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**COURSE CONTENTS TO BE DELIVERED FOR LM-I & LS-II**

**(T-500)**

***Course Duration: 08 Weeks***

1. Introduction to MEPCO Distribution Organization.
2. Ethics of Training
3. Role and function of Line Superintendent
4. Basic Electricity concepts / testing and measuring.
5. WAPDA Distribution System and Standard Specification.
6. Material use in Line construction.
7. Use and care of T&P.
8. Handling and storage of line material.
9. Distribution System Planning.
10. Errection of Pole/ Structure.
11. Guys & Installation of Guys.
12. Line Configuration & Installation of Conductor.
13. Splicing of Conductor.
14. Installation of Earth System.
15. Main Factor of Distribution System
16. Transformer, its installation and protection
17. Service Installation of LT Line
18. Energy Meter Installation/Testing/Measuring.
19. Power Factor, effects of low power factor on distribution system and its rectifications
20. Voltage Improvement Device Capacitor
21. Oil circuit Recloser/Auto Recloser.
22. Distribution System maintenance.
23. Patrolling & kinds of patrolling.
24. Tree Trimming/Cutting.
25. Location of fault & Consumer Complaints.
26. Safety & Safety Equipment.
27. Fire Prevention.
28. First Aid Skill.
29. Fatal & non-Fatal accidents and its rectifications
30. Special Problems of Distribution System.
31. Mapping & LT Proposals
32. Energy Saving & Energy Conservation
33. WAPDA Commercial Procedure.
34. Revenue Generation Task Force (RGTF)
35. Importance of Human Relations.
36. Management techniques, Accountability & Works Ethics.
37. Improvement of Communication Skills
38. Computer Introduction.

**COURSE CONTENTS TO BE DELIVERED FOR LM-II TO LM-I (T-300)**

**Course Duration: 08 Week**

1. Introduction to the Training Program / Ethics.
2. Ethics of Training
3. Distribution Organization and Distribution System.
4. Role / Function of the Lineman & Human Relation.
5. Mode / Techniques of Job Briefing.
6. Safety & Safety Equipment.
7. Fire Fighting.
8. First Aid Skills & Practices.
9. Tools & Plants (T&P).
10. Use of Hand Tools.
11. Material Used in Line construction.
12. Handling and Storage of Line Material.
13. Testing Equipment.
14. Voltmeter, Ammeter, and Energy Meter (Measuring Equipments).
15. Climbing of Pole/Structure.
16. Errection of Pole/Structure.
17. Installation of Guys.
18. Line Configuration and Installation of Conductors.
19. Splicing of Conductors.
20. Installation of Earth Systems.
21. Service Installation (LT).
22. Installation of Energy Meters.
23. Transformer Description.
24. Installation of Transformers.
25. Protection of Transformers.
26. Installation of Oil circuit / Recloser.
27. Voltage Improvement Devices: Capacitors.
28. Voltage Improvement Devices: Regulators.
29. Patrolling of Lines.
30. Tree Trimming and Tree Cutting.
31. Location of faults.
32. Mapping

**COURSE CONTENTS TO BE DELIVERED FOR ALM TO LM-II (T-100)**

**Course Duration: 06 Week**

1. Introduction to the training program / Ethics.
2. Distribution organization and distribution system.
3. Human Relation and Role / Function of the ALM / LM.
4. Safety & Safety Equipments.
5. Fire Fighting.
6. First Aid Skills & Practices.
7. Tools & Plants (T&P)
8. Use / Care of Hand Tools.
9. Testing & Measuring Equipments.
10. Material used in line construction.
11. Handling/Storage of Line Material.
12. Excavation Works.
13. Errection of Pole/Structure
14. Climbing of Pole / Structure.
15. Installation of Guys.
16. Installation of Conductors.
17. Splicing of Conductors.
18. Installation of Earth Systems
19. Installation of Services (LT).
20. Energy Meters.
21. Installation / Protection of Transformers.
22. Voltage Improvement Devices: Capacitors and Regulators.
23. Patrolling of Lines.
24. Tree Trimming and Tree Cutting.
25. Location of Faults.

## COURSE CONTENTS TO BE DELIVERED FOR GENERAL SAFETY (S-100)

 ***Course Duration: 02 Week***

1. Introduction to Safety
2. General Safety
3. Principles of First Aid
4. First Aid for Ailments
5. Resuscitation an Artificial Respiration
6. Individual Safety Responsibilities and Penalties
7. Safety for Technical Supervisors
8. Safe System of Work / PTW (Permit to Work)
9. Safety for Non-Technical Supervisors
10. Fire Prevention
11. Transportation
12. Pole Top Rescue
13. EQUA Potential Grounding
14. Medical Emergency & CPR (Cardio Pulmonary Resuscitation)
15. Wound Management & Fracture Management

**COURSE CONTENTS TO BE DELIVERED FOR ACCIDENT PREVENTION (S-200)**

 ***Course Duration: 01 Week***

1. Introduction of Accident Prevention Course.
2. WAPDA Safety Policy, Safety Video.
3. Accident Analyses, Prevention of Un-Safety Act, Traffic Control and Safety Posters.
4. Fire-Prevention, Inspection of T&P & Safety Equipment, First Aid Review, Artificial Respiration Pole top Resuscitation and Pole Top Rescue.

**COURSE CONTENTS TO BE DELIVERED FOR SR. CLERK TO ASSISTANT**

 ***Course Duration: 03 Weeks***

1. MEPCO Organizational Structure
2. Ethics of Training
3. Job Description
4. Basic English Grammar
5. Techniques of Noting and Drafting.
6. Communication, Different Forms of Communication & Written Communication.
7. Filing Methods, Diary & Dispatch Methods
8. Preparation & Maintenance of office record
9. Inspection and Audit Notes
10. Human Relations.
11. Office Safety.
12. Customer Complaints
13. New Connection Procedure
14. WAPDA E & D Rules.
15. WAPDA Leave Rules
16. Administrative & Financial Powers
17. WAPDA Welfare Fund, Gross Provident Fund, Pension and Group Life Insurance Rules and their processes.
18. Appointments, Promotions, Posting/Transfer and Increments Criteria.
19. Grant of increments/efficiency bar, leave and Recreation Allowances of Technical staff.
20. Vigilance on timely initiation of Action, Replies, Complaints and Periodical Returns/Statements.
21. Improvement in Communication Skills.
22. Using Management Techniques to Simplify and improve work
23. Maintaining Discipline, use of influence and authority.
24. Responsibility, Accountability & work ethics.
25. Introduction and use of Computer.

**COURSE CONTENTS TO BE DELIVERED FOR JR. CLERK TO**

**SR. CLERK**

***Course Duration: 03 Weeks***

1. MEPCO Organizational Structure
2. Ethics of Training
3. Job Description
4. Review of Basic English Grammar.
5. Punctuation and Capitalization.
6. Précis Writing.
7. Techniques of Noting and Drafting.
8. Diary and Dispatch.
9. New Connection Procedures.
10. Customer Complaints.
11. Processing Accident Cases.
12. Review of Basic Mathematics.
13. Filing Methods.
14. Stationery & Maintenance of Service, Book, Attendance Register & I.C Register.
15. Human Relations.
16. Office Safety.
17. Preparation of Vehicle Register and Statement of Legal Cases.
18. \* Procedure of Estimate of Minor Repair/ Major Over Hauling.
19. Inspection and Audit Notes
20. \* Advance Para, Statutory Audit, Draft Para and Internal Audit.
21. Traveling Allowance Rules.
22. Medical Reimbursement.
23. Acquisition of Residential Accommodation.
24. WAPDA Leave Rules.
25. WWF, GPF, Pension and GLI Rules.
26. Service Cases under WAPDA E&D Rules.
27. Administrative and Financial Powers.
28. Preparation of Pay Bills.
29. Maintaining Imprest Cash.
30. Tender Documents.
31. Preparation and Maintenance of Recovery Notice and Recovery Register.
32. Office Tools and Plant.
33. \* Mode of Communication & Improvement of Communication Skills
34. Personnel Procedures and Incumbency Register.
35. Monthly Returns / Statements.
36. \* Introduction and use of Computer.

**COURSE CONTENTS TO BE DELIVERED FOR OFFICE ASSISTANT TO OFFICE SUPTD.**

***Course Duration: 03 Weeks***

1. MEPCO Organizational Structures
2. Ethics of Training
3. Techniques of Noting and Drafting
4. Grammar & Spelling
5. Filing Method
6. Tender Documents Tendering Procedure
7. Personnel Procedures and Incumbency Register
8. Stationery & Contingency Stores
9. Office Tools & Plants & Maintenance of Office Record
10. Traveling Allowance Rules
11. W.W.F, G.P.F, Pension and GLI Rules
12. Services Cases under WAPDA E&D Rules
13. Medical Reimbursement
14. WAPDA Leave Rules
15. Administrative and Financial Powers
16. Responsibility for Loss Sustained by the Authority through Fraud and Negligence
17. Labour Problems & Welfare
18. Human Relation
19. Office & Correspondence Safety / Security
20. Legal Cases
21. Processing for Telephone Connection
22. Retention of Accommodation
23. Staff Supervision and Coordination
24. Destruction of Un wanted and old Record
25. Budgeting
26. WAPDA Act
27. Promotion Policy
28. Deputation Policy
29. Date of Birth Rules
30. Guide Lines for Writing ACRs
31. Service and Estates
32. Preparation of Item Note for Authority / BOD
33. Over View of the Role & Function of the Sr. Superintendent
34. Checking & Supervision of the work/performance of Assistants.
35. Implementation of Authority’s instructions and direction of immediate Officer
36. Proposal for making decisions
37. Different Forms of Written Communication
38. Inspection and Audit Notes
39. Vigilance on timely initiation of action, Replies, Complaints, Periodical returns / Statements
40. Using Management Techniques to Simplify & Improve Work
41. Maintaining Discipline. Use of Influence & Authority
42. Responsibility Accountability & Work Ethics
43. Corporatization, Loyalty to Organization & Management Skills
44. Introduction & use of Computer

**COURSE CONTENTS TO BE DELIVERED FOR LDC TO STENO-II**

 ***Course Duration: 03 Weeks***

1. MEPCO Organizational Structure
2. Ethics of Training
3. Over view of the role and function of the stenographer
4. Punctuation and Capitalization
5. Spelling Aids
6. Précis Writing & Review of Basic English Grammar
7. Techniques of Noting and Drafting
8. Different forms of written Communication
9. Maintaining Confidential Records
10. Direction from the immediate officers and their implementation
11. Telephone, Telephonic Calls and Messages Register
12. Human Relations & Loyalty to Organization
13. Mode of Communication & Improvement of Communication Skills
14. Responsibility, Accountability and Work Ethics
15. Filing Methods / Office Safety
16. Diary & Dispatch Methods
17. Maintenance of Office Record
18. Introduction to Computer (MS-Word & MS-Excel)
19. Short Hand Written and Typing Test.
20. Typing Speed Test

**COURSE CONTENTS TO BE DELIVERED STENO-II TO STENO-I**

 ***Course Duration: 03 Weeks***

1. MEPCO Organizational Structure
2. Ethics of Training
3. Over view of the role and function of the stenographer
4. Review of Basic English Grammar
5. Spelling Aids
6. Punctuation and Capitalization
7. Précis Writing
8. Techniques of Noting and Drafting
9. Different Forms of Written Communication
10. Maintaining Confidential Records
11. Direction from the immediate officers and their implementation
12. Telephone, Telephonic Calls and Messages
13. Telephone and Message Register
14. Human Relations
15. Office Safety
16. Improving Communication Skills
17. Responsibility, Accountability and work ethics
18. Filing Methods
19. Diary & Dispatch Methods
20. Maintenance of Office Record
21. Introduction to Computer (MS-Word & Ms-Excel)

**Promotion Training Course Contents to be delivered for commercial suprintendent to revenue officer including one week computer training**

**Note: The Promotion Examination from Commercial Superintendent to Revenue Officer is being held under Director (Examination Cell) WAPDA House Lahore and Elementary Management Training Course is being held at WAPDA Staff College Islamabad as per Schedule.**

 ***Course Duration 04 Weeks***

1. Organizational Structure of MEPCO.
2. Main objective of training for enhancing professional efficiency.
3. **Planning, Research & Development, Human Resource Management, Financing and leading.**
4. Job Description for RO & Other Revenue Staff.
5. Commercial Procedure (Computer Billing Volume-2nd).
6. Consumer Services Manual duly approved by NEPRA.
7. Application of Tariffs of all category and terms & conditions.
8. Incentive Policies.
9. Detection Policy.
10. RCO Policy.
11. Billing Control and MDI Control Billing.
12. Ensure charging of detection as per report of various agencies.
13. Reading Control Procedure. Monitoring of Meter Snaps & its accuracy.
14. New Concepts of Meter Reading.
* IMR: Improved Meter Reading.
* HHU: Hand Held Units.
* AMR: Automated Meter Reading.
* MMR: Mobile Meter Reading.
* Reading through RF base (Radio Frequency).
1. Real time cash management / Bill Payment Mechanism.
* Grace Period.
* Under Schedule of Tariff.
* Method & Facility of Payment.
* Cash Posting Methodology.
1. Cash Collection Procedure (Online Collections).
2. Reconciliation of cash collected & remitted through Banks and other cash collecting agencies on daily / weekly & monthly basis.
3. Kind of Disconnection (Disconnection Procedure).
* On consumer’s request.
* On expiry of specific period.
* Temporary Connection.
* Seasonal Connection.
* On default of payment.
* On commission of theft of energy.
1. Reconciliation of new connections installed and connection billed and arrange for proper feeding through MCC.
2. Proper monitoring of court cases and follow up.
3. Adjustment of unidentified cash & deletion and write off irrecoverable arrear as per SOP.
4. Revenue Generation Strategy.
5. New Criminal Law (Amendment Act 2016 for offences relating to theft of electricity). Clauses 462 G, 462 H, 462 I, 462 J, 462 K, 462 L, 462 M.
6. Audit and Inspection Reports, Advance & Draft Para.
7. Handling of Public Complaints.
8. Electricity Act 1910 (Section 2, 20, 21, 24, 24-A, 26, 26-A, 39, 39-A, 50, 54-A, 54-B, 54-C).
9. WAPDA Act 1958.
10. NEPRA Act 1997.
11. Delegation of Financial Powers (Sections VII, X, XII, XIII, XVI, XVII & XVIII)
12. Pakistan WAPDA Pension Rules 1977.
13. Pakistan WAPDA Employees (E&D) Rules, 1978.
14. Pakistan WAPDA Employees Leave Rules, 1978.
15. Pakistan WAPDA Employees Conduct Rules.
16. Medical Attendance Rules, 1979.
17. Travelling Allowance Rules, 1982 for WAPDA Employees.
18. Financial Accounting & Basic Accounting.
19. Management and its principles.
20. Communication Skill.
21. Computer Training.

**Promotion Training Course Contents to be delivered**

**for commercial assistant to commercial superintendent including one week computer training**

 ***Course Duration 03 Weeks***

1. Organizational Structure of MEPCO.
2. Main objective of training for enhancing professional efficiency.
3. Job Description for RO & Other Revenue Staff.
4. Commercial Procedure (Computer Billing Volume-2nd).
5. Consumer Services Manual duly approved by NEPRA.
6. Application of Tariffs of all category and its terms & conditions.
7. Incentive Policies.
8. Detection Policy.
9. RCO Policy.
10. Billing Control and MDI Control Billing.
11. Reading Control Procedure. Monitoring of Meter Snaps & its accuracy.
12. New Concepts of Meter Reading.
* IMR: Improved Meter Reading.
* HHU: Hand Held Units.
* AMR: Automated Meter Reading.
* MMR: Mobile Meter Reading.
* Reading through RF base (Radio Frequency).
1. Checking of Bill Adjustment (General & Others).
2. Inspection Reports, Audit Notes, Stock Verification, Advance Para, Draft Para, Internal Audit and Statutory Audit.
3. Monitoring of new connections, Change of name, Change of Tariff, Reduction and Extension of load.
4. Checking of M&T reports general and MDI Connections.
5. Office safety and Custody of Record.
6. Monitoring of dispute cases.
7. Handling of consumers complaints and its disposal.
8. Real time cash management / Bill Payment Mechanism.
* Grace Period.
* Under Schedule of Tariff.
* Method & Facility of Payment.
* Cash Posting Methodology.
1. Cash Collection Procedure (Online Collections).
2. Kind of Disconnection (Disconnection Procedure).
* On consumer’s request.
* On expiry of specific period.
* Temporary Connection.
* Seasonal Connection.
* On default of payment.
* On commission of theft of energy.
1. Checking of Computer input & output.
2. Consumers Census & Re-Routification.
3. Revenue Generation Strategy.
4. New Criminal Law (Amendment Act 2016 for offences relating to theft of electricity). Clauses 462 G, 462 H, 462 I, 462 J, 462 K, 462 L, 462 M.
5. Audit and Inspection Reports, Advance & Draft Para.
6. Electricity Act 1910 (Section 2, 20, 21, 24, 24-A, 26, 26-A, 39, 39-A, 50, 54-A, 54-B, 54-C).
7. WAPDA Act 1958.
8. NEPRA Act 1997.
9. Delegation of Financial Powers (Sections VII, X, XII, XIII, XVI, XVII & XVIII)
10. **Application of the Pakistan Industrial & Commercial Employment (Standing Orders) Ordinance 1968, for Employees in BPS 01 to 16.**
11. Pakistan WAPDA Pension Rules 1977.
12. Pakistan WAPDA Employees (E&D) Rules, 1978.
13. Pakistan WAPDA Employees Leave Rules, 1978.
14. Pakistan WAPDA Employees Conduct Rules.
15. Medical Attendance Rules, 1979.
16. Travelling Allowance Rules, 1982 for WAPDA Employees.
17. Financial Accounting & Basic Accounting.
18. Management and its principles.
19. Communication Skill.
20. Computer Training.

**Course Contents to be delivered for Meter supervisor grade-II to Meter supervisor grade-I & ms-i to mrss.**

 ***Course Duration 03 Weeks***

1. MEPCO Organizational Structure.
2. Objective of Training.
3. Job Description of Sub Divisional Staff, Yard Stick of Sub Division.
4. Function of Manager (OP), Dy. Manager (OP), Assistant Manager (OP) and Assistant Manager (CS) Office.
5. Different types of single phase, three phase meters their readings and calculation of accuracy. Difference methods of defects in the meter, billing of defective and locked premises.
6. Various methods of stealing premises and their detection, method of charging for the misuse of electrical energy.
7. Detection Policy.
8. Bill Collection Procedure.
9. Electricity Act, 1910 and New Criminal Law (Amendment Act 2016 for offences relating to theft of electricity). Clauses 462 G, 462 H, 462 I, 462 J, 462 K, 462 L, 462 M.
10. Method for Calculation, Power Factor, Load Factor and Multiplying Factor.
11. Training of operating of Mobile Meter Reading application.

Operating of Mobile Meter Reading PC application and generation of discrepancies and other reports.

Knowledge of AMR Meters and billing system of AMR Meters.

Meter reading through MMR/HHU & Monitoring of Meter Reading Snaps accuracy according to snaps taken by Meter Readers during meter reading.

1. Rectify the all discrepancy pointed out by Meter Reader through MMR/HHU during the course of meter reading.
2. MCO, RCO, ERO record.
3. Allotment of Account No. Routification & Re-Routification / Consumers Census.
4. Handling of Complaints of Different types and their disposal.
5. Preparation of Line Losses Statement.
6. Revenue Generation Strategy and its Objectives.
7. Follow the Billing Program issued by authority each month for timely reading & billing and its importance.
8. Leader, his qualities and duties and information about his Sub-Ordinate.
9. Public Relation.
10. Relation with Labour & colleagues.
11. Corporatization, Loyalty to Organization and Management Skills.
12. Introduction and use of computer

**Course Contents to be delivered for Meter reader to Meter supervisor grade-II**

 ***Course Duration 03 Weeks***

1. MEPCO Organizational Structure.
2. Objective of Training.
3. Job Description of Sub Divisional Staff, Yard Stick of Sub Division.
4. Function of Manager (OP), Dy. Manager (OP), Assistant Manager (OP) and Assistant Manager (CS) Office.
5. Different types of single phase, three phase meters their readings and calculation of accuracy. Difference methods of defects in the meter, billing of defective and locked premises.
6. Various methods of stealing premises and their detection, method of charging for the misuse of electrical energy.
7. Training of operating of Mobile Meter Reading application.
	* Operating of Mobile Meter Reading PC application and generation of discrepancies and other reports.
	* Knowledge of AMR Meters and billing system of AMR Meters.
	* Meter reading through MMR/HHU & Monitoring of Meter Reading Snaps accuracy according to snaps taken by Meter Readers during meter reading.
8. New Concepts of Meter Reading.
* IMR: Improved Meter Reading.
* HHU: Hand Held Units.
* AMR: Automated Meter Reading.
* MMR: Mobile Meter Reading.
* Reading through RF base (Radio Frequency).
1. Tariff Application and Tariff Code.
2. Detection Policy.
3. Ensure charging of detection as per report of various agencies and proper attending discrepancy pointed by Meter Readers.
4. Ensure proper billing of new connections, MCOs, RCOs and SJOs.
5. Bill Collection Procedure.
6. Electricity Act, 1910 and New Criminal Law (Amendment Act 2016 for offences relating to theft of electricity). Clauses 462 G, 462 H, 462 I, 462 J, 462 K, 462 L, 462 M.
7. Method for Calculation, Power Factor, Load Factor and Multiplying Factor.
8. Recording through MMR/HHU & Monitoring of Meter Reading Snaps accuracy according to snaps taken by Meter Readers.
9. Rectify the all discrepancy pointed out by Meter Reader through MMR/HHU during the course of meter reading.
10. MCO, RCO, ERO record.
11. Allotment of Account No. Routification & Re-Routification / Consumers Census.
12. Handling of Complaints of Different types and their disposal.
13. Preparation of Line Losses Statement.
14. Revenue Generation Strategy and its Objectives.
15. Follow the Billing Program issued by authority each month for timely reading & billing and its importance.
16. Leader, his qualities and duties and information about his Sub-Ordinate.
17. Public Relation.
18. Relation with Labour & colleagues.
19. Corporatization, Loyalty to Organization and Management Skills.
20. Introduction and use of computer

**Course Contents to be delivered for Lower Division Clerk to commercial assistant including one week computer training**

 ***Course Duration 03 Weeks***

1. Main objective of training for enhancing professional efficiency.
2. Yard Stick of Revenue Office and Sub Divisional Office.
3. Job Description for Commercial Assistant & Other Revenue Staff.
4. Commercial Procedure (Computer Billing Volume-2nd).
5. Consumer Services Manual duly approved by NEPRA.
6. Application of Tariffs of all category and its terms & conditions.
7. Detection Policy & RCO Policy.
8. Billing Control and MDI Control Billing.
9. Bill Adjustment General & MDI.
10. Reading Control Procedure. Monitoring of Meter Snaps & its accuracy.
11. New Concepts of Meter Reading.

IMR: Improved Meter Reading.

HHU: Hand Held Units.

AMR: Automated Meter Reading.

MMR: Mobile Meter Reading.

Reading through RF base (Radio Frequency).

1. Completion of Application Register and Consumer’s Card.
2. New Connection, Change of Name, Change of Tariff, Reduction and Extension of Load.
3. Preparation of Computer Input & Checking of Computer Output / Proof List.
4. Office safety and Custody of Record.
5. Monitoring of dispute cases.
6. Real time cash management / Bill Payment Mechanism.

Grace Period.

Under Schedule of Tariff.

Method & Facility of Payment.

Cash Posting Methodology.

1. Cash Collection Procedure (Online Collections).
2. Kind of Disconnection (Disconnection Procedure).
* On consumer’s request.
* On expiry of specific period.
* Temporary Connection.
* Seasonal Connection.
* On default of payment.
* On commission of theft of energy.
1. Checking of Computer input & output.
2. Diary and Dispatch.
3. Stationary and Contingency stores.
4. Maintenance of Service Book, Attendance Register and Identity Card register, Causal Leave Record.
5. New Criminal Law (Amendment Act 2016 for offences relating to theft of electricity). Clauses 462 G, 462 H, 462 I, 462 J, 462 K, 462 L, 462 M.
6. Audit Notes and Inspection Reports, Advance & Draft Para.
7. Handling of Public Complaints.
8. Electricity Act 1910 (Section 54-A, 54-B, 54-C).
9. Delegation of Financial Powers (Sections X, XII)
10. Application of the Pakistan Industrial & Commercial Employment (Standing Orders) Ordinance 1968, for Employees in BPS 01 to 16.
11. Pakistan WAPDA Employees Leave Rules, 1978.
12. Medical Attendance Rules, 1979.
13. Travelling Allowance Rules, 1982 for WAPDA Employees.
14. Monitoring of WAPDA Employees Free Electricity.
15. Computer Training.

**Course Contents to be delivered for bill distributors to meter readers**

 ***Course Duration 02 Weeks***

1. MEPCO Organizational Structure.
2. Ethics of Training.
3. Job Description of Sub Divisional Staff & Responsibility.
4. Function of Dy. Manager (OP), Assistant Manager (OP) and Assistant Manager (CS) Offices.
5. Overview of Role and Functions of the Bill Distributors.
6. Bill delivery to customers.
7. Customer Relations Ethics and Safety.
8. Reading of Different Types of Electric Meters.
9. Reading of Different KWH Meter with Basic Calculations.
10. Routification, Re-Routification and allotment of Reference Number.
11. Common Defects of KWH Meters and Rectification.
12. Training of operating of Mobile Meter Reading application.
13. Operating of Mobile Meter Reading PC application and generation of discrepancies and other reports.
14. Knowledge of AMR Meters and billing system of AMR Meters.
15. Meter reading through MMR/HHU & Monitoring of Meter Reading Snaps accuracy according to snaps taken by Meter Readers during meter reading.
16. New Concepts of Meter Reading.
	* IMR: Improved Meter Reading.
	* HHU: Hand Held Units.
	* AMR: Automated Meter Reading.
	* MMR: Mobile Meter Reading.
	* Reading through RF base (Radio Frequency).
17. Handling of Complaints and their Disposal.
18. Common Moods of Theft and its Rectification.
19. Introduction of Electricity Act, 1910 Section 24, 24-A, 26, 26-A, & 39 & 39-A.
20. Introduction of Application Tariff, Billing Program and its importance.
21. Introduction of Basic Computer Applications.
22. Recording through GPRS (General Perfect Radio Service).
23. Accurate recording / Reiter of meters & ensure 100% snaps accuracy.
24. Follow the meter reading program for timely billing.

**COURSE CONTENTS TO BE DELIVERED TO TRACER**

**& ASSTT: DRAFTSMAN**

 **Course Duration: 02 Weeks**

1. Introduction with Drawing T&P Stationary, Tracing Stool, Drawing Board kind of lead pencils and selection suitable scales for preparation of maps.
2. Ethics of Training
3. Tracing of Maps on tracing cloth/tracing paper.
4. Preparation of Maps showing the existing/proposed electric system with symbols produced the WAPDA Design Book.
5. Introduction with all kind of material theoretically and visually.
6. Evaluation of amount from a sketch for a work to be executed.
7. Consolidation of all kind of monthly return.
8. %age/break up of departmental Charges to be levied in the estimate.
9. Map folding / opening manners as well as record keeping relates to Drawing Section.
10. Preparation of staking sheet as well as familiar with basic data required from Operation S/Division for preparation of Renovation. Rehabilitation and Bifurcation Proposals for improvement of existing 11KV and LT System.
11. Introduction and use of Computer.

**COURSE CONTENTS TO BE DELIVERED FOR ADM TO HDM-B**

 ***Course Duration: 02 Weeks***

1. Preparation of Maps showing the existing/proposed electric system with symbols produced in the WAPDA Design Book.
2. Ethics of Training
3. Introduction with all kind of Line Material theoretically and visually.
4. Evaluation of amount from a sketch for a work to be executed.
5. Consolidation of all kind of monthly returns.
6. Percentage/break up of departmental charges to be levied in the estimate.
7. Introduction of computer with small two or three courses.
8. Preparation of staking sheet as well as familiar with basic data required from Operation S/Division for preparation of Renovation, Rehabilitation and bifurcation Proposals for improvement of existing 11KV and LT system.
9. Preparation of all kind of estimates.
10. Well familiar to all kind of Electric Connection
11. Voltage drop Calculations.
12. To maintain the service register of consumer cases.
13. WAPDA Standard Design instructions and specifications.
14. Well conversant with the commercial procedure. (i.e including Processing, Sanctioning of application of Tariff to the new connection / reduction and change of name.)
15. Letter writing.
16. Carrying capacity of all kind of aluminum and ACSR Conductors with variation of loading condition in summer and winter seasons with size definition.
17. Carrying capacity of all kind of 11KV and LT PVC Cables with size definition.
18. Benefits Cost Ratio Calculation
19. Calculation of concrete foundation al all kind of HT/LT Steel structures.
20. Conversion of BHP to KW, KW to Amps and KVA to KW to find the current, to find the voltage, power factor etc.
21. Carrying capacity of each Transformer in Amps and KW on Red/Yellow and Blue phases on 25, 50,100,200,400 and 630.
22. Size of HT Capacitors required in the estimate with regard to load applied by the consumer.
23. Size of LT Capacitors required in the estimate with regard to load applied by the consumer.
24. Familiarity with the 11KV Capacitors and benefits to be gained after their insulation.

**COURSE CONTENTS TO BE DELIVERED FOR HDM-B**

**TO HDM-A**

 ***Course Duration: 03 Weeks***

1. Well Conversant with Book of Financial Power
2. Ethics of Training
3. Complete familiarity with the design book
4. Well familiar to all kind of electric connections.
5. Voltage drop Calculations.
6. To maintain the service register of consumer cases.
7. WAPDA Standard, Design instructions and specifications.
8. Well conversant with the commercial procedure.
9. Letter writing to different formations.
10. Carrying capacity of all of aluminum and ACSR Conductors with variation of loading condition in summer and winter season with size definition.
11. Carrying capacity of all kind of 11KV and LT PVC Cables with size definition.
12. Benefit Cost Ratio Calculation.
13. Calculation of concrete foundation of all kind of HT/LT Steel Structures.
14. Conversion of BHP to KW, KW TO Amps, KVA to KW to find the current, to find the voltage, power factor etc.
15. Carrying capacity of each Transformer in Amps and KW on Red/Yellow and Blue phases on 25, 50, 100, 200, 400, 630 KVA Transformers.
16. Selection of suitable CTs with capacity for the load to be connected for heavy electric
17. Size of LT Capacitors required in the estimate with regard to load applied by the consumer.
18. Familiarity with the 11KV Capacitors and benefits to be gained after their installation.
19. Liaison with the lower and higher formations for the smooth working.
20. Introduction and use of Computer.

**COURSE CONTENTS TO BE DELIVERED FOR LAB ASST / TEST ASST: TO TEST INSPECTOR (M&T)**

***Course duration: 03 weeks***

1. MEPCO Organizational Structure
2. Ethics of Training
3. Job Description
4. Basic Definition
5. Advance Electric concepts
6. Importance of Trigonometric Relations
7. Types of Load
8. Work, Power, Power Factor & Load Factor
9. Procedure for measuring reactive powers.
10. Testing Instruments.
11. Working principles of all types of HT/LT Meters
12. Installation of MDI Meters
13. Installation of Electromechanical Meters
14. Installation of Solid state meters.
15. Testing & Measuring of Electromechanical Meter in M&T Lab
16. Testing & Measuring of Solid State Meter in M&T Lab
17. Wiring of HT metering and protection panel in M&T Lab
18. Location of HT Panel, define its parts, work of Instrument Transformer
19. TOD/TOU Meters & their use.
20. Different Modes of Thefts and Rectification
21. Programming of TOD/TOU Meters.
22. Introduction of AMR Meters.
23. Working of AMR Meters.
24. What is GSM, GPRS
25. Knowledge about the different errors display on LCD of Meter.
26. Method of Checking CTs and proper chosen of CTs according to sanctioned load.

**COURSE CONTENTS TO BE DELIVERED FOR METER MECHANIC TO LAB ASST / TEST ASST: (M&T)**

***Course duration: 02 Weeks***

1. Basic Definitions.
2. Advance Electricity.
3. Advance knowledge of S/Phase and 3/Phase current
4. Single Phase, 3 Phase and LT MDI Meters principles and construction.
5. Parts and Principles of working of single phase, 3/Phase and LT MDI Meters.
6. Methods for checking the accuracy of S/Phase, 3/Phase and LT MDI Meters on test bench.
7. Checking of accuracy of S/Phase, 3/Phase and LT MDI Meters at site.
8. Different modes of theft & its rectification.
9. Testing of LT CTs.
10. Testing of HT CTs and PTs.
11. Installation of S/Phase, 3/Phase and LTMDI Meters.
12. Working of Mechanical/Digital Meters.
13. Installation method of HT Meters.
14. Location of Transformer in case of B2 connection.
15. Location of transformer in case of B3 connections.
16. Methods of checking of HT Meters.
17. Knowledge of over current fault protection.
18. Data retrieval of TOD/TOU Meters.
19. Basic information of AMR Meters
20. Responsibilities & Role of TA/LA.
21. Knowledge about the different errors display on LCD of Meter.
22. Method of Checking CTs and proper chosen of CTs according to sanctioned load.
23. Study of basic information of Computer
24. Application of computer (Hardware, Software & MS Office)

**COURSE CONTENTS TO BE DELIVERED FOR HELPER TO METER MECHANIC (M&T)**

***Course duration: 03 weeks***

1. Basic Definitions.
2. Ethics of Training
3. Basic Electricity concepts.
4. Direct and Alternate current.
5. Working principles of Energy meters.
6. Single phase and 3/Phase current.
7. Instrument for measuring current, Voltage, Power and Energy.
8. Types of Energy meters (S/Phase, 3/Phase Energy meters)
9. Parts of single Phase and 3/Phase Energy meters.
10. Repair of defects of energy meters (Electro-Mech).
11. Checking and adjustment of S/Phase and 3/Phase Energy Meters.
12. Basic information of CTS & PTs
13. Installation of LT MDI Meter.
14. Installation of HT Meter.
15. What is TOD and TOU Meter.
16. Basic information about ATB and HT Panel
17. Study of basic information of Computer
18. Application of computer (Hardware, Software & MS Office)

**COURSE CONTENTS TO BE DELIVERED FOR ASSISTANT FORMAN TO FORMAN (M&T)**

***Course duration: 02 weeks***

1. Basic Definitions.
2. Ethics of Training
3. Advance principles of Electricity.
4. Knowledge of safety principles.
5. Transformer Process.
6. Types of Transformers.
7. Methods of checking and location of parts in the transformer.
8. Dis-Assembly and assembly of distribution of transformers.
9. Basic & Advance information of Transformer Oil.
10. Working of OIL dehydration plant & Regeneration Plant, Replacement of its different parts.
11. Checking of filtration process of dehydration plant and replacement of filters
12. Use of Oven.
13. Difference of LT/HT windings.
14. Testing of Distribution T/Fs in Lab and as well as at site.
15. What is difference between LT/HT bushings?
16. Define Turn Ratio of distribution transformers.
17. Where Power Transformers are used.
18. What is chemical name of Transformer Oil?
19. What would be the gap size between Two Bors during testing of transformer Oil?

**COURSE CONTENTS TO BE DELIVERED FOR HELPER TO FITTER (TRW/M&T)**

***Course duration: 03 weeks***

1. Basic Definitions.
2. Ethics of Training
3. Knowledge of safety principles.
4. Basic principles of Electricity.
5. Direct and alternate current.
6. Transformer Process.
7. Different types of distribution Transformers.
8. Internal connections of distribution Transformers.
9. Dis-Assembly and assembly, different internal parts of transformers.
10. Care and handling of tools.
11. What is TTR?
12. Difference of HT/LT windings.
13. Difference of LT/HT bushes.
14. Basic information of Transformer Oil.

**COURSE CONTENTS TO BE DELIVERED FOR FITTER TO ASSISTANT FORMAN (TRW/M&T)**

***Course duration: 03 weeks***

1. Basic Principles of Electricity.
2. Ethics of Training
3. Transformer Process.
4. Types of Transformer
5. Define Turn Ratio of distribution transformers
6. Electrical testing of Transformers.
7. Location of Internal parts of Transformers.
8. Removal of Internal parts of Transformers.
9. Dis-Assembly and assembly of transformers.
10. Dehydration process of Transformer Oil
11. Different parts of dehydration plant.
12. Changing of Filters of Dehydration plant.

**COURSE CONTENTS TO BE DELIVERED FOR SR. STORE KEEPER TO STORE SUPERVISOR/ STOCK VERIFIER**

 ***Course Duration: 03 Weeks***

1. Check the documents regarding issue of material.
2. Ethics of Training
3. Check the documents regarding receipt of material
4. Prepare the Log Sheet (Issue and Receipt).
5. Prepare the Daily Activity reports.
6. Valuation of Material Return Note (MRN).
7. Allotment of Stock codes.
8. Allotment of Location codes.
9. Compile the Balance with stock card.
10. Feeding of Daily documents.
11. Prepare the Stock Adjustment Notes (SAN)
12. Clearance of Goods Transfer Notes Exception (GTN)
13. Data transmittal to the computer Centre
14. Collection of reports from Computer Centre.
15. Distribution of the reports to all fields.
16. Stores and O/O Chief Executive MEPCO detail of Print out of statements.
17. Stock adjustment reports
18. GTN Issue reports
19. GTN Receipt Reports.
20. MRN Reports
21. Store Requisition Reports.
22. GTN Exception reports
23. Active reports
24. Condense comprehensive reports of AEB.
25. Goods Receipt Note report.
26. Introduction & Use of Computer.

**COURSE CONTENTS TO BE DELIVERED FOR JR. STORE KEEPER TO SR. STORE KEEPER**

 ***Course Duration: 02 Weeks***

1. Receipt of Material.
2. Ethics of Training
3. Transfer of Material.
4. Issue of Material to Sub. Divisions.
5. Statement of accounts with Division.
6. Emergency Stock Issues.
7. Return of Serviceable Material.
8. Return of Unserviceable Material.
9. Transfer of Material form one job to another.
10. Transfer to Unserviceable / Scrap Material.
11. Reconciliation Procedure.
12. Stock Taking Procedure.
13. Preparation of Monthly stock returns/ reports.
14. Procedure for Field Stores.
15. Introduction and Use of Computer.

**COURSE CONTENTS TO BE DELIVERED FOR STORE HELPER/GATE CLERK**

 **Course Duration: 01 Weeks**

1. MEPCO Organizational Structure
2. Ethics of Training
3. Transaction Documents
4. Gate Clerk duties and responsibilities related to Gate Pass and Gate Registers
5. Human Relations
6. Personnel Procedures
7. Office Safety
8. Introduction & Use of Computer

**COURSE CONTENTS TO BE DELIVERED FOR STORE/STOCK CLERK**

 ***Course Duration: 02 Weeks***

1. MEPCO Organizational Structure
2. Ethics of Training
3. Catalogue & Non Catalogue Items
4. Transaction Documents
5. Stock and Value Control Record
6. Stock Bulletin (R-9)
7. Human Relations
8. Personnel Procedure
9. Office Safety
10. Introduction & Use of Computer

**COURSE CONTENTS TO BE DELIVERED FOR DATA CODER / DATA ENTRY OPERATOR**

 ***Course Duration: 04 Weeks***

1. **Orientation / Introduction**

 The Participants should be informed about

* Registration of Trainees
* Duration of the Course
* Objectives of training
* Terms & conditions of passing the course
* Format of the course
* Methodology that will be used for conducting the course
1. **Introduction of trainees and the trainers**
* Introduction to computer (History) Evolution of computers.
* Importance of computer
1. **Personal Computer Skills**
* Basic Computer Concepts
* Types of Computers
* Input/Outputs Devices
* .Operating Systems (Basic Concepts)
* Use of Internet, email and basic concepts
* MS-DOS (Basic Commands)
* Microsoft Office Tools
* Microsoft Office Tools
* Microsoft Word
* Microsoft Excel
* Microsoft Power Point
1. **Mainframe / Midrange Computer Skills**
* Introduction to midrange computers
* Basic concepts of Open VMS (Operating System)
* VAX-4000 Series (Basic Concepts and
* Specifications)
* System Security (System Privileges
* Login/Logout)
* System Operations (File Handling Concepts Standalone/Image Backup Restore)
* Directory Structure (Basic Concepts)
1. **Brief introduction and data flow of the following systems**
* WAPDA Department billing system
* Monthly Reporting System
* Concept of data processing in level-1 billing
* Concept of Bar-coded Billing System
* Concept of Bar-coded Cash Entry System
* Data Entry System at banks and concepts of online cash data retrieval through FTP
* Concept of cash collection through NADRA KIOSK machines
1. **Billing Schedules**
* Detailed concept of all dates on the schedules
* Concepts of main dates, given to different types of transactions.
1. **Data Preparation System (DPS)**
* Detailed introduction to all input forms
* Data filling instructions of each CP
* Data receiving instruction
* Detailed knowledge of error messages and its possible remedy in proof listing, finalization and posting of all CPs
* Processing/Checking of Dry-Run-I & II
1. **General and Industrial Billing steps**
* Manual calculation of bills for all tariffs and categories of consumers
* Checking of all outputs including ledger, billing, assessment and restore
1. **Cash System**
* Concept of mail dates with special reference to surcharge creation step
* Concept of scroll-id in bar-coded billing system
* Data receiving instructions of stubs and other documents
* Surcharge levied, surcharge right off and surcharge levied in error concepts.
* Cash collection/reporting system including all daily, weekly and monthly steps
1. **Checking of all month end outputs**
* Input / Output Reports (CPs), Name and number of each CP-Form, Basic Data control checks.
* Checking of all outputs including CP-104, CP-105, CP-95, CP-94, CP-108, CP-110, CP-41, CP-22, MIS reports, government reports, Payroll, inventory control system, EPF and adjuster reports etc.
1. **Job Description of Data Coder, Data Entry Operator and Computer Operator**
2. Maintenance and backup of different computer files on backup media and maintenance of different registers in Machine Room / Control Section

**COURSE CONTENTS TO BE DELIVERED FOR COMPUTER TRAINING**

***Course Duration: 02 Weeks***

1. **INTRODUCTION TO COMPUTER**
	1. CPU
	2. Input & Output Devices
	3. Attachment of Different parts of Computer
	4. Introduction of Software
	5. Operating System
2. **INTRODUCTION OF MS-WINDOWS**
	1. Starting Windows
	2. Desktop
	3. Recycle Bin
	4. Start Button
3. **MOST USEABLE COMMANDS OF MS-WORD**
	1. Opening MS-Word by using Start Button
	2. Creating New File
	3. Opening Existing Files
	4. Saving Files
	5. Print Commands
	6. Cut, Copy, Paste, Undo, Commands
	7. Select Text or Para Command
	8. Align Para
	9. Change Fonts & Fonts Style
	10. Text Box Function
	11. Page Numbering, Auto Text & Date and Time.
	12. Spell Check
	13. Mail Merging
	14. Table & Drawing
4. **PRACTICAL**
	1. Writing Different Types of Letter
5. **ASSIGNMENT / TEST OF MS-WORD**
6. **Most useable commands of MS-Excel**
	1. Opening MS-Excel Using Start Button
	2. Creating New Worksheet
	3. Opening Existing Worksheet
	4. Saving Worksheet
	5. Page Setting
	6. Print Preview
	7. Printing Command
	8. Cut, Copy, Paste Command
	9. Find Words
	10. Goto Command (Different Number of Page or Rows, Columns In worksheet)
	11. Selecting Range of Cells
	12. Align Data Between Cells
	13. Sheet Rename.
	14. Merge Command
	15. How to create difference types of Charts
	16. Change Row Height And Width
	17. Change Column Height And Width
	18. Formulas
7. Sum etc 2. Average 3. Logical Functions, Financial Functions
8. **Practical of MS-Excel**

 1. Creating Different Types of Tables/Statements

1. **Assignment / Test of MS-Excel**
2. ***MS-POWER POINT***
* Creating New Slides
* How to use Auto content Wizard
* Template & Blank Presentation options.
1. **Virus & Virus Protection**
2. **Introduction of Networking**
3. **Introduction of Internet, Email Send & Receive etc.**

**COURSE CONTENTS TO BE DELIVERED FOR ACCOUNT ASSISTANT/AUDIT ASSISTANT TO DAO/AAO/DAO (REGULAR) COURSE**

 ***Course Duration: 08 Weeks***

**Part-A Codes & Manuals**

**(50% Objective & 50% Subjective)**

1. General Financial Rules Vol-I (Amended upto 1979)

1. Chapter-1 Definitions
2. Chapter-2 General System of Financial Management & Control
3. Chapter-5 Stores
4. Chapter-9 Works
5. Chapter-13 Loans and Advances

2. Audit Manual (Extracts from Manual, First Edition Printed by WAPDA Printing Press)

1. Chapter-1 General Instructions regarding Procedure and extent of audit
2. Chapter-17 General Arrangement and Methods of Work
3. Chapter-18 Audit Register and Note books
4. Chapter-20 Audit of works Accounts
5. Chapter-21 Audit of Remittances
6. Chapter-22 Audit of Suspense Heads, Deposits and temporary Advances
7. Chapter-23 Audit of other monthly Schedules & Accounts
8. Chapter-24 Miscellaneous Returns
9. Chapter-25 Settlement of Remittances
10. Chapter-26 Objects in Audit
11. Chapter-28 Objection on Public Works
12. Chapter-31 Inspection and Local Audit

3. Budget Manual Revised Edition March 1978

4. Manual of General Rules (Amended upto 2001)

1. Chapter-2 Pakistan WAPDA E&D Rules
2. Chapter-6 The Pakistan WAPDA Leave Rules
3. Chapter-7 The Pakistan WAPDA Medical attendances Rules 1979
4. Chapter-10 Rules Regarding the grant of Advances for the Purchase of Car/Motorcycle/Scooter/Cycle 1962
5. Chapter-11 The Pakistan WAPDA Rules Regulating the grant of advances for construction /purchase of House/Plot 1967
6. Chapter-12 The Pakistan WAPDA TA Rules 1982

5. Fundamental Rules and Supplementary Rules

1. Chapter-II Definitions
2. Chapter-III General Conditions of Service
3. Chapter-IV Pay
4. Chapter-V Additions to Pay
5. Chapter-VIII Dismissal, Removal and Suspension
6. Chapter-XI Joining Time
7. Chapter-XXII Account of Joining time admissible (FR-106)

6. Delegation of Financial Powers DISCOs Section-I & Section XV (Amended upto 2003)

7. Pension Rules 1977

**Paper-B Accounting and Auditing**

**(50% Objective & 50% Subjective)**

1. Journalizing, Posting, Trail Balance, Banking Transaction, Bank, Reconciliation Statement, Depreciation, Rectification of errors and final accounts (Elementary Leave)

 2. WAPDA Accounting Manual (Amended upto 1981)

1. Chapter-I Cash
2. Chapter-IV Inter Office Transaction
3. Chapter-VI Journal

3. Direct/Indirect Taxes

1. Income Tax Ordinance 2001 (Elementary Level)
2. Sales Tax Act 1990 (Elementary Level)
3. Provincial Sales Tax Act 2012 (Elementary Level)

**Note:**

Books including training manual expect Book keeping would be allowed for Consultation for Paper-I but no typed or written material (Commentary) would be permitted.

**COURSE CONTENTS TO BE DELIVERED FOR JR.CLERK TO ACCOUNT AUDIT ASSISTANT**

 Course Duration: 08 Weeks

1. Pakistan WAPDA Leave Rules 1982
2. Definition
3. Ethics of Training
4. Job Description
5. Introduction
6. Pakistan WAPDA employees medical attendance Rules 1979
7. General System of Financial Management & Control
8. Nature of Accounts & Rules for Debit & Credit
9. Revenue & Receipts
10. Journal
11. Rules & Regulations to grant of advances for purchase of Motor Car, Motor Cycle, Scooter/Cycle 1962
12. Power of Sanction
13. Ledger Posting
14. Financial Management and Decision Making
15. Stores & Works
16. Pakistan WAPDA Rules regulating the grant of advances for construction/purchase of house/plots 1967
17. Bank Reconciliation Statement & Depreciation
18. Cash
19. The Pakistan WAPDA TA Rules 1982
20. Enter office transactions
21. Company Law
22. Journal
23. Definition of Fundamental Rules & Supplementary Rules
24. General Instructions regarding procedure and extent of audit
25. Rectification of error and ledger posting
26. Banking Law
27. General amendment & method of work
28. Adjustment at balancing time
29. Audit register & Note Books
30. General Condition of Service
31. Audit of works accounts
32. Final Account
33. Pay
34. Audit of Remittance
35. Addition of Pay
36. Audit of suspense heads deposits and Takavi advance
37. Income Tax Law
38. Audit of other monthly scheduled & Accounts
39. Final Account
40. Dismissal/Removal & Suspension
41. Misc. Return
42. Company Account
43. Joining Time
44. Settlement of Remittance
45. Account of joining time admissible (FR 106)
46. Object in Audit
47. Capital & Revenue expenditure
48. WAPDA Purchase/disposable procedure
49. Objection on public works
50. Delegation of Financial Power
51. Inspection and local Audit
52. Introduction to Ordinance 2000 (Special Powers) Removal from Service.
53. WAPDA Act
54. CPW Account Book
55. Sub Division Journal/Cash Book
56. Pension Rules 1977
57. Budget Manual
58. Auditing
59. Corporatization, Loyalty to Organization and Management Skills

**COURSE CONTENTS TO BE DELIVERED FOR LS-II TO LS-I (GSO/GSC)**

***Course Duration: 06 Weeks***

1. First aid safety principles.
2. Identification of tools LS/Line Hard-Wares and overhauling of hand hoist and it use.
3. Identification of different types of A.C.S.R conductors used in T/Lines.
4. Introduction of rigging. Knowledge of line clearance & electricity act.
5. Inspection of parachute hardness its care. Knowledge of ropes, Knots, Splices, Hitches and slings.
6. Insulation testing of disc insulators by using Megger.
7. Safe climbing procedure, installation/use of rope, ladder and grounding producer for grounding conductor.
8. Errection of tower, preparation of estimate and reading profile of T/L.
9. Measurement and fixation of sag.
10. Replacement of vibration damper/disc insulator and insulator string of 220/132KV suspension and tension tower.
11. Replacement of damper/disc insulator and insulator string of 500KV suspension and tension tower.
12. Lowering conductor to ground of 500/220/132KV by using truck for installation of M.S. Joint/repair sleeves and use of hydraulic press machine.
13. Foot patrolling/tower inspection.
14. Commissioning inspection.
15. Practical and theory test.
16. Planning Of Work With
* Efficiency of time & cost.
* Project time scheduling.
1. Material Management.
* For Transmission Line.
* For Grid Station.
* Theft avoidance.
* Just on time inventory.
1. Labour Management.
* Motivation.
* Incentive
* Grievance Procedure.
* Coercive Measures.

**NOTE: 02 Weeks ON JOB TRAINING PROGRAM**

1. External OJT program at WAPDA engineering academy Faisalabad.
2. Local OJT Program MEPCO Formation.

**COURSE CONTENTS TO BE DELIVERED FOR LM-I TO LS-II (GSO/GSC)**

***Course Duration: 06 Weeks***

1. Safety principles and voltage identification.
2. Identification of tools/line hard wares and overhauling of hand hoist and its use.
3. Identification of different types of A.C.S.R conductors used in T/Lines.
4. Inspection of parachute hardness/its care, knowledge of ropes, knots/splices, hitches & slings.
5. Safe climbing procedure, installation/use of rope ladder and grounding procedure for grounding conductor.
6. Replacement of vibration damper/disc insulator and insulator string of 132kv suspension and tension tower.
7. Replacement of spacer/disc insulator/ insulator string of suspension and tension tower.
8. 132kv by using truck for installation of M.S. joint / repair sleeves and use of hydraulic press machine.
9. Foot patrolling / tower inspection.
10. Commissioning inspection.
11. Practical and theory test.
12. Types of tower used in 132kv & 66kv T/Line.
13. Types of tower foundation (132kv & 66kv)
14. Types of insulators difference between porcelain insulators & glass insulators.
15. Estimate Preparation.
16. PTW (Rules & Procedure)
17. Single Line Diagram
18. Familiarity purpose of equipment installed in the G/S
19. Concept of insulation and clearances.
20. Cable laying schedule preparation.
21. Reading of connection diagram.
22. Interlocking purpose.
23. Protection schemes in general.

**COURSE CONTENTS TO BE DELIVERED FOR LM-II TO LM-I (GSO/GSC)**

***Course Duration : 06 Weeks***

1. Safety principles and voltage identification.
2. Identification of tools/line hard wares and overhauling of hand hoist and its use.
3. Inspection of parachute hardness/its care, knowledge of ropes, knots/splices, hitches & slings.
4. Safe climbing procedure, installation/use of rope ladder and grounding procedure for grounding conductor.
5. Replacement of vibration damper/disc insulator and insulator string of 132kv suspension and tension tower.
6. Lowering of conductor to ground of 132kv by using truck for installation of M.S. joint / repair sleeves.
7. Foot patrolling / tower inspection.
8. Practical and theory test.
9. Types of tower used in 132kv & 66kv T/line
10. Types of tower foundation (132kv & 66kv)
11. Planning of work
12. Work Scheduling.
13. Labour Management according to work.
14. How to avail PTW within schedule time.

**COURSE CONTENTS TO BE DELIVERED FOR ALM TO LM-II (GSO/GSC)**

***Course Duration: 06 Weeks***

1. Safety principles and voltage identification.
2. Identification of tools/line hard wares and overhauling of hand hoist and its use.
3. Inspection of parachute hardness/its care, knowledge of ropes, knots/splices, hitches & slings.
4. Safe climbing procedure, installation/use of rope ladder and grounding procedure for grounding conductor.
5. Replacement of vibration damper/disc insulator and insulator string of 132kv suspension and tension tower.
6. Lowering of conductor to ground of 132kv by using truck for installation of M.S. joint / repair sleeves.
7. Practical and theory test.
8. Safety – Extra for HV 132KV System.
9. Physical Psychological Condition to work.
* At Towers.
* In Yard.
1. Behavioral Training as Senior.

**COURSE CONTENTS TO BE DELIVERED FOR METER MECHANIC/RELAY MECHANIC/MACHINE ATTENDANT TO LAB ASSISTANT (P&I/T&I)**

 **Course Duration: 06 Weeks**

1. Safety and first aid principles.
2. Reading and understanding of schematic and wiring diagrams.
3. Metering Instruments & System with their circuits.
	1. Ammeter
	2. Voltmeter
	3. MW & MVAR Meters
	4. Energy Meters
4. Current Transformer (C.Ts)
	1. Introduction to Current Transformer
	2. Use of Current Transformer & Other circuits
	3. Metering Circuits
	4. Protection Circuits
	5. Testing of Current Transformers.
5. Continuity Test
6. Insulation Test
7. Ratio Test
8. Potential Transformer.
	1. Introduction of Potential Transformers
	2. Use of Potential Transformers and their circuits
9. Metering circuits
10. Protection Circuits
	1. Testing of Potential Transformers
11. Over Current Protection
	1. Introduction of Over Current Protection
	2. Types of Over Current Relays
		1. Instantaneous Over Current Relays
		2. Time Delay Over Current relays
	3. Definite Time Over Current Relays
	4. Inverse Time Over Current Relays
12. Normal Inverse Time over Current Relays.
13. Very Inverse Over Current Relays
14. Extremely Inverse Over Current Relays
	1. Construction-wise Type of Relays
	2. Electromechanical Relays
	3. Electronic Relays
	4. Digital Relays Numerical Relays
	5. Numerical Relays
	6. Testing of Over Current Relays
	7. Pick-up Test
	8. Time Curve Verification of Relays
	9. Instantaneous Unit Pick-up Test
15. Earth Fault Protection
	1. Introduction to Earth Fault Protection.
	2. Circuit Understanding & Testing.
16. Transformer Mechanical Protection, Understanding & Testing
	1. Buchholz Relays
	2. Oil Temperature Relays
	3. Winding Temperature Relays
	4. Sudden Pressure Relays
17. Differential Protection
	1. Introduction of Differential Protection
	2. Transformer Differential Protection
	3. Two winding Transformer differential Protection
18. Distance Protection
	1. Introduction of Distance Protection
19. AC & DC Auxiliary Schemes and its testing
20. Annunciation
	1. Introduction of Annunciators
	2. Types of Annunciators
	3. Relay Type Annunciators
	4. Electric Types Annunciator
	5. Audible Alarm
	6. Visible Annunciation
	7. Operation of Annunciator
	8. Fault Acceptance or Acknowledgement
	9. Verification and re-setting the Annunciator
21. Use of Equipment
	1. Primary Injection Test Set
	2. Secondary Injection Test set
	3. Megger Test Set

**COURSE CONTENTS TO BE DELIVERED FOR ASSA / HELPER TO METER MECHANIC/RELAY MECHANIC MACHINE ATTENDANT (P&I/T&I)**

 **Course Duration: 06 Weeks**

1. Safety and first aid principles.
2. Reading and understanding of schematic and wiring diagrams.
3. Metering Instruments & System with their circuits.
	1. Ammeter
	2. Voltmeter
	3. MW & MVAR Meters
	4. Energy Meters
4. Current Transformer (C.Ts)
	1. Introduction to Current Transformer
	2. Use of Current Transformer & Other circuits
	3. Metering Circuits
	4. Protection Circuits
	5. Testing of Current Transformers.
5. Continuity Test
6. Insulation Test
7. Ratio Test
8. Potential Transformer.
	1. Introduction of Potential Transformers
	2. Use of Potential Transformers and their circuits
9. Metering circuits
10. Protection Circuits
	1. Testing of Potential Transformers
11. Over Current Protection

6.1 Introduction of Over Current Protection

6.2 Types of Over Current Relays

6.3 Instantaneous Over Current Relays

6.4 Time Delay over Current relays

* 1. Definite Time Over Current Relays
	2. Inverse Time Over Current Relays
1. Normal Inverse Time over Current Relays.
2. Vary Inverse Over Current Relays
3. Extremely Inverse Over Current Relays

6.5 Construction-wise Type of Relays

* 1. Electromechanical Relays
	2. Electronic Relays
	3. Digital Relays Numerical Relays
	4. Numerical Relays

6.6 Testing of Over Current Relays

* 1. Pick-up Test
	2. Time Curve Verification of Relays
	3. Instantaneous Unit Pick-up Test
1. Earth Fault Protection
	1. Introduction to Earth Fault Protection.
	2. Circuit Understanding & Testing.

**COURSE CONTENTS TO BE DELIVERED FOR LAB ASSISTANT TO TEST INSPECTOR (P&I)**

 **Course Duration: 06 Weeks**

1. Safety and first aid principles
2. Reading and understanding of schematic and wiring diagrams
	1. Trouble shooting of wiring problems
3. Metering instruments & system with their circuits
	1. Ammeter
	2. Volt Meter
	3. MW & MVAR Meters
	4. Energy Meters
	5. Calibration of all types of meters including energy meters
4. Current Transformers (C.Ts)
	1. Introduction to Current Transformer
	2. Types of Current Transformers
		1. Wound type Current Transformers
		2. Through Type Current Transformers
5. Bushing Type Current Transformers
6. Window Type Current Transformers
7. Bar type Current Transformers
8. Behave type Current Transformers
	1. Use of Current Transformers and their circuits.
	2. Metering Circuits
	3. Protection Circuits
	4. Testing of Current Transformers
		1. Continuity Test
		2. Insulation Test
		3. Ratio Test
		4. Polarity Test
		5. Saturation Test
	5. Testing and troubleshooting of CT Circuits on live and de-energized circuits
9. Potential Transformer
	1. Introduction of Potential Transformers
	2. Types of Potential Transformers
	3. Winding type
	4. Capacitive Type
	5. Use of Potential Transformers and their circuits
		1. Metering Circuits
		2. Protection Circuits
	6. Testing of Potential Transformers
		* 1. Continuity Test
			2. Insulation Test
			3. Ratio Test
			4. Polarity Test
	7. Testing and Trouble Shooting of PT circuits on live de-energized circuits
10. Over Current Protection
	1. Introduction of Over Current Protection
	2. Types of Over Current relays
		1. Instantaneous Over Current Relays
		2. Time Delay Over Current Relays
	3. Definite Time Over Current Relays
	4. Inverse Time Over Current Relays
		* + 1. Normal Inverse Time Over Current Relays
				2. Very Inverse Over Current Relays
				3. Extremely Inverse Over Current Relay
	5. Construction wise Type of Relays

i) Electromechanical Relays

ii) Electronic Relays

iii) Digital Relays

iv) Numerical Relays

* 1. Testing of Over Current Relays

i) Pick-up Test.

ii) Time Curve Verification of Relays.

iii) Instantaneous Unit Pick-up Test.

7- Earth Protection

 i) Introduction to earth Fault Protection

 ii) Circuit Understanding and Testing

8- Transformer Mechanical Protection Understanding & Testing

8.1 Buchholz Relay

8.2 Oil Temperature Relay

8.3 Winding Temperature Relays

8.4 Sudden Pressure Relays

9- Differential Protection

 9.1 Introduction of Different Protection

 9.2 Line Differential and Transformer protection

 9.3 Two winding Transformer Differential protection.

 9.4 Three winding transformer differential protection.

 9.5 Matching or Balancing of Differential Relays.

 9.6 Testing of Differential Protection.

 i) Pick-up Test

 ii) Differential Current Curve Verification test.

 iii) Stability Test.

10- Distance Protection

 10.1 Introduction of Distance Protection

 10.2 Introduction to Different Types of Distance Relays

i) Electromechanical Relays

ii) Electronic Relays

iii) Digital Relays

iv) Numerical Relays

v) Switched Relays

vi) Non-Switched Relays

10.3 Testing of Distance Protection

 i) Understanding of Settings

 ii) Starter Testing

 iii) Zones Testing

 iv) Directional Testing

 v) Power Swing Blocking Test

 vi) Switch on to Fault test

11- Introduction to Bus Bar Protection

12- Introduction to Breaker Failure Protection

13- AC & DC Auxiliary Schemes and its testing

14- Annunciation

 14.1 Introduction of Annunciators

 14.2 Types of Annunciators

 i) Relay Type Annunciators

 ii) Electronic Type Annunciators

 iii) Audible Alarm

 iv) Visible Annunciation

 14.3 Operation of Annunciator

 i) Fault Acceptance or Acknowledgement

 ii) Verification and re-setting the Annunciator

15- Time coordination.

16- Insulation coordination.

17- How to Guage degraded Results for Aged Power Transformer.

18- Importance of Earthing and Fault Dissipation.

**COURSE CONTENTS TO BE DELIVERED FOR ASSA TO SSA (GSO)**

***Course Duration: 06 Weeks***

1. Knowledge of safety principles.
2. Introduction to Grid Station Equipment.
3. DC Battery and Rectifier.
4. Basic Principles of electricity.
5. Use of AVO Meter and tools available in control room.
6. Study of wiring and schematic drawings.
7. Recording of daily loading data.
8. Types of forms/documents used in grid station
9. Maintenance general clearing of grid station equipments up to safe limit.

**COURSE CONTENTS TO BE DELIVERED FOR SSA TO SSO-II (GSO)**

***Course Duration: 06 Weeks***

1. Introduction to Elements of Power System.
2. Introduction to Grid Station Equipment.
3. D.C Battery and Rectifier.
4. Introduction to Control/Relay Panel.
5. Metering & Protection Relay and Annunciator.
6. Safety and First Aid.
7. Control Board.
8. Recording of Daily Loading Data of Electrical Equipment.
9. Types of forms/documents used in grid station.
10. Station supply system.
11. Switching of Power System. Execution under the instructions of NPCC & Co-ordination with SE GSO, XEN GSO & MEPCO.
12. Permit to work.
13. Station Inspection of HV Circuit Breakers, Power Transformers, Isolators, Bus bar, C.Ts, Lightening Arrester, Capacitor Banks, Rectifier and Batteries.
14. Station Inspection of Compressed Air Systems.
15. Routine Maintenance of grid station equipments.
16. Earth mesh of grid station causes of failure of earthing system.
17. Types of Power Cables used at grid station, causes of damaging of power cables.

**COURSE CONTENTS TO BE DELIVERED FOR SSO-II TO SSO-I (GSO)**

 ***Course Duration: 06 Weeks***

1. Introduction to Elements of Power System.
2. Introduction to Grid Station Equipment.
3. D.C Battery and Rectifier.
4. Metering
5. Protection / Relays.
6. Safety and first Aid.
7. Control Board.
8. Recording of Daily Loading Data.
9. Types of forms/documents used in grid station.
10. Station supply system.
11. Job Planning.
12. Permit to work.
13. Station Inspection of HV Circuit Breakers, Power Transformer, Isolators, Bus bar, C.Ts, P.Ts, Lightening Arrester and Capacitor banks.
14. Station Inspection of Compressed Air Systems.
15. Monitoring of Annual Maintenance of HV Circuit Breakers, Power Transformers, Protection, 11kv Breaker Station Ground, Earth Resistance and Station Battery.
16. Earth mesh of Grid Station causes of failure of earthing system.
17. Types of Power Cables used at Grid Station.
18. Duties of SSO.

**COURSE CONTENTS TO BE DELIVERED FOR ASSA TO FITTER (GSO)**

***Course Duration: 06 Weeks***

1. Knowledge of safety principles.
2. Basic principle of Electricity.
3. Direct and Alternating current.
4. Use of AVO meter.
5. Study of wiring and schematic drawings.
6. Introduction to D.C Batteries and Rectifier.
7. Introduction to testing equipment i.e. Megger, Earth resistance set, Oil testing.
8. Care and handling of tools.
9. General Maintenance of Grid Station equipments.

**COURSE CONTENTS TO BE DELIVERED FOR FITTER-I TO ASSISTANT FOREMAN (GSO)**

***Course Duration: 06 Weeks***

1. Knowledge of Safety Principles.
2. Temporary grounding.
3. Proper use of testing instruments.
4. Study of wiring and schematic diagram and trouble shooting.
5. Power transformer constructions.
6. Maintenance of transformers.
7. Maintenance C.Bs.
8. Maintenance of Batteries.
9. Maintenance of Rectifiers.
10. Maintenance of Power Cables.
11. Maintenance of Isolators & Earthing.
12. Dehydration process of Transformer oil, changing filter of dehydration plant, oil testing of transformer oil.

**COURSE CONTENTS TO BE DELIVERED FOR ASSISTANT FOREMAN TO FOREMAN (GSO)**

***Course Duration: 06 Weeks***

1. Knowledge of First Aid & Safety Principles.
2. Basic Principles of Electricity.
3. Testing of Power Transformer TTR.
4. Testing of 132kv circuit breakers timing & contact resistance.
5. Testing of D.C battery.
6. Testing of Battery Charger.
7. Testing of Power Lightening Arrestor.
8. Periodic Maintenance and Overhauling of transformers, C.Bs, Batteries.
9. Testing equipment knowledge.
10. Knowledge of wiring and schematic equipment.
11. Periodic maintenance of Isolator, Power Transformer, CBs, Batteries.
12. Testing and checking of earthing of grid station.
13. Working of Dehydration plant, replacement of different parts.
14. Checking of filtration process of Dehydration plant and replacement of filters.
15. Importance of Grounding.
16. Heat production related to Joints.
17. Fault Dissipation – Why needed?
18. Insulation Coordination.
19. Time Coordination.
20. Contract Area Of Joints / Connectors
* Planning of work.
* Labour Management.

**COURSE CONTENTS TO BE DELIVERED FOR CABLE JOINTER (GSO/GSC)**

***Course Duration: 06 Weeks***

1. Introduction
2. Tools, Soldering Work
3. Wire Characteristics
	1. Conductors
	2. Sizes
	3. Insulation
	4. Ampacity
4. Components and Basic of High Voltage Cables
	1. Cable Construction
	2. High Stress
	3. Corona
	4. Flashover
	5. Tracking
5. Basic Cable Handling Techniques
	1. Roughing the Cable Jacket
	2. Removing the Cable Jacket
	3. Removing the Bedding Tape
	4. Terminating a Drain Wire Metallic Shield
	5. Terminating the nonmetallic Shield
	6. Removing Insulation
	7. Cleaning Cable
	8. Attaching a Terminal Lug or Splice Connector
	9. Building a Stress Cove
6. Joints & Terminations
	1. Classes of Terminations
	2. Differences Between Termination and Splices
	3. Making a Class 3 Termination
	4. Making a Class 2 Termination
	5. Making a Class 1 Termination
	6. Removing Cable Jacket from Ribbon-Shielded Cable
	7. Tinning and Attaching a Braided Ground Sharp
	8. Installing Pre Stretched Tubing
	9. Attaching a Ground Connection to a Preformed Stress Cone
	10. Applying Stress-Relief Tubing
	11. Applying Moisture proof Tubing
	12. Tracking Skirts
	13. To Work With Heat-Shrinkable Materials
7. Construction of Cable Distribution Systems
	1. Open and Closed Networks
8. Theory and Practice of Cable Fault Finding With the Help of a Pulse Reflection Instrument

**Annex**

Loaded Lines – voltage drop & power loss

**COURSE CONTENTS TO BE DELIVERED FOR INDUCTION OF LS-II (T-150)**

 ***Course Duration: 03 Weeks***

1. Introduction to MEPCO organization and responsibilities of line superintendent.
2. Safety and Safety Equipments.
3. First Aid Skills.
4. Fire Fighting.
5. Introduction and use of T&P.
6. Material use in Line Construction.
7. Handling & Storage of Line Material.
8. Erection of Pole / Structure.
9. Selected WAPDA’s Distribution system Standards / Specification.
10. Basic Electricity concept and testing / measuring Instruments and their uses.
11. Guy and Installation of Guys.
12. WAPDA standard specifications.
13. Line Configuration and Installation of Conductor.
14. Splicing of Conductor.
15. Installation of Earth System.
16. Installation of Service Line (LT) and Energy Meter.
17. Transformer, Installation and protection of Transformer.
18. Voltage Improvement Devices (Capacitor, Regulator)
19. Distribution system maintenance.
20. Location of Faults and Consumer Complaints.
21. Mapping and LT Proposals.
22. Revenue Generation Task Force (RGTF).
23. Main Problems of Distribution System.

**COURSE CONTENTS TO BE DELIVERED FOR INDUCTION OF ALM (T-50)**

 ***Course Duration: 04 Month***

1. Introduction to the training program / Ethics.
2. Distribution organization and distribution system.
3. Human Relation and Role / Function of the ALM.
4. Safety & Safety Equipments.
5. Fire Fighting.
6. First Aid Skills & Practices.
7. Tools & Plants (T&P)
8. Use / Care of Hand Tools.
9. Testing & Measuring Equipments.
10. Material used in line construction.
11. Handling/Storage of Line Material.
12. Excavation Works.
13. Errection of Pole/Structure
14. Climbing of Pole / Structure.
15. Installation of Guys.
16. Installation of Conductors.
17. Splicing of Conductors.
18. Installation of Earth Systems
19. Installation of Services (LT).
20. Energy Meters.
21. Installation / Protection of Distribution Transformers.
22. Voltage Improvement Devices: Capacitors and Regulators.
23. Distribution System Maintenance
24. Patrolling of Lines.
25. Tree Trimming and Tree Cutting.
26. Location of Faults.
27. Consumer’s Complaints & Rectification
28. OJT (On Job Training) Program at Work Site.

**Note:** Safety Training will be exercised for 04 Weeks period (General Safety Training & Quick Impact Safety Training Program)

**COURSE CONTENTS TO BE DELIVERED FOR INDUCTION OF BD (C-50)**

 ***Course Duration: 03 Days***

1. Structure / Function of S.E, XEN, SDO and R.O Offices.
2. Over view of role and function of the Bill Distributors.
3. Receiving Customer Bill for Distribution.
4. Bill Delivery to customers.
5. Customer Relations, Ethics and Safety.

**COURSE CONTENTS TO BE DELIVERED FOR INDUCTION OF METER READER (C-150)**

 ***Course Duration: 01 Week***

1. MEPCO Organizational Structure.
2. Meter Reading Functions and Reading of Various Energy Meters.
3. Physical Defects / Faults in KWH Meters.
4. Basic Mathematical Review.
5. Routification & Re-Routification and Allotment of Reference Numbers.
6. Recording Meter Readings on the Meter Reading Cards (Kalamzoo Card).
7. Recording Meter Readings on the Meter Reading/Premises at Consumers.
8. Customer Relations / Ethics and Safety.
9. Improving Communication Skills.
10. Maintaining Discipline and use of Influence and Authority.
11. Responsibility.

**COURSE CONTENTS OF SURVEYOR TO OVERSEER**

**Course duration: 03 Weeks**

1. Job description of Surveyor & Surveying
2. Equipments / Instruments use in surveying
3. Plan tabling survey
4. Usage of Signs / Signals used in survey and Ranging Rod
5. Survey Data Records
6. Using Plumb Bob and tape
7. Use of theodolite.
8. Simple circular curve by theodolite methods.
9. Using Electronic Distance Measuring Instruments and Data Collector
10. Surveying of WAPDA’s Mapping System
11. Contouring
12. Preparation of Estimate.
13. Supervision of Civil Works
	1. Supervision of Civil Works
	2. Construction of Building RCC Works
	3. Sanitary fitting & Electrification of Building
	4. Sewerage System and Water Supply
	5. Road Works
	6. Water Proofing
	7. Pile Work
	8. Tendering Process
14. Testing of Material
15. Preparation of Bill
16. Field Work
17. Preparation of Rate Analysis
18. Preparation of Comparison Statement of Market Rates with WAPDA Composite Schedule of Rates
19. Consulting / Use of WAPDA drafting Standards.
20. Materials of Construction
21. Culverts & Bridges
22. Drain & Drainage
23. Basic Management & Communication Skill
24. Human Relation, Behavior / Attitude and Loyalty to Organization
25. Introduction & Usages of Computer

**COURSE CONTENTS OF MORTAR MATE**

**Course duration: 03 Weeks**

Ethics of Training

Job Description of Mortar Mate

Using of Measurement Equipment (Tapes)

Civil Works (Building)

1. Construction Material
2. Use of Construction Material

Road Works

1. Road Material

Using of Ranging Rod / Arrows

**COURSE CONTENTS OF WORK MISTRY**

**Course duration: 03 Weeks**

1. Ethics of Training
2. Job Description of Work Mistry
3. Using of Field Measuring Equipments (Ranging Rod, Arrows, Plum Bob, Hand Level, Water Level and Tapes)
4. Civil Works
	1. Construction Material
	2. Use of Construction Material
5. Road Works
	1. Road Material
6. Sewerage
7. Water Supply

**COURSE CONTENTS OF WORK SUPERVISOR/ SURVEYOR**

**Course duration: 03 Weeks**

1. Ethics of Training
2. Job Description of Work Mistry
3. Using of Field Measuring Equipments (Ranging Rod, Arrows, Plum Bob, Hand Level, Water Level and Tapes)
4. Use of Signs / Signals in Survey
5. Civil Works
	1. Construction Material
	2. Use of Construction Material
6. Road Works
	1. Road Material
7. Sewerage
8. Water Supply
9. Supervision of Civil Works (Construction of Building, RCC Work, Sanitary Fitting and Internal Electrification of Building)

**COURSE CONTENTS TO BE DELIVERED FOR INDUCTION OF JR. ENGINEERS**

 ***Course Duration: 02 Week***

1. Grid Station Operation
2. Commercial Procedure
3. Detection Policy
4. RCO Policy
5. DCO Policy
6. Latest Relief/Incentive Package
7. Types of Tariff and its application
8. Dealing of Court Cases
9. Functions of Management
10. Leadership & its Importance and Total Quality Management (TQM)
11. Decision Making
12. Communication Process and Skill
13. Computer & Internet
14. Conflict Management
15. Labour Laws and Jurisdiction of various Course
16. Enquiries & Procedure of Enquires
17. WAPDA Travelling Allowance Rules
18. WAPDA Leave Rules
19. WAPDA Medical Rules
20. Staff duties and Office Management
21. Importance of Finance/Financial Management for the Financial viability of Company
22. Delegation of Financial Powers
23. Use of Petty Cash Imprest
24. Checking & approving of payment vouchers etc.
25. Measurement to stop Embezzlement
26. Working of Transformer
27. Loading of Transformer
28. Transformer Installation, Operation & Maintenance
29. Causes to Damage of Transformer and its remedies
30. Damages of Transformer its repair & procedure
31. Function of Meter
32. Types of Meter with reference to tariff
33. Recalibration of Meter & Usual Defects of Meter
34. Mode of theft and its rectification
35. Duties & Responsibilities
36. Line losses its causes & Rectification
37. Voltage Drops its causes & Rectification
38. System Outage its causes and Rectification
39. Importance to Job briefing and its application
40. Self-Safety, Workers Safety, Customers Safety and Safety of System.