Training Cell,
O/o GM(Trg), 1st Floor, Bharat Sanchar Bhavan, Janpath, New Delhi-110001
Tel: 23710385, Fax: 23711544

भारत संचार निगम लिमिटेड
(भारत सरकार का उपक्रम)
BHARAT SANCHAR NIGAM LIMITED
(A Govt. of India Enterprise)

No.16-1/2012-Trg Dated: 24.01.2013

To

The Chief General Managers,
Territorial circles

Subject: Launch of BSNL Online Certificate Programmes **– regarding release of advertisements in the national dailies & publicity through SMS**

This is in continuation of this office letter of even number dated 09.11.2012 wherein it was conveyed the proposal of launching of BSNL Online Certificate Programme from our training centres and field units. Broad guidelines in this regard were also sent along with the letter, for the information and reference of all concerned. .

We are pleased to inform that the project has now come to the stage of formal launching across the country from our training centres in the **First Phase**. The designated committees constituted for this project have completed their task including the following activities.

- The designated portal for this program www.learntelecom.bsnl.co.in has been validated
- The course contents for all the seven programmes have been completed and uploaded on the portal

This program is scheduled to be launched in the third week of February 2013 with the first batch commencing from 25th February 2013. The list of training centres which would launch these programmes during the current first phase is given in Annexure-I and the details of the seven certificate courses is given in Annexure-II.

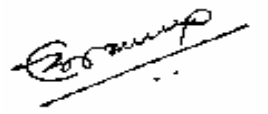
With regard to marketing and publicity activities for giving a wide publicity of these programmes, the following support shall be required from circle administration:

1. SMS can be broadcast from field units to all their customers. A draft SMS framed by ALTTC is given in the Annexure-III.
2. Advertisements in local newspapers may be made, as deemed fit. The creative for such advertisement has been designed by ALTTC and is given in Annexure-IV.
3. Campus visits to the targeted institutions by the circle administration would perhaps be very appropriate.

Cond…next page

It may be appreciated that vocational training offered by BSNL to engineering students has become quite visible and successful resulting into generation of considerable revenue by the training centres as well as field units. As the primary target group for this new initiative remains the engineering students, this can easily ride upon the already generated visibility and marketing in this segment. We are confident that active participation by the field units in marketing the online certificate programmes shall result in making these programmes also a significant and successful revenue stream in the near future.

Therefore, circle administrations are requested to extend all possible support to make this effort a grand success in association with their respective training centres. The guidance, support and encouragement from ALTTC, Ghaziabad and BRBRAITT, Jabalpur would be a key element in the overall delivery of these new Learning Products from BSNL.



(Neeraj Verma)
GM (Trg)

Copy to:

1. CGMs, ALTTC/BRBRAITT
2. Principals of all RTTCs

ANNEXURE-I

Ttraining centres

1	ALTTC GHAZIABAD
2	BRBRAITT JABALPUR
3	ARTTC RANCHI
4	RGM TTC CHENNAI
5	NSCBTTC KALYANI
6	RTTC AHMEDABAD
7	RTTC BHUBANESHWAR
8	RTTC CHENNAI
9	RTTC GUWAHATI
10	RTTC HYDERABAD
11	RTTC JAIPUR
12	RTTC LUCKNOW
13	RTTC MYSORE
14	RTTC NAGPUR
15	RTTC PUNE
16	RTTC RAJPURA
17	RTTC TRIVANDRUM

ANNEXURE-II

Certificate Course 1- Digital Switching System

Learning Objective:	**To give the students a practical hands-on overview of the electronic switching systems/equipments that are the nodal points of all telecom networks.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands on practice on various components of a digital exchange, create and modify customer and exchange data, carry out testing and trouble-shooting and understand the routing, traffic, trunk and billing administration and management.**

S. No	Curriculum	SKILL HOURS	EQUIPMENT
1.	Identification of various components of telephone exchange like MDF , FDF ,DDF, Power Plant and identification of functional blocks of Digital exchanges	2	• C-DOT MAX or any New Technology Switch • EPABX • Line tester • VoIP Facility • MDF, DDF, FDF • Power plant • ISDN Feature phone Telephone connection with handset • Types of cables (power, switch board, PCM. LAN) • Different types of connectors (Euro, D, RJ) • FAX • Pillar, cabinet, DP • Lab/exchange with two lines created • VCC card • Telephone line to make VCC/FPH call • Loop back trunks to test the calls
2.	CPE and MDF (Analog telephone ,Digital telephone, FAX, Answering machine, Cordless phone, Identification of different types of cables Main Distribution Frame, cabinet pillar, DP) Different services and their access codes, services provided by switch like auto alarm, diversion, call waiting , CLIP,CLIR, and services provided by common platform like VCC,FPH, Making line to line calls and checking the metering	2	
3.	Creation of Subscriber Physical Connectivity from customer premises up to equipment . Interrogation of subscriber characteristics by means of MMC In case of ISDN line NT, TA etc	2	
4.	Deletion and modification of customer data in data base and checking their effect like BNP Annc and BNP disconnection , reconnection safe custody etc	2	
5.	To register and verify various facilities by means of MMC Call diversion, call waiting, Conferencing,	2	
6.	Hunt group and centrex (creation of hunt groups and centrex groups	2	
7.	Testing the subscriber line (wedging the line at MDF, Testing the line by means of MMC, fault localistion from the test reports	2	
8.	Different types of observations like outgoing , incoming , malicious etc. Different types of traffic reports and CDR details.	2	
9.	Digital Trunk and Routing Management (The parameters related to trunk and routes by taking display of TGPs and routes, Testing of trunks)	2	
10.	Hierarchy of nodes in PSTN, ISD, and long distance calls, Special service calls. etc	2	
Total 10 sessions each of 2 Hrs		**20 Hrs**	

Certificate Course-2 - Digital Transmission Technology

Learning Objective:	**To give the students a practical hands-on overview of the Digital Transmission technology/equipments that is the backbone of all telecom networks.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands-on practice on the various transmission media, system components, transmission systems, SDH equipment, microwave systems, DWDM and FTTH systems.**

Session No.	Curriculum	SKILL HOURS	EQUIPMENT
1.	***Visit and demo on different transmission media*** *like- MDF, DDF, Copper cable, CAT-5/6, OFC, RF Cable, Antenna etc.*	2	• STM-1 /STM-4 equipped with important cards • LCT /NMS for SDH Different M/W Systems • Satellite System • Mini-Links • DWDM (OTM, OLA) with LCT • DXC • Different types of Splitters • Different types of ONT's • GPON/GEPON OLTE • MDF,DDF • FDF/FDMS • CAT-5/ CAT-6 • Cables/ Copper Cables • OF Cable/ RF Cables • Different types of Antenna • Different types of Optical Connectors • PDH System • Multimedia of SDH (to be provided by BRBRAITT)
2.	***Visit to Mux room and different transmission system*** *– like PCM, PDH, ADM, TM etc.*	2	
3.	***Identification of connectors and components of Optical Transmission Systems*** *like – SFPs, Optical Connectors like FC-PC, SC-PC, LC-FC, Pigtail and patch cord, LASER, FDF, TJC etc*	2	
4.	***Multimedia of SDH*** *& visit*	2	
5.	***Network & Hardware Architecture of SDH Equipment****- Identification of different Network Element, Ring Architecture, Identification of different cards and their purpose etc.*	2	
6.	**Software configuration in SDH**- Cross connection using LCT/ NMS/ EMS	2	
7.	***Software configuration in SDH****- Alarm Management, Performance management, Synchronization*	2	
8.	***Visit and demo to Microwave*** *Mini link /Microwave System/ Ku Band VSAT System**	2	
9.	***Visit and demo to DWDM System****	2	
10.	***Visit and demo to FTTH System***	2	
	TOTAL SESSIONS	20 Hrs.	

* Where ever available

Certificate Course-3 - Optical Fiber Technology

Learning Objective:	**To give the students a practical hands-on overview of Optical Fibre Technology/equipments.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands-on practice on optical fibre systems that shall include cables, connectors, splicing, tools, optical devices, OTDR and other measuring instruments.**

Session	Curriculum	Skill Hrs	Equipment
1.	**Visit and demo of different transmission media** MDF, DDF, Copper cable, CAT-5/6, OFC, RF cable, Antenna etc.	2.0	• MDF, DDF, FDF • CAT-5/CAT-6 Cables/Copper Cables • RF Cables • Different types of OF cable • Different types of Optical connectors • Splice closures • Pig tail & Patch cord, • Different types of OF Tools • OF Cables • Fusion Splicing Machine • OTDR • Fiber Spool • Power Meter • Fixed/ variable Attenuator • Light Source • Different types of Antennas • SDH Systems • DWDM Systems (OTM/ OLA) • Route Index Diagram • Route/Joint Indicators • HDPE/PLLB Duct • Different types of Splitters • Different types of ONT's • GPON/GEPON OLT • OF Systems PDH, • OF Systems SDH
2.	**Different types of Optical Fiber Cable** Identification of different types of OF Cable,Component of Loose Buffer Tube &Tight Buffer Tube Cable and their functions, Identification of different types of Connectors.	2.0	
3.	**Identification of different OFC Tools & Splice closures** Different tools and their utility- Cable sheath remover, Buffer Stripper, Fiber Stripper, Fiber Cleaver etc. Different types of Joint Closure- TJC, BJC, SJC etc. Route indicators, RID, ducts and pipes (HDPE & PLLB)	2.0	
4.	**Application of OF Cable & Optical Devices** FDF Indoor connectivity of OF Systems, Transmitter & Receivers, LASER, APD	2.0	
5.	**End Preparation of Cable** Steps for end preparation of Optical Fiber Cable for Splicing and demo in lab	2.0	
6.	***Splicing of OF cable*** Component of Fusion Splicing Machine, Procedure for splicing of OF cable and demo, Splice loss measurement	2.0	
7.	***Demo on OTDR*** Study the different components of OTDR, Setup for operation of OTDR, Fault localization and measurement like fiber break, total loss, splices loss, dead zone etc.	2.0	
8.	***Power Meter & Other Measuring Instruments*** Operation of Power Meter, Power measurement of LASER Study of other meters like attenuator, talk-set, source etc.	2.0	
9.	***Visit and demo to FTTH*** Study the network architecture of FTTH, Identify the different network elements of GPON/GEPON Systems	2.0	
10.	***Visit and demo to SDH / DWDM**** Study the network architecture of SDH / DWDM* system, Identify the different network elements and cards of SDH / DWDM* Systems and study their function.	2.0	

Certificate Course-4 - Mobile Communication

Learning Objective:	**To give the students a practical hands-on overview of the Mobile Communication Systems/equipments.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands-on practice on 2G mobile systems, create and modify customer and exchange data, mobile services, carry out testing and trouble-shooting, mobile antenna systems, GSM radio parameters and optimization of network**

S. N.	Curriculum	Skill Hours	Equipment
1	2G GSM Equipment Demonstration: GSM Architecture diagram-BTS, BSS, MSC, HLR, VLR and their interfaces	2	• GSM/ 3G Test Handset • Demo SIM with VAS services • CCN Node Terminal • HLR Terminal • PC • BTS BSC • visit to MSC • Antenna system with feeder cable • VSWR meter if available • OSS/OMCR terminal Field visit and other infrastructure
2	Saving and dialing procedures for Call/SMS in different scenarios; - while on roaming, while in local service area GSM Network Identities – IMSI, IMEI, MSISDN etc	2	
3	GSM Subscriber Creation.(CCN Node/ In Lab) Creation of subscriber using Kennan FX (or in Lab, if available), Billing CDRs, IN Query	2	
4	Creation of various facilities: Assignment and withdrawal of services to mobile subscriber- STD barring, Call Divert, Call Forwarding, Missed Call Alert etc.	2	
5	Mobile Services – VAS- PRBT, IVR and SMS Based, USSD, STK, Activation, De-activation.	2	
6	Internet Access – GPRS & EDGE. Configuration for access through Mobile and PC, APN Configuration, Downloading settings in Mobile	2	
7	2G BSS: BSC/BTS Configuration, Connectivity, Faults / Alarms etc.	2	
8	Mobile Antenna Systems, Feeder Cables Type of Antenna, Gain, Coverage Identification BTS Testing - Feeder Cable & VSWR.	2	
9	Study and Analysis of GSM Radio Parameters through Engineering Handset- Cell, LAC, Channel, HSN, MAIO	2	
10	Optimization of Network Performance – QOS Parameters, KPIs, Benchmarking	2	
	TOTAL SESSIONS	20 hrs.	

Certificate Course-5 - IP Networking & Cyber Security

Learning Objective:	**To give the students a practical hands-on overview of IP Networking and Cyber Security/equipments.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands-on practice on IP Networking and Cyber Security practices, LAN cabling and configuration, Router configuration, FTP protocol services, various security tools and securing PCs and Servers.**

S. No.	Contents		Equipment
1.	Identification of Network Components, Preparing straight & cross RJ-45 LAN cables	2	• Internet Connectivity • NICs • Cables & connectors • PC, Server and related SW Proxy • FTP • IIS • Firewall • Look at LAN • Packet tracer • Advanced IP Calculator (Freeware) v1.1 • Network Simulator SW • Copy of the video demo files for Cyber Security • UTP, cat5, Cat6, Coax • OFC • Hubs • Repeaters • Switches • Bridges, Routers • Gateways • CSU/DSU • Wireless access points (WAPs) ADSL Modems, Crimping Tool
2.	Preparing & Testing Wired Local Area Network, Configuring IP Addresses in a LAN, Practice on Wireless Local Area Network, VLAN on simulator / Systems	2	
3.	Identify Router Components & Configure Router on simulator / Systems	2	
4.	Excercises on TCP/ IP	2	
5.	Configuration of Proxy, File Transfer Protocol services	2	
6.	Configuration of Dynamic Host Control Protocol services	2	
7.	Multimedia Demo of Viruses, Trojan Horse, Worms	2	
8.	Multimedia Demo of SPAM, Spoofing, Phising, Identity frauds, Social Networking etc	2	
9.	Demonstration on Security tools like IP scanner, Port scanner etc.	2	
10.	Securing Home PC & Web Server – Installing & Updating Antivirus, Antispyware, Hardening of Operating System by turning of unnecessary services, clients & features	2	
Total 10 sessions each of 2 Hrs		**20 Hrs**	

Certificate Course-6 – TELECOM SUPPORT INFRASTRUCTURES

Learning Objective:	**To give the students a practical hands-on overview of Telecom Support Infrastructure.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands-on practice on the maintenance of various power plant equipment and earthling systems, AC units, telecom shelters and towers and engine alternators.**

	Telecom Support Infrastructure- Job Aids		
SN	**Name of the Topic**	**Hrs**	**Equipment**
1	Identification of different components in Telecom support infra FR,SMPS,, Bty charger, battery set , earth plates , high tension and LT supply)	2	• SMPS Power plant • VRLA Battery • Inverter • AC • Voltmeter • Thermometer • Earth tester • Fire Extinguishers • Lightening arrestor • Circuit Breakers • HRC fuses, • Engine Alternator • Package AC • Fire Detector • Fire fighting equipments • Fire detection apparatus
2	SMPS (functional unit identification, various alarms, trouble shooting)	2	
3	VRLA (Measurements, pilot cell, terminal voltage, individual cell voltage)	2	
4	UPS System, Earthing (Measurement of earth resistance., Appearance of earth plates at different points like MDF, switch room)	2	
5	Air conditioning (AC package unit, Split A/C, Window type A/C)	2	
6	Protective systems (Fire extinguishers and their operation Lightening arrestors, Circuit breakers, HRC fuses)	2	
7	Engine Alternator (Demonstration & maintenance tips.)	2	
8	Site visit to Ground Based & Roof Top Tower	2	
9	Site visit to telecom shelter	2	
10	Sub-Station Works in Telephone Exchange and energy conservation features	2	
	TOTAL SESSIONS	20 hrs	

Certificate Course-7 – BROADBAND TECHNOLOGY

Learning Objective:	**To give the students a practical hands-on overview of Broadband Technology Systems.**
Prerequisites:	**First year Engineering or Graduate course in science.**
Skills acquired:	**The students shall be able to understand and obtain hands-on practice on broadband system configuration, modems, CPE devices configuration for internet access and IPTV, LAN, Routers and Broadband Network components such as DSLAM, T1/T2 Switches, BRAS/BNG**

SN	Name of the Topic	Hrs	Equipment
1.	Connecting PC, Phone using splitter at Customer Premises, Parallel Phone & Testing Line Parameters using ADSL Tester		• Broadband connection • Splitters • Telephone Instruments • CPE/ Modem • ADSL line • RJ-11 Cables • PC • ADSL Tester • Wi-Fi Broadband Modem • ADSL CPE , (UTstarcom UT-300R2) • Crimping Tool • DSLAM • IPTV • One Switch • Console cable for accessing the router • Cisco 7613 or any Cisco model • T-I ,T-II Switch • BRAS / BNG • OCLAN for field demo
2.	Configuration of broadband connection a) Always-On/PPPoE/Multi-user mode b) Dial-up/Bridge/Single-user mode	2	
3.	Configuration of broadband Modem	2	
4.	Securing wireless broadband connection & Checking of Speed	2	
5.	Common Broadband Problems, Errors & their troubleshooting	2	
6.	Configuration of CPE for multiple services such as internet access, IPTV	2	
7.	Setup of LAN in home environment	2	
8.	Router Components, Show commands to see running-conf, status of ports, ping	2	
9.	Jumper arrangement at MDF for a) New Customer b) Existing Landline Customer	2	
10.	Broadband Network Components DSLAM, T1/T2 Switches, BRAS/BNG	2	
	TOTAL SESSIONS	20 hrs	

ANNEXURE-III

DRAFT SMS

Golden opportunity for students and working professionals to build career in Telecom & IT industry. Learn while at computer and also gain practical knowledge through rigorous training at 17 locations. Join Online Certificate Courses starting from 25th February 2013 launched by BSNL, the most trusted brand. Visit: www.learntelecom.bsnl.co.in

ANNEXURE-IV


BSNL
Connecting India, Faster
BHARAT SANCHAR NIGAM LIMITED
Launches
Online Certificate Programme
A right click for a Bright Career
www.learntelecom.bsnl.co.in
Most suited for
Student pursuing Engineering, Science, Diploma.
Working professionals.
Faculty of Engineering, Science & Diploma Colleges.
Anybody keen to learn technology
Course Fee
Course fee Rs. 5000/- + Service Tax.
Learn from ANYWHERE with lots of FLEXIBILITY
Enhancing your PRACTICAL KNOWLEDGE & making you JOB READY
Register today & Avail 20% inaugural discount
Country wide launch with 17 Locations in first phase
Register now - First Batch Starting w.e.f. 25 Feb. 2013
For further inquiry: 0120-2728291 / +919412739330
Visit us: www.alttc.bsnl.co.in