Programme Handbook

Induction Training

of

Junior Telecom Officer (JTO) Trainees

National Telecommunications Institute for Policy Research, Innovation & Training
Department of Telecommunications, Ministry of Communications & IT
ALTTTC Campus, Govt of India Enclave
Ghaziabad-201002, India
Website: www.ntiprit.gov.in
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Appendix: *Shishtachar* booklet
ABOUT NTIPRIT

The National Institute for Policy Research, Innovation and Training (NTIPRIT), Ghaziabad is the premier training institution of the Department of Telecommunications under the Ministry of Communications & IT, Government of India. Initially it was set up as National Telecom Academy (NTA) in 2010 to assist the Govt. to meet the long term requirements of trained personnel for planning, licensing, monitoring and management of the rapidly developing telecommunication network in India. In March 2011, NTA was upgraded to NTIPRIT bringing Policy Research and Innovation under its scope of activities. One of the prime responsibilities of the institute is to impart induction training to all the newly inducted officers of the Department such as ITS Officer and Junior Telecom Officer. This Centre also imparts technical as well as managerial trainings to in-service officers of the Department of Telecom and its training expertise is open to other Govt. departments and industry.

NTIPRIT is enlisted as one of the Central Training Institutions (CTIs) in the country by the Department of Personnel & Training, Ministry of Personnel, Public Grievances and Pensions, Govt. of India.

At present, NTIPRIT is operating from ALTTC campus which consists of Administrative and Academic Blocks, Satellite Earth Station, hostels and residential complex spread over 81 acres of land situated in Government of India Enclave, Rajnagar, Ghaziabad. The Institute is nearly 30 Kms from New Delhi Railway Station and about 50 kms from Indira Gandhi International Airport, New Delhi.
FACILITIES AT NITIPRIT-ALTTC CAMPUS

OFFICE COMPLEX: Administrative Block of the ALTTC campus houses, on its eight floors, a good number of fully equipped classrooms with audio-visual aids, a library, a seminar hall, a conference hall to accommodate ninety persons and a canteen. The Academic Block houses laboratories of latest technologies such as NGN, 3G, GSM, CDMA, SDH, DWDM, Broadband etc. A little distance away from these blocks is the Satellite Earth Station easily distinguished by its large antenna disc.

HOSTELS: There are three hostels for course participants namely J.C. Bose Hostel, Raman Hostel and Bhabha hostel. Residence in the campus is compulsory for the Officer Trainees under probation. Permission to stay outside will be accorded only under the most compelling circumstances. Families and guests are not allowed to stay in the hostels.

AUDITORIUM: The campus has a state-of-the-art, multipurpose auditorium named C.K. Reddi Hall with a seating capacity of about five hundred. All landmark events of campus are held here and it has a rich heritage of hosting some of the finest artistes of the world and leading personalities who have been successful in their respective fields.

SHOPPING CENTRE: A small shopping centre with few shops and a bank is situated between the colony and hostels to cater to both the residents and trainees.

SPORTS FACILITIES: The campus provides various sports and recreation facilities for the trainee officers and faculty members. There are two Tennis courts as well as Volleyball and Basketball courts all of which are located close to the hostels. The student centre provides facilities for Table Tennis, Billiards, Chess, Carom, Cards etc. Adjoining the Student Centre is a Gymnasium Hall, which houses two indoor Badminton Courts, being another attraction for the trainees. A Cricket ground and a Football field with athletic track are also available in the campus.
ABOUT THE INDUCTION TRAINING PROGRAMME

OBJECTIVES:
The purpose of this course is to prepare the Junior Telecom Officer Trainees (referred as JTOs in this handbook), under probation, for handling various duties assigned in Department of Telecommunications such as office administration, licensing functions, telecom enforcement & monitoring, PSU coordination, standardisation & framing of specifications/standards for telecom network and equipment etc. It also provides a strong foundation through specialised training in telecom technologies. This course exposes the participants to the fundamentals for telecom administration covering macro environment as well as the departmental rules. Apart from above, the JTO Trainees learn the fundamentals & basics of telecommunication infrastructure. The course also helps the JTO Trainees to learn managerial skills and information technology for office working.

CONTENTS:
The Programme broadly comprises classroom modules at NTIPRIT and field attachment to various units such as DoT Headquarter, Telecommunications Engineering Centre (TEC) and Telecom Enforcement, Resource & Monitoring (TERM) Cells.

The description of training modules, given in this handbook, is indicative only. The training structure, sequence of training modules and field attachments, their contents and duration may be changed at any stage to cover the latest developments and emerging needs or due to other administrative reasons.
# SCHEDULE OF THE TRAINING AND FIELD ATTACHMENT PROGRAMME

The schedule of the training and field attachment programme shall be as under:

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<tr>
<th>S. No</th>
<th>Topic</th>
<th>Duration in week(s)</th>
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<tr>
<td>1</td>
<td>Phase-I Classroom Training at NTIPRIT (19 weeks)</td>
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<td>1.1</td>
<td>Administration &amp; Establishment Rules Module</td>
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<td>NGN Module</td>
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<td>2</td>
<td>Field Attachment (9 Weeks)</td>
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<td>2.3</td>
<td>Field Attachment with DoT</td>
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<tr>
<td>3</td>
<td>Phase-II Classroom Training (2 Weeks)</td>
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<tr>
<td>3.1</td>
<td>Experience Sharing Module</td>
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<td></td>
<td><strong>Total duration (in weeks)</strong></td>
<td><strong>30</strong></td>
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The individual course details and contents are covered in the subsequent sections.

**Note:** The sequence of conduction of individual training modules shall be decided by NTIPRIT, and may not be conducted in the sequence given above.
Course objectives and contents of various trainings and field attachment modules

1. PHASE-I CLASSROOM TRAINING (19 WEEKS)

1.1 ADMINISTRATION & ESTABLISHMENT RULES (2 WEEKS)

LEARNING OBJECTIVE


COURSE CONTENTS

OPERATIONAL

- Organisational structure of DoT and its functions
- Administrative Power of officers
- Office Administration
- Office Procedures
- Handling of VIP Cases, Court Cases & RTI cases
- Handling of Parliament questions

MATERIALS

- Material Management
- Procurement & Local Purchase Procedure

FINANCIAL ACCOUNTING

- Work Expenditure and Accounting
- Concept of RE-BE/ Plan & Non-Plan schemes
- Work Estimates

FINANCIAL DELEGATION & PROPRIETY

- Delegation of Financial Powers
- Exercise of Financial Powers-Case Studies
- DDO functions & duties
- Cash Imprest & temporary Advance Rules

FINANCE ADVICE FOR PROCUREMENT

- Introduction to GFR
- Tender Evaluation
- Audit: Duties and Responsibilities

ESTABLISHMENT RULES

- General rules and regulations
- CCS (CCA) Rules, 1965, CCS (Conduct) Rules 1964
- Staff establishment, Appointment and Training
• Gender Issues & Reservation Rules
• Overview of responsibilities of JTOs
• Office Inspections
• Fundamental Rules, Supplementary Rules
• Annual Performance Appraisal
• Leave Rules
• Terminal Benefits
• Medical Rules
• Income Tax

1.2 SWITCHING MODULE  (1 WEEK)

LEARNING OBJECTIVE

To understand the basic concepts of Switching and Public Switched Telephone Network.

COURSE CONTENTS

• PCM principles and Speech Signal Processing
• Basic concepts of Circuit Switching
• PSTN: Network overview
• PSTN: Outdoor Network Elements (MDF, Cables, Cabinets, Pillars, DPs, etc)
• National Numbering Plan
• Basic of Signalling Concept (CCS#7)
• Traffic Engineering & reports: Erlang, BHCA, CCR, GoS etc.
• NT Switches-EWSD
• Intelligent Network (IN) & Signalling Network (SSTP)
• Introduction to PSTN telecom services
• Field Visit to PSTN Telephone Exchange

1.3 TELECOM INFRASTRUCTURE MODULE  (1 WEEK)

LEARNING OBJECTIVE

To learn the basic knowledge of Power Supply arrangements and associated electrical installations required for a telecom network. To understand the construction and maintenance aspects of telecom buildings and to know the guidelines and requirements of Green Telecom.

COURSE CONTENTS

Power supply arrangements for Telecom Systems:
• Power plant systems - Conventional and SMPS
• Indoor / Outdoor Power plants in Wireless networks
• Storage batteries and VRLA Battery
• UPS and Inverters

Electrical installations:
• General Introduction to electrical infrastructure in Telecom Exchange
buildings (E/A, Lighting, Lifts, Electrical installations etc)
- Air conditioning -requirements and different systems
- Earthing Types and Methodologies and Lightning Protection
- Fire detection and Fire-fighting, fire drill/demo
- BEE Standards for Electrical Installations, Energy conservation and Energy auditing

Green technologies
- TRAI guidelines, Alternative energy sources etc.

Civil Construction and Maintenance aspects in Telecom buildings:
- Telecom buildings- types of buildings- Norms
- Civil infrastructure in Telephone Exchange buildings
- Towers- G/T, RTT, RTP, Wall Mounted etc.
- Smart buildings – concepts
- Water conservation and water harvesting
- Visit to a tower site

1.4 TRANSMISSION TECHNOLOGIES MODULE (2 WEEKS)

LEARNING OBJECTIVE

The primary learning objective of the module is to expose the participants to basics of transmission technologies being used for telecommunication network. This also gives a foundational background required for advanced training courses on Transmission. The module also gives an opportunity to the trainees to have basic understanding of both Optical Communication and Radio & Satellite Communication.

COURSE CONTENTS

(i) OPTICAL COMMUNICATION (1 WEEK)
- Overview of Transmission Technologies and Optical Fibre Communication
- Optical Fibre System- characterisation and design
- Concept of Plesiochronous Digital Hierarchy (PDH) Multiplexing
- Optical Fibre cable laying Practices & Instructions
- Synchronous Digital Hierarchy (SDH) Overview
- Multiplexing in SDH
- Synchronization Planning, Approach & Guidelines
- Introduction to Next Generation SDH
- Introduction to Dense Wavelength Division Multiplexing (DWDM)
- DWDM Components
- OF Cable Lab session
- SDH/ NG-SDH Lab session
- Introduction to FTTH and PON Technologies
- Introduction to submarine cable systems
- FTTH Lab session
- DWDM (2.5Gbps /10 Gbps) Lab session
• Overview of MSPP & RPR
• Introduction to National Optical Fibre Network (NOFN)

(ii) RADIO & SATELLITE COMMUNICATION (1 WEEK)
• Overview of Radio Communications and microwave system configuration
• Frequency Plans for Micro-Wave
• ITU, ITU-R and Radio Regulations
• Overview of 6, 7, 13 GHz Systems
• Microwave antennas and wave-guides, and Installation guidelines
• Link Engineering concepts, Link designing and performance objectives
• Access Links for BTS sites
• EMF Radiation & SAR
• SACFA Clearance
• Overview of Satellite Communications
• Equipment configuration of a satellite Earth station
• High power Amplifier & RF Multiplexer, Principles of LNA
• Earth station Antennas
• Satellite Link Engineering
• Space segment feature of INSAT-III, Meteorological services of INSAT
• Satellite Applications-overview of VSAT, IDR, DCME, DSPT
• GMPCS-Satellite based Mobile Communication

1.5 DATA COMMUNICATIONS MODULE (3 Weeks)

LEARNING OBJECTIVE

To understand the basic concepts of Data Communications, Data Network and functioning of associated Protocols.

COURSE CONTENTS
• Introduction to Data Communications: Basic concepts, Elements of data communication systems, Terminology used in data comm.
• OSI Layer model: Concept of having layered communication, function of each layer.
• Standardization, concept, meaning and importance.
• Standardisation bodies for Internet standards: IETF, IANA, ICANN, IRINN etc.
• Concept of RFC, process of development of RFC, types of RFC.
• Understanding Network & Networking Technologies: Networking concepts, topology & components used in a typical network.
• Error detection and correction methods: Understanding errors, causes, methods of detection and corrections.
• Understanding different layers in details.
• TCP/UDP/IP: Understanding layer 4th and layer 3rd protocols, header structure, functioning of protocol, uses of protocols in networking.
• Network layer addressing: Knowing IP Addressing structure of IPv4 and IPv6 addressing, applications and features of IPv6, Transition mechanism, Govt. of India's plan, study of roadmap for IPv6.
• Tutorials on IPv4 and IPv6.
• Layer 2 and Layer 3 protocols: ARP, RARP, ICMP and IGMP, protocols and there header structure and working.
• Application layer protocol.
• DNS: Learning naming structure, methodology, working of DNS.
• DHCP: Concept, working and importance of DHCP in ISP network.
• Details of FTP, TFTP, HTTP, E-mail, SMTP: Study of header structure, working and application of these protocols.
• Understanding Access Control list
• Routing Principles and Router Architectures.
• Introduction to RIP, OSPF & BGP.
• Broadband Network: Components of broadband.
• LDP (Label Distribution Protocol), concept and working of MPLS and MPLS-VPN.
• Study of broadband policy.
• Study of understanding NIB.

1.6 'IT TOOLS FOR OFFICE' MODULE (1 WEEK)

LEARNING OBJECTIVE

To learn the usage of IT Tools required for office working.

COURSE CONTENTS

• MS Word
• MS Power Point
• MS Excel-I
• MS Excel-II
• MS Excel-III
• MS Access
• SQL
• Overview of Linux
• Utility Software and PC Maintenance

1.7 MOBILE COMMUNICATIONS MODULE (6 WEEKS)

GSM, CDMA and UMTS

LEARNING OBJECTIVE

To understand the basic of:
• Cellular Mobile Communications (CDMA, GSM & 3G)
• GSM, CDMA and 3G Architecture
• Signalling and call processing
• Description of MSC
• Operation & maintenance of various sub-systems
• Traffic and service measurements.
• Radio resource management.
• Configuration, operation & maintenance.
• Mobile Number Portability
COURSE CONTENTS

GSM

- GSM/GPRS Network Architecture
- Circuit Switched Core Network of GSM: MSC, HLR, EIR etc.
- Packet Switched Core Network of GSM: SGSN, GGSN etc.
- Mobile Number Portability
- Radio Network of GSM: BSC, BTS, OMC-R etc.
- Planning, engineering, designing principles of GSM RF Network
- Antenna systems, In-building solution etc.
- Advancements in GSM Technology: Evolved EDGE, VAMOS, Abis over IP, disaster Recovery for HLR, IN
- SIM: Comp-128, H/w, File structure, Applications, ME-SIM Interface, PKI related aspects
- Coverage testing for Roll out Obligation
- Drive Test tools, Planning tools, Post Processing tools
- Billing Support System: CDR generation & Collection nodes, CDR Processing & Analysis
- Operation Support System: Traffic report Analysis
- IMEI and related issues
- Spectrum earmarked for GSM.

Topics such as technology concepts, different channels/protocols, RF engineering/link budget/optimization, mobile forensic, numbering schemes, national roaming, international roaming, cloning, etc. with reference to GSM technologies will be covered as part of above topics.

CDMA Technologies

(CDMA family of technologies- CDMA2000 1x, CDMA 2000 EVDO etc.)

- CDMA Network Architecture
- Circuit Switched Core Network of CDMA: MSC, HLR etc.
- Packet Switched Core Network of CDMA: PDSN, Home Agent, Foreign Agent
- Radio Network of CDMA: BSC, BTS, Coverage, OMC-R
- Planning, engineering, designing principles of CDMA RF Network
- Applications/ Value Added Services in CDMA: SMSC, IN, LBS, LBA, MMSC, CRBT, PTT, OTAP
- CSIM: Security Algorithm, Applications, H/w etc.
- Evolution of CDMA: EVDO etc.
- Spectrum earmarked for CDMA.

Topics such as technology concepts, different channels/protocols, RF engineering/link budget/optimization, numbering schemes, national roaming, international roaming, cloning, etc. with reference to CDMA technologies will be covered as part of above topics.
UMTS

- UMTS Network Architecture
- Circuit Switched Core Network of UMTS: MSC-S, Media Gateway, HSS, MSC-Server, IMS etc.
- Fixed Mobile Convergence
- Packet Switched Core Network of UMTS: 3G SGSN, GGSN
- Radio Network of UMTS- RAN, Node-B, RNC
- UMTS-HSPA, evolved HSPA, VoIP over HSPA
- RF Network planning, designing, engineering, optimization principles
- UMTS Security: Security algorithms, Authentication, Encryption, UICC, USAT, USIM, ISIM
- Mobile Numbering Portability Process
- Coverage testing for Roll out Obligation
- Drive Test tools, Planning tools, Post Processing tools
- Billing Support System: CDR generation nodes, CDR Analysis
- Operation Support System: Traffic report Analysis
- Spectrum earmarked for UMTS

Topics such as technology concepts, different channels/protocols, RF engineering/link budget/optimization, numbering schemes, national roaming, international roaming, cloning, etc. with reference to UMTS technology will be covered as part of above topics.

LTE & WLAN Technologies

- LTE Network Architecture
- Core Network of LTE: SAE/ EPC, MME, Serving Gateway, PDN Gateway, PCRF, IMS etc.
- Radio Network of LTE: E-UTRAN, eNodeB, Air Interface, Relays, Inter-RAT working etc.
- Self Organized Network
- Lawful Interception in Mobile Networks
- Coverage testing for Roll out Obligation
- Drive Test tools, Planning tools, Post Processing tools
- Spectrum earmarked for LTE.
- Overview of WLAN technologies (Wi-Fi)

Topics such as technology concepts, different channels/protocols, RF engineering/link budget/optimization, numbering schemes, national roaming, international roaming etc. with reference to LTE technology will be covered as part of above topics.

LAWFUL INTERCEPTION AND MONITORING

Objective of this module is to impart in-depth knowledge about rules, policies and technological aspects of lawful interception & monitoring which are of concern in the context of national security.

- Licensing provisions
- TEC GRs on LIM & LIS for mobile, Fixed, ISP, IPLC, ILD
- Centralized Monitoring System
- Concept of LEAs and coordination mechanism
1.8 DoT FUNCTIONS MODULE (2 WEEKS)

LEARNING OBJECTIVE

To understand the telecom policies, Indian Telegraph Act and the functioning of each unit of DoT viz. Licensing Cell, TERM Cell, TEC, USOF, TRAI, TDSAT, Wireless Planning & Coordination (WPC) wing, WMO, Finance Unit and PSUs of DoT.

COURSE CONTENTS

- Indian Telegraph Act & National Telecom Policy
- Licensing Functions & Role of DoT
- Functions of Access Services (AS) Cell
- Functions of Carrier Services (CS) Cell
- Functions of Data Services (DS) Cell
- Internet License, AGR Issue and Violation cases
- Access Service – Roll out Obligation
- Functions of Network & Technology (NT) Cell
- Functions of Security Wing & Provision of LIM
- Overview of CMS & Role of TERM Cells
- Overview of Wireless Planning & Coordination (WPC) Wing
- Role of Wireless Monitoring Organization (WMO)
- TRAI Act & Functions of TRAI
- Functions of TDSAT
- Landmark Judgments of TDSAT
- Overview of TEC Functions & its Organization Structure
- Overview of USOF & NOFN
- Overview of USOF & NOFN
- Functions of IR/PG/PHP/Electrical/IC Wing
- Overview of Important Regulations issued by TRAI
- GR/IR/SR/TSTP Development Process
- Equipment Certification & Testing at TEC
- Overview of NOCC
- Role and Function of TERM Cell
- OSP Registration and Monitoring by TERM Cell
- OSP Registration and Monitoring by TERM Cell
- Network Rollout Testing by TERM Cells
- Violation Cases – Detection and Investigation by TERM Cells
- CAF Verification by TERM Cells
- EMR Testing by TERM Cells
- Inspection & Security Audit by TERM Cell
- Overview of DoT Finance Functions & CCAs
- Functions of Licensing Finance (LF) Cell of DoT
- Overview of PSUs under DoT

1.9 NEXT GENERATION NETWORKS (1 week)

- NGN Overview
- NGN Architecture
• NGN Elements
• NGN Protocols: SIP, Megaco/H.248, Sigtran, RTP/RTCP etc.
• NGN Switches: Class-4 & Class-5
• Interconnect and migration issues in NGN
• NGN deployment in BSNL
• NGN: Call Flow
• NGN Lab visit

2. FIELD ATTACHMENT (9 WEEKS)

The JTO Trainees shall be attached for 9 weeks to TERM Cells, Telecom Engineering Centre (TEC) and DoT Headquarters as outlined below, for a structured first-hand exposure of various activities of these divisions under the guidance of officers working there.

2.1 Field Attachment with TERM Cell : 5 Weeks
2.2 Field Attachment with TEC, New Delhi : 2 Weeks
2.3 Field Attachment with DoT HQ, New Delhi : 2 Weeks

3. PHASE-II CLASSROOM TRAINING (2 WEEKS)

LEARNING OBJECTIVE

To learn the project management practices, personality development and best practices in telecom network management. The trainees shall also learn the presentation skills and present their reports.

COURSE CONTENTS
• Presentation Skills
• Project Management-An overview
• Project Planning – PERT & CPM
• Organizational Behaviour
• Material Planning
• Citizen-centric Telecom networks
• Workplace Communication
• Costing & Pricing in Telecom
• Personality Development
• Ethics in Governance & Disaster Management
• Leadership & Motivation
• Green Telecom: Govt. initiatives
• Best Practices in Telecom Networks Management
• Enterprise Resource Planning
• Finance concepts & Financial Analysis
• Basics of Managerial Economics
• Performance Management Systems
• Preparatory Time for Presentation/ Reports
• Presentations by Trainees (Experience Sharing)

Evaluation Criteria for the Experience Sharing Presentation & Report:

1. Each JTO probationer shall give his individual presentation and also submit report, as experience sharing from field attachment.

2. A panel of two Faculty members shall evaluate the presentations & report, and shall ask questions to the JTO (P)

3. In each half, there would be 3/4 presentations (approx 30 mins for presentation + 30 min for report evaluations and Q&A per JTO(P))

4. Evaluation Marking would be as under:

(a) Report - 10 Marks
(b) Presentation - 30 Marks
(c) Q&A - 10 Marks

Total - 50 Marks by each member in the panel.

Maximum Marks by the panel = 50 x 2 = 100 for each JTO Trainee.
A. EXPECTATIONS FROM TRAINEES- CODE OF CONDUCT

1. Etiquette and Behaviour (Shishtachar): Good manners and etiquette lend confidence and charm to an officer’s personality. The Trainees are expected to maintain the highest standards of behaviour and decorum, befitting an officer - both inside and outside the Institute. It is expected of the Trainees to be courteous, polite and well-mannered towards each other, with faculty and with the institute and hostel staff. The same standard of behaviour and decorum is expected from the Trainees when they go to other Institutions/Offices for training or visits. Trainees must ensure that their behaviour and conduct towards Trainees of opposite sex is beyond reproach. The Trainees are advised to go through the Shishtachar booklet (enclosed as Appendix), which contains exhaustive guidelines on etiquette, protocol and manners during official and semi-official occasions, compiled for guidance and ready reference of the Junior Telecom Officer Trainees.

2. Punctuality: Punctuality on each occasion is a sine-qua-non for discipline. It is expected that the Trainees will reach the venue of any scheduled event, at the classroom or otherwise, five minutes ahead of time and will be seated in their allotted place-position at least five minutes before the event. This is the first expectation from Trainees and they should ensure that there will not be any occasion to remind it during the course.

3. Conduct: All officers in Govt. service are bound by a code of conduct and norms of behaviour. The Trainees are advised to familiarise themselves of the CCS (Conduct) Rules, 1964 at the earliest and follow the code of conduct and the norms of behaviour in letter and spirit.

4. Attire: The Trainees are expected to be appropriately attired for every occasion. The details about what constitutes proper attire are given in the Shishtachar booklet (enclosed as Appendix). The Trainees are advised to follow the appropriate norms of attire in the Institute as well as Hostels. Inappropriate or shabby attire during classroom sessions shall be viewed seriously.

5. Participation: It is expected that the Trainees participate fully in all the activities that make-up the Training Programme. The Trainees shall demonstrate their youthful and praiseworthy creativity in all their endeavours. During participation in classroom discussions, the Trainees are expected to be polite and considerate to all others present.

6. Maturity: Above all the Trainees are expected to behave like mature individuals. Mature persons have a balanced frame of mind at all times be it their workplace or personal space. They prove to be an asset to any organisation.

B. INSTRUCTIONS

1. Use of mobile phones/tablets etc. during classroom sessions is strictly prohibited.

2. Trainees are expected to take their own notes in the classes. Some supplementary/background reading materials may be circulated for some of the lectures.
3. Questions may be asked to clarify doubts. However, in case of difference of opinion, lengthy argument with the speaker is to be avoided. On such occasions, the point may be separately discussed with the speaker after the class.

4. The Trainees shall ensure that there is no noisy behaviour during the assembly or dispersal of classroom sessions, or during tea-breaks. No disturbance or inconvenience should be caused to other offices or classrooms in the institute.

5. **Participation in extra-curricular activities and organisation of events:**
   
a. It is mandatory for all the Trainees to regularly participate in Jogging at the scheduled time and place.

b. In addition, they are also required to participate either in PT or Yoga in the morning at the scheduled time. All these activities will be conducted under the supervision of instructors.

c. For Jogging/PT/Yoga, proper clothing needs to be arranged by the Trainees. The male Trainees should wear white T-shirt with white track pants/shorts, or a white track suit and white canvas/sports shoes with socks. Female Trainees should wear white salwar-kurta, or white T-shirt with white track pants, or a white track suit and white canvas/sports shoes with socks.

d. In addition to PT, Yoga and Jogging, the Trainees are required to take part in other games like Tennis, Table Tennis, Badminton, Carom, Cricket, Basketball etc., for which facilities exist in the Campus. Instructors/coaches will be available for the sports activities.

e. Sports Tournaments: The Trainees shall be required to organise tournaments of sports like Cricket, Badminton, Table Tennis, Carom tournaments etc. and Athletic events, with participation by all Trainees in individual or team events.

f. Cultural Programmes: The Trainees shall be required to organise Cultural Programmes consisting of solo and group performances, skits, plays etc., ensuring participation by all the Trainees in the programmes.

g. The participation in all these activities and events shall form part of the assessment and evaluation.

6. **Leave**

a. No leave will normally be granted during the courses, except in the most compelling circumstances.

b. In case leave is granted, then before proceeding on leave the written approval of the ADG in-charge must be obtained. Any absence without permission would be treated as ‘unauthorised absence from duty’ and will be dealt with as per disciplinary rules.

c. Wilful absence from duty after expiry of sanctioned leave period renders a Govt. servant liable for disciplinary action. If any Trainee overstays beyond the sanctioned period of leave, the entire period of absence will be treated as unauthorised and probation period may also be extended.
d. If a Trainee is unable to attend the course on medical grounds, he/she shall obtain a certificate from the Medical Officer from a Government Hospital and only thereafter he/she shall apply for leave.

e. Trainees who are granted leave shall take specific permission for leaving the station. Even during weekends and holidays, station leave permission shall invariably be obtained from the ADG/Officer in-charge, duly furnishing their leave address and contact number. Station leave permission during weekends can be denied by the ADG in-charge, in case assignments or self-study topics are given to the Trainees during a training module.

C. ASSESSMENT AND EVALUATION

The Institute has a well-laid out methodology for assessment and evaluation of the Trainees during the probation period. The approach of the Institute in this regard is elaborated below:

i. The evaluation and assessment of the Trainees should be exhaustive.

ii. Each individual training module will have tests, for which the Trainees will be awarded marks. It would be necessary for every JTO Trainee to pass these tests as per the qualifying criteria of 60% marks. The qualifying criteria have been elaborated in para-f below.

The following methodology will be adopted for assessment & evaluation of the Trainees:

a. Each individual classroom training module will have a written test or a lab-based test for 40 marks per week, e.g. a two-week duration training module may have one or more than one test of total 80 marks.

b. The Phase–II classroom training will not be having any test. However, 'Experience Sharing Presentation' work shall be of 100 marks.

c. The Field Attachment of TERM Cells of 5 weeks duration shall be assigned 100 marks and it shall be based on the performance of the Trainee during Field Attachment as assessed by the respective controlling officer i.e. the concerned Head of division or unit. The controlling officer shall provide the assessed marks to NTIPRIT.

d. Assessment by Training Cell: During the Training Programme, the Trainees shall also be assessed on a continuous basis, based on their participation & performance in group-activities, presentations, sports & cultural activities and general behaviour, attendance, punctuality, discipline & personal conduct. This assessment shall be out of total 40 marks, which will be awarded by the Director (Training), NTIPRIT.

e. Total marks at NTIPRIT: The overall marking on the basis of Paras- a to d will constitute a total of 1000 marks, as given in Table-1:

19
### Table-1: Constitution of Total marks at NTIPRIT

<table>
<thead>
<tr>
<th>S. No</th>
<th>Assessment Heads</th>
<th>Duration in week(s)</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phase-I Classroom Training at NTIPRIT (19 weeks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Administration &amp; Establishment Rules Module</td>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>1.2</td>
<td>Switching Module</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>1.3</td>
<td>Telecom Infrastructure Module</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>1.4</td>
<td>Transmission Technologies Module</td>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>1.5</td>
<td>Data Communications Module</td>
<td>3</td>
<td>120</td>
</tr>
<tr>
<td>1.6</td>
<td>'IT Tools in Office' Module</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>1.7</td>
<td>Mobile Communication Module</td>
<td>6</td>
<td>240</td>
</tr>
<tr>
<td>1.8</td>
<td>DoT Functions Module</td>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>1.9</td>
<td>NGN Module</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Field Attachment (9 Weeks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Field Attachment with TERM Cell</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>2.2</td>
<td>Field Attachment with TEC</td>
<td>2</td>
<td>NA</td>
</tr>
<tr>
<td>2.3</td>
<td>Field Attachment with DoT</td>
<td>2</td>
<td>NA</td>
</tr>
<tr>
<td>3</td>
<td>Phase-II Classroom Training at NTIPRIT (to share field experience) (2 Weeks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Experience Sharing Module</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Assessment by Training Cell</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Total Marks</td>
<td></td>
<td>1000</td>
</tr>
</tbody>
</table>

**f. Qualifying Criteria:**

**i.** It will be necessary for every Junior Telecom Officer Trainee to secure at least 60% marks in each test to successfully complete the concerned module. In case the Trainee fails to secure 60% marks in any test, or fails to appear in the test, he/she will be given an opportunity to appear in a re-test. The Trainee shall have to qualify the re-test (with 60% marks) and this will be treated as a second attempt-supplementary test, but he/she will be awarded the qualifying marks (60%) only, for the purpose of arriving at the total marks obtained during probation period. If the Trainee fails to qualify in the re-test also, then he/she will have to repeat the concerned module, and his/her probation period will be extended to that extent.

**ii.** The qualifying criteria of securing at least 60% marks shall also be applicable to the marks obtained in other training modules which do not include tests, including Field Attachment, Experience Sharing Presentation Work, Assessment by Training Cell etc.
as listed in Para-c above. In case the Trainee fails to qualify in any of the aforesaid modules, the probation period shall be extended, as decided by the Competent Authority.

iii. **Attendance:** Every Trainee will have to maintain a minimum attendance of 60% in each course/module during the training programme. This attendance criterion shall also be applicable in those cases where he/she has been sanctioned any leave, including any leave sanctioned on medical grounds. If the attendance of any Trainee falls short of this criterion, he/she may not be permitted to appear in the tests, and he/she will have to repeat the concerned module. In such a case, his/her probation period will be extended by the duration of the repeated modules. No request for relaxation of this criterion will be entertained.

D. **ASSESSMENT BY TRAINEES**

An evaluation questionnaire will be given to the Trainees at the end of the individual courses to obtain their comments about the various aspect of the course. Informal discussions will also be held with the Trainees during the course to obtain feedback from them. Feedback given by the Trainees will be used for improving future courses. Feedback can be useful only if it is made objectively. All comments made by Trainees must be polite.

E. **STAY IN THE HOSTEL**

Stay in the campus is compulsory for the Trainees. Permission to stay outside will be accorded only under the most compelling circumstances. Families and guests are not allowed to stay in the hostels. No visitors will be allowed after 10 P.M.

Trainees are expected to return to the hostel before 10 P.M. The hostel warden should be informed in advance if a Trainee intends to come later than 10 P.M.

The hostel has fully equipped mess and it is compulsory to join the same. A mess committee may be appointed to supervise and suggest the improvement in the arrangements of mess.

No intoxicating drinks and drugs are allowed in the hostel. Action will be taken under Conduct Rules if any JTO Trainee is found consuming liquor or in an inebriated state.

Cultural Programs are arranged in the C. K. Reddi Hall. Special Programmes are arranged on National Festivals. Attending the Flag Hoisting Ceremonies on National Festivals is compulsory for all Trainees.

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