origin of unbalanced forces and moments and effects of unbalance, Unbalance in rotating bodies and balancing of discs and rotors, Balancing machines, Field balancing of discs and rotors, Unbalance in reciprocating machines - engine, Compressor, Presses. Unbalance force and moment in a single cylinder engine and balancing, Multi cylinder engine balancing in Line engine, V and Radial engines, Lanchester balancing techniques.
- 6. CAMS AND CAM FOLLOWER MECHANISMS :** Purpose of using cam- Follower mechanisms, types of cams and cam follower mechanisms, Nomenclature synthesis of disc cam profiles for prescribed follower motion, determination of basic dimension, Graphical and analytical approaches for different types of followers, Dynamics of cam - follower systems - Jump and crossover stock.
- 7. GEARS AND GEAR DRIVES :** Power transmission by gears and fundamental law of gearing, Involute profile and conjugate action, Characteristics of involute tooth gear - Pinion to system, Under cutting and interference, Minimum number teeth, types of gears, Various gear drives - Spur, Helical, worm and Bevel gear, Gear train - Simple compound and epicycle gear trains, Differential gears.
- 8. VIBRATION & NOISE CONTROL:** Introduction to single DOF-2, DOF and Multi Degree Freedom System, Free and Forced response, Vibration of Continuous System: Strings, bars, beams and plates. Force Transmissibility, Design of Vibration Isolators and Absorber. Torsion Vibration, Basic of Acoustics, Solution of 1-D and 3-D wave equation, Sound Field Characterization, Principles of Noise Control, Sound Control Materials : Absorbers, Barriers and Damping, Materials, Silencers, Introduction to Active Noise and Vibration Control.

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**MACHINE TOOL TECHNOLOGY & MAINTENANCE**

- 1. BASIC FEATURES AND KINEMATICS:** Various types of machining operations and machine tools. Common features of all basic machine tools, work holding and tool holding devices, Drive systems, sources of power, Bed, body or frame. Mechanical drive system for providing reciprocating, oscillating and rotational movement. Systems of stepped and step less, friction and positive drives. Principle of setting upper, Lower and Intermediate speeds. Mechanical methods of providing automaticity in machine tools.
- 2. CENTRE LATHE:** The center lathe and its principle of working. Types of lathes, Lathe specification and size, Features of lathe bed. Head stock and tail stock. Feed mechanism and change- gears, carriage saddle, Cross slide, Compound rest, Tools post, Apron mechanism, lathe accessories, Chucks, Face plate, Angle plate, Driving plate, Lathe dogs, man drills, Steady rest, Lathe attachments. Lathe operations-plane and step turning, Taper turning, Screw cutting, Drilling, Boring, reaming, Knurling, Parting off, Under cutting, Relieving. Types of lathe tools and their uses. Brief description of semi automatic and automatic lathes such as capstan and turret lathes, their advantages and disadvantages over Centre lathe, types of job done on them. General and periodic maintains of a Centre lathe.
- 3. SHAPING, PLANING & SLOTTING MACHINES:** Working principles of planer, shaper and spotter. Differences and similarities among them, quick return mechanism applied to the machines. Types of work done on them, types of tools used, their geometry . General and periodic maintenance of a shaper.
- 4. DRILLING & BORING MACHINES:** Types of tools used in drilling and boring. Classification of drilling and boring machines, principle of working and constructional details of simple and radial drilling M/C and general and periodic maintenance. Operations like facing, counter boring, tapering.
- 5. MILLING MACHINES:** Types of milling machines, constructional features of horizontal milling M/C. general maintenance of the machine, types of milling cutters, milling operations like plane milling, space milling, angular milling form milling, straddle milling, gang milling, Negative rack milling, cutting speed and speed for different tools in up and down milling. Simple compound and differential indexing, milling of spur gears and racks. General and periodic maintenance of milling machine.
- 6. GRINDING MACHINES:** Common abrasive grinding wheel materials, Bonds, Grain or grits of abrasive, Grain structure and shapes of common wheels, various speeds and feeds, Use of coolants, Methods of grinding. Types of grinding machines, precision finishing operations like honing.
- 7. BROACHING MACHINES:** Broaching- internal and external surface Types of work done on broaching machine. Simple types of broaches and their uses, Types of broaching machines.

Comparisons of broaching with others processes.

- 8. JIGS AND FIXTURES:** Object of Jigs and Fixture. Difference between jigs and fixtures. Principle of location. Principle of clamping. Locating and clamping devices. Types of jigs -Simple open and closed (or box) jigs. Drill jigs- Bushes ( Fixed liner, Renewal slip). Template. Plate jigs. Channel jigs, Leaf jigs. Simple example of milling, turning, grinding, horizontal boring fixtures and broaching fixtures. Welding fixtures devices.
- 9. COOLING PROCESS:** Coolants and cutting fluids difference between coolant and cutting fluid, Function and action of cutting fluids. Requirement of good cutting fluids,their selection for different materials and operations.
- 10. AUTOMATION OF MACHINING CENTRES:** Introduction to CNC Machine tools (Computer Numerical Control Lathe) and FMS (Flexible Manufacturing System) Introduction only.

#### **11. PLANT MAINTENANCE**

Maintenance: maintenance definition, scope of maintenance, maintenance strategies, economics and performance measures, objective of maintenance, concepts of general approach to eliminate Losses, classification of maintenance-corrective, scheduled, preventive, predictive and productive maintenance. common techniques to monitor the conditions of systems-vibration based, radiographic, thermo graphic, ferro-graphic, computer based diagnosis etc, forms of wear, wear on guide surfaces, breakdown and remedies of machine tools, repair cycle, installation and maintenance of machine tools, PERT in maintenance.

### ***III YEAR V SEMESTER***

#### **DDESIME504 DESIGN AND ESTIMATION**

##### **PART-A**

**1. INTRODUCTION TO DESIGN:** General design consideration in machine parts. Mechanical properties of materials of construction, steps in machine design. Factor of safety, Selection of materials.

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**2. MACHINE PARTS SUBJECTED TO DIRECT LOADS AND SHEAR LOADS:**  
***Threaded***

connections, core and nominal diameter of screw, boiler-Stay. Design for number of studs or bolts and their diameter for cylinder covers due to external forces. Punching and shearing. Design of cotter and Knuckle joints.

**3. RIVETED AND WELDED JOINTS:** Types of riveted joints, possible failure of riveted joints. Strength and efficiency of riveted joint. Unwins formula. Determination of safe load and pitch of rivets. Design of lap and butt joints. Common type of welded joints, definition of leg length, throat thickness and size of weld. Simple design for 'V' butt welded joint, Transverse fillet and parallel fillet welded joints

**4. MACHINE PARTS SUBJECTED TO BENDING MOMENT:** Design for the diameter of railway-Wagon axle, axle used in road-vehicles. Semi-elliptic Laminated spring-Proof load and proof stress stiffness. Expression for maximum stress and deflection. Determination of different dimensions number of Laminations, Central deflection in a laminated spring.

**5. MACHINE PARTS SUBJECTED TO TWISTING MOMENT:** Design of solid and hollow shafts. Close-coiled helical spring. Maximum shear stress induced for given axial load. Expression for axial deflection, spring index, solid length and stiffness. Calculation for number of coils, mean coil diameter and diameter of spring wire for axial gradual loads. Simple cases of composite springs. Design of keys and coupling bolts for a rigid flanged coupling.

**6. MACHINE PARTS SUBJECTED TO COMBINED BENDING AND TWISTING MOMENT:**

Theory of failures

(i) Maxim. Principal stress theory.

(ii) Maxim. shear stress theory

concept of equivalent bending moment, equivalent torque, Design of over hung crank pin. Design of shaft diameter for over hung pulley in a belt drive.

**7. MACHINE PARTS SUBJECTED TO COMBINED DIRECT AND BENDING STRESS:**

Eccentric load and eccentricity. Max. and minimum stress intensities. Reversal of stress. Design for safe load on small columns. Design of brackets and clamps for eccentric loading.

**8. DESIGN OF GEAR:** Selection of material, Design analyzing, Lewis equation, Stress concentration, Dynamic load, Surface compressive stress, Beam strength, Bending stress, check or plastic deformation, Design procedure for Spur gear and Helical gear.

**PART-B:**

**1. ESTIMATION OF MATERIAL REQUIREMENT:** Estimation of weight of simple machine parts. Review of the area/volume of triangle, equilateral triangle, Hexagon, rectangle, Square rhomboid, parallelogram, Octagon, circle, Hollow circle, Sector of circle, Sector of Hollow circle circular, Semi circle, Cube prism, Square prism, general prism, Cylinders, Sphere, Hollow sphere segment of sphere, Zone of a sphere, Cones pyramids, Frustum of a pyramid, Frustum of a cone.

**2. ESTIMATION OF TIME FOR DIFFERENT MACHINING OPERATIONS:** Turning, Facing, Chamfering, Knurling, Taper Turning, Threading, Drilling, Boring, Shaping and planing, Milling, Broaching, Simple problems pertaining to above.

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**DPRODME505**  
**PRODUCTION TECHNOLOGY-I**

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**1. INTRODUCTION:** Concept of manufacturing processes, classification and application.

**2. METAL FORMING PROCESSES:**

- (a) **FORGING:** Hammer forging, drop-forging, dies for drop-forging, drop hammers, press forging, forging machines or up setters, forging tools, forging defects and remedies. Concept of losses in forging operation, estimation of stock required for hand forging considering scale and shear losses
- (b) **ROLLING:** Elementary theory of rolling, hot and cold rolling, types of rolling mills, rolling defects and remedies.
- (c) **PRESS FORMING:** Types of presses, working, and selection of press dies die-material. Press operation-Shearing, piercing trimming, shaving, notching or rubber forming, embossing, stamping, and punching.
- (d) **Drawing, extrusion, pipe and tube drawing.**
- (e) **Energy forming technique - Explosive forming, electromagnetic forming.**

**3. CONVENTIONAL METAL CUTTING PROCESSES:**

- (a) **Gear manufacturing process-** Gear hobbing, gear shaping gear shaving, gear generating, gear burnishing, forming 'V' generator, straight bevel gear manufacturing, spiral bevel gear manufacturing.
- (b) **External threading process-** Roll threads, thread milling, thread grinding, thread rolling, thread chasing, Die heads.
- (c) **Machining of cylindrical holes -** Multiple spindle drill press, gang drill press, drilling deep holes and small diameter holes, boring, co-ordinate method of locating holes, Jig boring machine.

**4. METAL FINISHING PROCESS:**

Grinding Process, Diamond machining, Honing, Lapping, Super finishing, Polishing and buffing.

**5. SURFACE TREATMENT & FINISHING:**

Meaning of the terms surface treatment and its purpose. Elements of surface treatment cleaning protecting, Colouring, Altering surface properties. Surface Treatment Processes- Wire brushing. Belt sanding. Alkaline cleaning, Vapour degreasing. Pickling. Ultrasonic cleaning. Solvent cleaning. Painting application by dipping. Hand spraying. Automatic spraying. Electrostatic spray finishing. Electrocoating. Hot dip coating. Phosphate coating- Packetizing and Bondersing. Buffing. Blackening, Anodising. Electro Nickle Plating. Nickle carbide plating. Sputtering.

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**DINTEME506**  
**INTEGRATIVE COMMUNICATION LAB**

**PERSONALITY DEVELOPMENT**

**1. *Introduction to Personality Development***

AIM, Skills, Types of Skills, LIFE SKILLS VS OTHER SKILLS, Concept Of Life Skills. Ten core Life Skills identified by WHOM

**2. *Factors Influencing / Shaping Personality:***

Introduction, Physical and Social Factors Influencing / Shaping Personality (Hereditary, Self-Development, Environment, Education, Life-situations) sychological & Philosophical Factors Influencing / Shaping Personality Past Experiences, Dreams and Ambitions, Self-Image, Values)

**3. *Self Awareness – 1***

DIMENSIONS OF SELF AWARENESS (Self Realization, Self Knowledge Or Self Exploration, Self Confidence, Self Talk, Self Motivation, Self Esteem, Self Image, Self Control, Self Purpose, Individuality and Uniqueness, Personality, Values, Attitude, Character), SELF REALIZATION & SELF EXPLORATION THROUGH SWOT ANALYSIS AND JOHARI WINDOW,

**4. *Self Awareness – 2***

SYMPATHY VS EMPATHY AND ALTRUISM, Importance of Empathizing with Others,

**5. *Self Awareness – 3***

Self-Awareness through Activity, Body Image (What is Body Image, What Decides our Body Image, What is Poor Body Image, What are the Harmful Effects of Poor Body Image), Tackling Poor Body Image (Enhance Self-Esteem, Build up Critical Thinking, Build up Positive Qualities, Understand Cultural Variation, Dispel Myths, Utilize Life Skills)

**6. *Change Your Mind Set***

What is Mindset, HOW TO CHANGE YOUR MINDSET (Get the Best? Information Only, Make the best people your Role Model, Examine Your Current Beliefs, Shape Your Mindset with Vision and Goals, Find Your Voice, Protect Your Mindset, Let Go of Comparisons, Put an End To Perfectionism, Look at the Evidence, Redefine What Failure Means, Stop Worrying About What “People” Think)

**INTERPERSONAL SKILLS**

**7. *Interpersonal Relationship and Communication***

INTERPERSONAL RELATIONSHIP, Forms of Interpersonal Relationship Must Have in an Interpersonal Relationship, Interpersonal Relationship between a Man and a Woman (Passion,

Intimacy, Commitment), Relationship Between Friends,

ROLE OF COMMUNICATION IN INTERPERSONAL RELATIONSHIP (Take Care of Your Tone and Pitch, Choice of Words is Important in Relationships, Interact Regularly, Be Polite, Try To Understand The Other Person's Point Of View As Well as, Individuals Can Also Communicate Through Emails,

#### **8. *NON-VERBAL COMMUNICATION Skills***

Non-Verbal Communication, We Communicate with Our Eyes, Communication with Facial Expression, a Good Gesture, Appearance, Posture and Gait, Proximity & Touch), IMPORTANCE OF LISTENING, Characteristics of Good and Effective Listener (Is Attentive, Do Not Assume, Listen for Feelings and Facts, Concentrate on the Other Speakers Kindly and Generously, Opportunities)

#### **9. *Communication Skills ACTIVITIES –***

Activities in Making Collages, Making Advertisements, PPT Preparation & Presentation, Speaking -Seminars, Group Discussions, Debates, Extempore Speeches, Listening to an audio clip and telling its gist, Answering a Telephone call, making enquiries, General tips- Pronunciation, Tone, Pitch, Pace, Volume, relevance, brief, simple Reading Newspaper, Magazines (Current Affairs, Economic magazines, Technical magazines), How to read a Report, article, Writing- Resume Writing, Writing joining report, Notice Writing, Report making, Proposal writing, Advertisement, Notice for tender, Minutes writing, E-Mail writing, Listening News, Listening to audio clips.( Lecture, poetry, speech, songs),

#### **10. *Body Language skills***

Introduction, what is Body Language, Body Language Parts, Personal Space Distances (Intimate Distance, Personal Distance, Social Distance, Public Distance), IMPORTANT BODYLANGUAGE SIGNS AND THEIR MEANING

### **UNDERSTANDING OTHERS**

#### **11. *Leadership Traits & Skills:***

Introduction, Important Leadership Traits (Alertness, Bearing, Courage, Decisiveness, Dependability, Endurance, Enthusiasm, Initiative, Integrity, Judgment, Justice, Knowledge, Loyalty, Sense of Humor), Other Useful Traits (Truthfulness, Esprit-de-corps, Unselfishness, Humility and sympathy, Tact without loss of moral courage, Patience and a sense of urgency as Appropriate, Self confidence, Maturity, Mental including emotional stability)

#### **12. *Attitude***

Types of Attitude, Components of Attitudes (Cognitive Component, Affective Component, Behavioral Component), Types of Attitudes (Positive Attitude, Negative Attitude, Neutral Attitude, Rebellious Attitude, Rational And Irrational Attitudes, Individual and Social Attitudes), Kinds of Attitude, ASSERTIVENESS, How to Develop Assertiveness (Experiment and Try New Things Extend Your Social Circle, Learn to Make Decisions for Yourself, Indulge in Knowledge,

Admire Yourself & Others), Negotiation (Be Sensitive To The Needs

Others, Be Willing To Compromise, Develop Your Problem- Solving Skills, Learn to Welcome Conflict, Practice Patience, Increase Your Tolerance for Stress, Improve Your Listening Skills, Learn To Identify Bottom-Line Issues Quickly, Be Assertive, Not Aggressive)

## **PROBLEM SOLVING**

### **13.        *Analyzing & Solving a Problem skills***

Critical Thinking, Creative Thinking, Decision Making, Goal Setting & Planning, Problem Solving

### **14.        *Time Management skills***

Need of Time Management, TIME WASTERS (Telephone, Visitors, Paper Work, Lack of Planning & Fire Fighting, Socializing, Indecision , TV, Procrastination), PRINCIPLES OF TIME MANAGEMENT - Develop a Personal Sense of Time (Time Log , value of other people's time ), Identify Long-Term Goals, Concentrate on High Return Activities, Weekly & Daily Planning (The Mechanics of Weekly Planning, Daily Planning), Make the Best Use of Your Best Time, Organize Office Work (Controlling Interruptions, Organizing PaperWork), Manage Meetings, Delegate Effectively, Make Use of Committed Time, Manage Your Health,

### **15.        *Stress Management Skills***

INTRODUCTION, Understanding Stress and its Impact, Expected Responses (Physical, Emotional, Behavioral), stress signals (thoughts, feelings, Behaviors and physical), STRESS MANAGEMENT TECHNIQUES (Take Deep Breath, Talk It Out, Take a Break, Create a Quiet Place in Your Mind, Pay Attention to Physical Comfort, Move, Take Care of Your Body, Laugh, Manage Your Time, Know Your Limits, Do You Have To Be Right Always, Have a Good Cry, Look for the Good Things around You, Talk Less, Listen More) UNDERSTANDING EMOTIONS AND FEELINGS-through activity

### **16.        *Interview Skills (2 sessions from Industry Expert is Compulsory)***

Curriculum Vitae (When Should a CV be Used, What Information Should a CV Include, personal profile, Covering Letter, What Makes a Good CV, How Long Should a CV Be, Tips on Presentation), Different Types of CV (Chronological, Skills-Based), BEFORE THE INTERVIEW, CONDUCTING YOURSELF DURING THE INTERVIEW, FOLLOWING THROUGH AFTER THE INTERVIEW, Interview Questions To Think About, MOCK INTERVIEW – Activity (MOCK INTERVIEW EVALUATION - NON-VERBAL BEHAVIORS, VERBAL BEHAVIORS, General Etiquettes to face the Board, Telephonic Interview

### **17.        *Conflict Motives –Resolution***

Motives of Conflict (Competition for Limited Resources, the Generation Gap and Personality clashes, Aggressive Personalities, Culturally Diverse Teams, Competing Work and Family Demands, Gender Based Harassment), Merits and Demerits of Conflict, Levels of Conflict (Interpersonal Conflict, Role Conflict, Inter-group Conflict, Multi-Party Conflict, International Conflict), Methods of Conflict Resolution (The Win-Lose Approach, The Lose-Lose Strategy, the Win-Win Approach), Techniques for Resolving Conflicts (Confrontation And Problem Solving Leading to Win-Win, Disarm the Opposition, Cognitive Restructuring, Appeal to Third Party, the Grievance Procedure)

### **18. *Negotiation / Influencing Skills***

Why Influencing, What Is Influencing, TYPES OF INFLUENCING SKILLS (Probing And Listening, Building Rapport, Sign Posting, Pacing, Selling, Assertiveness), LAWS AND PRINCIPLES OF INFLUENCE, the Six Laws of Influence (The Law of Scarcity, the Law of Reciprocity, the Law of Authority, the Law of Liking, the Law of Social Proof, the Law of Commitment and Consistency), Influencing Principles (Making a Start, Buy Yourself Thinking Time, Dealing With Disagreement, Difficult And Sensitive Situations)

### **19. *Sociability: Etiquettes and Mannerism & Social Skills***

Need for Etiquette, Types of Etiquettes (Social Etiquette, Bathroom Etiquette, Corporate Etiquette, Wedding Etiquette, Meeting Etiquette, Telephone Etiquette, Eating Etiquette, Business Etiquette, E-Mail Etiquettes, ), MANNERISMS, HOW TO IMPROVE YOUR SOCIAL SKILLS (Be Yourself, Be Responsible, Be Open & Approachable, Be Attentive, Be Polite, Be Aware, Be Cautious)

### **20. *Importance of Group / Cross Cultural Teams / Team Work skills***

Introduction, Types and Characteristics of Groups (Definition of a Group, Classification /Types of Groups, Friendship Group, Task Group, Formal Groups, Informal Group, Effective Group), Importance of a Group, Characteristics of a Mature Group, TYPES AND CHARACTERISTICS OF A TEAM (Definition of team, Types of Teams, Functional Teams, Problem Solving Teams, Cross - Functional Teams, Self - Managed Teams), Importance of a Team, Characteristics of a Team.

### **21. *VALUES / CODE OF ETHICS***

Meaning, A FEW IMPORTANT VALUES (Honesty, Integrity, Purity, Discipline, Selflessness, Loyalty, Fairness, Equality, Trust, Support, Respect, Etc)

**Note: One Orientation module for the faculty is must. Involvement of Industry Experts is necessary for Interview Skills.**

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**DINDUME507**  
**INDUSTRIAL TRAINING**

It is needless to emphasize further the importance of Industrial Training of students during their 3 years of studies at Polytechnics. It is industrial training, which provides an opportunity to students to experience the environment and culture of industrial production units and commercial activities undertaken in field organizations. It prepares student for their future role as diploma engineers in the world of work and enables them to integrate theory with practice. Polytechnics have been arranging industrial training of students of various durations to meet the above objectives.

This document includes guided and supervised industrial training of 4 weeks duration to be organized during the semester break starting after second year i.e. after 4th semester examinations. The concerned HODs along with other teachers will guide and help students in arranging appropriate training places relevant to their specific branch. It is suggested that a training schedule may be drawn for each student before starting of the training in consultation with the training providers. Students should also be briefed in advance about the organizational setup, product range, manufacturing process, important machines and materials used in the training organization.

Equally important with the guidance is supervision of students training in the industry/organization by the teachers. Students should be encouraged to write daily report in their diary to enable them to write final report and its presentation later on.

An external assessment of 50 marks has been provided in the study and evaluation scheme of 5th Semester. Evaluation of professional industrial training report through viva-voce/presentation aims at assessing students understanding of materials, industrial process, practices in industry/field organization and their ability to engage in activities related to problem solving in industrial setup as well as understanding of application of knowledge and skills learnt in real life situations.

Teachers and students are requested to see the footnote below the study and evaluation scheme of 4th semester for further details.

The teacher along with field supervisors will conduct performance assessment of students. The components of evaluation will include the following:

Punctuality and regularity 15%  
Initiative in learning new things 15%  
Presentation and VIVA 15%  
Industrial training report 55%

