



Office of Corporate Relations & Alumni

ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ

PTU PUNJAB
TECHNICAL
UNIVERSITY
Estd. Under Punjab Technical University Act. 1996
(Punjab Act No. 1 of 1997)

Ref. No. IKGPTU/PA/CRA/11

Dated June/06/2019

**Directors/ Principals
All the University Campuses/ Colleges & Institutions
Affiliated to IKG PTU**

Sub: Training programmes by Advanced Level Telecom Training Centre (ALTTC),

Sir/ Madam

Advanced Level Telecom Training Centre (ALTTC), Ghaziabad is the apex training institute of BSNL. ALTTC was set up as a joint venture of International Telecommunication Union, Geneva, UNDP and the Government of India in 1975. ALTTC has over three decades of experience in the field of training in telecommunication.

Advanced Level Telecom Training Centre (ALTTC), Ghaziabad is offering various training programmes for B.Tech, M.Tech (in various disciplines), MCA and BCA courses.

In light of the above you are requested to circulate the information to the concerned students so that maximum students may get benefitted from these courses. (Training schedule along with other relevant details are attached)

For any queries you may call @ +91- 9868855522 & +91- 9412000938.

With profound regards,

**Deputy Director
(Corporate Relations & Alumni)**

"Propelling Punjab to a Prosperous Knowledge Society."



BHARAT SANCHAR NIGAM LIMITED

(A Govt. of India Enterprises)

Advanced Level Telecom Training Centre

(An Apex Training Institute of BSNL & Centre of Excellence for ITU)

Raj Nagar, Ghaziabad (U.P.) - 201002



Industrial Training (Summer/Winter)

For M.Tech/MCA/B.Tech./B.E./BCA/Diploma Students

HIGHLIGHTS OF COURSE CONTENTS :

For ECE / EEE/ EIE :

Telecommunication Technologies & Networks

- Digital Switching System in Telecom NGN.
- Optical Network : PDH, SDH, DWDM, GPON, OTN
- Mobile communication system : GSM, CDMA 3G, RF Concepts 4G, 5G, IOT, SMART CITIES
- IP Networks : TCP/IP, MPLS - VPN, Broadband TECHNOLOGY, IPV4, IPV6.
- Exposure to working of Digital Exchange / Systems / Network.
- Satellite Comm : Basic Concept, GPS System, VSAT, Dish TV, DSNB VAN, Satellite Mobile phones (INMARSAT)

FOR CS / IT :

- Computer Networking
- Cyber Security
- Web Technology with PHP
- Linux Administration
- Oracle
- Embedded System & Robotics
- VLSI with VHDL
- Autocad

FOR ELECTRICAL :

- Air Conditioning : Basics Design Criteria, Factors affecting air conditioning Loads and Latest Trends.
- Power System : Overview Sub Station, Types selection and designing etc.
- Engine Alternator : Overview, selection and Latest installation Practices etc.
- Fire Services & Lifts.
- Energy conservation &
- Renewable Energy.

FOR CIVIL ENGG. :

- Structural Design of Building & Building Services
- Overview of computer Aided Structural Design through STAAD Pro.
- Building Maintenance & Precaution in planning & construction.

PROJECTS FOR CS/ECE/IT

- Project on IP based Telecom Network
- Project on VLSI with VHD

- Project on Web Designing with PHP & My SQL
- Project on Lan with Servers
- Project on Embedded System
- Project on 4G/5G

COURSE FEE :

For 2 weeks (3 Days)

Rs. 3000/- +18% GST = 3540/- (Non Refundable)

For 4 weeks (6 Days)

Rs. 6000/- +18% GST = 7080/- (Non Refundable)

For 6 weeks (9 Days)

Rs. 9000/- + 18% GST = 10620/- (Non-Refundable)

Course fee payment is through

Demand Draft / Cheque in favour of "Accounts Officer (Cash).

BSNL ALTTC, Ghaziabad" Payable at Ghaziabad

Or online Payment A/c No. SBI - 10888625814

IFSC Code : SBIN000642

CLASS DURATION :

For 2 weeks : 6 hrs daily for 3 days followed by Project Report.

For 4 weeks : 6 hrs daily for 6 days followed by Project Report.

For 6 weeks : 6 hrs daily for 9 days followed by Project Report.

Hostel Facility available @ Rs 100/- per day, Food charges extra.

INDUSTRIAL VISIT :

Rs. 200/- +18% GST = Rs. 236/- per student per day.

Document required for Summer Training :

- 2 Photographs (One to be pasted on application form)
- Sponsorship letter from college / Institute Or Copy of Identity Card.

COURSE STARTS IN BATCHES IN FOLLOWING MONTHS:

- For Summer Training - April to August.
- For Winter Training - November to February
- Scheduled Batch dates can be checked on our web site

Address for Communication :

AGM (EB) Room No. 102, Admn Building, BSNL, ALTTC,
Raj Nagar, Ghaziabad-201002

Ph. : 0120-2755356, 2702239, 9868855522, 9412000938,
9412739258, 9868162339

E-mail : ebsectionall@gmail.com

Apply on line : www.alttc.bsnl.co.in

***1/2/3/6 MONTHS PROJECT TRAINING IN MOBILE / OFC / NGN / SATELLITE & NETWORKING ALSO AVAILABLE FOR STUDENTS FOR DETAILS VISIT OUR WEBSITE : <http://www.alttc.bsnl.co.in>**

Sub: Batch Information for Summer Industrial Training 2019 at ALTTC Ghaziabad.

R/Sir/Madam/Dear Students,

We are happy to inform you that ALTTC (Advanced Level Telecom Training Centre), of BSNL (A Govt. of India Enterprise), Ghaziabad is going to conduct Summer Industrial Training Program and Project Training for Students of B.E./B.Tech./Diploma in Engineering and M.C.A. students.

ALTTC encompasses, training capabilities in different streams i.e

1. **Mobile technologies:** GSM, CDMA, 3G, 4G LTE and LTE Advanced and Wi-Max.
2. **Modern Transmission Technologies:** OFC, SDH, NG SDH, DWDM, GPON and FTTH.
3. **Satellite Communication:** Antenna, VSAT, DTH, GPS and optimisation of Power (Link Calculation).
4. **Next Generation Networks:** working of Digital Exchanges, soft Switch and IMS.
5. **IT & Networking:** IPV4, IPV6, LAN, VLAN, Router Configuration, MPLS and Broadband, Cloud Computing.
6. **VLSI with VHDL, Embedded systems , Cyber security , Cyber Forensic , Big – Data & IoT**
7. **Electrical Eng.:** Air Conditioning, Power system, Engine, Alternator, Energy Conservation & Renewable Energy.
8. **Civil Eng.:** Computer Aided Structural Design through STAAD Pro, Building Maintenance & Precaution in Planning & Construction.

Batch detail is given below:

Course Name	Advanced Networking Techniques	CIVIL Engg.	Cyber Security & Networking	Electrical Engg.	Embedded System & Robotics	Telecom Technologies & Networks	VLSI with VHDL	Web Technology	Cyber Forensic
Start date	27-May-19	17-June-19	06-May-19	10-June-19	06-May-19	13-May-19	20-May-19	3-June-19	17-June-19
	17-June-19		13-May-19	24-June-19	03-June-19	27-May-19	24-June-19	17-June-19	
			20-May-19			03-June-19			
			03-June-19			10-June-19			
			10-June-19			17-June-19			
			24-June-19			01-July-19			
			01-July-19						

The students who have opted for training in Embedded System and Robotics & Web Technology & Cyber Forensic are suggested to bring Laptop and the course duration will be 12 days (3 hours/day*12 days=36 hours) For all other courses duration will be 6 days (6 hours/day*6 days=36 hours). For Embedded system & Robotics Kit is to be arranged by the candidate.

We have prepared different Batches according to the data received from students; Number of batches will be increased according to demand of students (minimum number of students per batch is 10); please keep in touch with us via mail.

You are hereby requested to adjust your date of training according to the batches mentioned above. If you are unable to adjust your time slot in such dates then please inform via mail to ebsectionalt@gmail.com

Feel free to contact following officers:

Ph. Office (EB-Section) - 0120-2755356/2702239
Anil Kumar (AGM-EB) - 09868855522
Abhishek Gupta (SDE-EB) - 09412000938

Regards,
Anil Kumar, AGM(EB)
BSNL, ALTTC Ghaziabad



ALTTC
एल्ट सेंटर
**ADVANCED
LEVEL TELECOM
TRAINING CENTRE**
(Govt. of India Enterprise)



BSNL

Connecting India
Faster

Training Brochure

BHARAT SANCHAR NIGAM LIMITED, (A Government of India Enterprises)
O/o the Chief General Manager, Advanced Level Telecom Training Centre, Ghaziabad -201 002
Tel.:0120-2755356/2702239, fax: 0120-2756985, Website: <http://www.alttc.bsnl.co.in>
Registered & Corporate Office: Bharat Sanchar Bhavan, Harish Chandra Mathur Lane, Janpath, New Delhi-110 001

Our Clients...



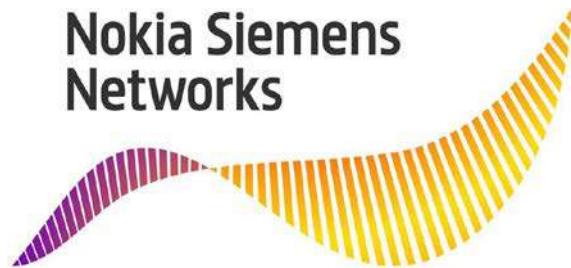
HCL



bharti



Nokia Siemens
Networks



From CGM's Desk,



Technological development globalization and commoditization in telecom have brought inevitable: tough competition in the telecom sector nationally and internationally.

This in turn has spurred vendors and service providers to have a serious re look and review the whole gamut of management to devise strategies to select technology, plan , desire, ROI for excelling in competitive scenario.

Training plays a vital role in keeping the operation competitive.

ALTTC has over three decades of experience in the field of training in telecommunication.


The institute has been catering to the diverse needs of international as well as national tel community.

Here we help you identify areas of concern in your organization where expertise of our center can be leveraged for growth. We at ALTTC to strive to realize our vision, "Deliver Excellence through Training".

M.K. Seth



ABOUT US



- Advanced Level Telecom Training Centre (ALTTC), Ghaziabad is the apex training institute of BSNL. ALTTC was set up as a joint venture of International Telecommunication Union, Geneva, UNDP and the Government of India in 1975.
- ALTTC functions on the frontiers of telecom technology, finance and management and imparts training to the leaders in the business. The strength of ALTTC lies in the state of art labs, massive infrastructure and trained, talented and qualified human resource pool.
- ALTTC has over three decades of experience in the field of training in telecommunication. The institute has been catering to the diverse need of international (Asia Pacific Telecom, International telecommunication Union, Association of Southeast Asian Nations, Nepal Telecom) as well as national tele community.
- ITU have declared ALTTC as the “center of excellence” for Broadband access and NGN in Asia Pacific region for 2015-2018.
- Here we help you identify areas of concern in your organization where expertise of our center can be leveraged for growth. We at ALTTC strive to realize our vision “Deliver Excellence through Training”.

Training Facilities..

ALTTC has excellent facilities for training. The lecture rooms at the ALTTC are equipped with modern teaching aids. Emphasis is given on simulation of conditions existing in the work environment. Hands-on is encouraged on live telecom systems.



ALTTC encompasses training capabilities in different streams i.e.

- 1. Mobile technologies:** GSM, CDMA, 3G, 4G LTE and LTE Advanced and Wi-Max.
- 2. Modern Transmission Technologies:** OFC, SDH, NG SDH, DWDM, GPON and FTTH.
- 3. Satellite Communication:** Antenna, VSAT, DTH, GPS and optimization of Power (Link Calculation).
- 4. Next Generation Networks:** working of Digital Exchanges, soft Switch and IMS.
- 5. IT & Networking:** IPV4, IPV6, LAN, VLAN, Router Configuration, MPLS and Broadband.
- 6.** VLSI with VHDL, Embedded systems and Cyber security.
- 7. Electrical Eng.:** Air Conditioning, Power system, Engine, Alternator, Energy Conservation & Renewable Energy
- 8. Civil Eng.:** Computer Aided Structural Design through STAAD Pro, Building Maintenance & Precaution in Planning & Construction.



Library

ALTTC is equipped with well organized library containing books on telecommunication, computer, management and others. Also having internet facility.

Sports & Leisure

ALTTC is equipped with a variety of In-door and Out-door sports activities-

- Lawn Tennis
- Table Tennis
- Badminton (In-door court) Basket-Ball, TV Room, Books

Hostel Complex

There are three well furnished hostels providing residential facilities to around 400 participants:

- J.C. Bose Hostel
- Bhabha Hostel
- Raman Hostel



Best Training Infrastructure...



TRANSMISSION
LABS- SDH &
DWDM

IMS NGN LABS



MOBILE &
SATELLITE
LABS

IT & DATA
NETWORK
LABS



Photo Gallery



Training Detail: Industrial Training Summer/Winter and Job Oriented Program:

Training Type	Industrial Training 2-Weeks	Industrial Training 4-Weeks	Industrial Training 6-Weeks	Job Oriented Program 4/8-Weeks
Training Hours	18 hours (6 hours per day * 3 days)	36 hours (6 hours per day * 6 days)	54 hours (6 hours per day * 9 days)	120 hours (6 hours per day * 20 days)
Methodology	Theory & Practical (3 days + 1½ Weeks)	Theory & Practical + Project Report Optional (6 days + 3- Weeks)	Theory & Practical + Project Report Optional (9 days + 4½ Weeks)	Theory & Practical + Job Aids + Project Report Optional (20 days + 4-Weeks optional)
Training Months	Batches will be start on every Monday in the months of: In Summer: April, May, June, July, Aug In Winter: October, November, December, January			Batch may start any time as per the requirement of Students, Colleges/institute.
Training Timings	10:00 am to 5:00 pm in working days			
Qualification	M.Tech/M.E./B.Tech/B.E./MCA/M.Sc./M.Phil./B.Sc./B.Sc. Eng./Diploma			
Stream	1. Electronics/ECE/ET/ENT 2. Instrumentation/E&I 3. Computer Science/CSE			Electronics/ECE/ET/ENT Instrumentation/E&I
applicable	4. Information Technology/IT 5. Electrical/EEE/EN 6. Civil Engineering			Computer Science/CSE Information Technology/IT
Certificate	After 2 weeks	After 4 weeks	After 6 Weeks	After 4/8 Weeks (Project report in Optional)
			Six weeks certificate of	
Features	Two weeks certificate of industrial training in respective field	Four weeks certificate of industrial training in respective field	industrial training in respective field with specialization of particular field of	Four/Eight weeks certificate of industrial training with Detailed certificate in respective field + detail of specialization
			student's choice	
Course Fee	Rs. 3540/- (3000/- + GST: 18%)	Rs. 7080 (6000/- + GST: 18%)	Rs. 10620 (9000/- + GST: 18%)	Rs. 21240(18000/- + GST: 18%)
Batch Strength	15 to 30 students	15 to 30 students	15 to 30 students	5 to 20 students.

NOTE:- WEEKEND TRAINING PROGRAM IS ALSO AVAILABLE ON SATURDAYS.

Project Detail: Summer/Winter

S. No.	List of Projects at ALTTC, Ghaziabad
A	Mobile GSM Projects:
1	Planning and Design of 2G Radio Network by Planning Tool ATOLL
2	Optimization of Mobile RF Network./ MAP analysis on protocol analyzer
3	SS7 over IP comparison with SS7/Subscriber creation in MSC.
B	Broadband Projects:
1	IPv6 / Broadband Network
2	MPLS Network / IP Networking / Cyber Security
C	Computers / Information Technology Projects:
1	Design & Development of Interactive Web Portal / VLSI Design with VHDL: With SoC or NoC
2	Design ,Implementation and Configuration of Local Area Networks / On Line HR
3	Embedded System RF & Biometric Access Control System / Training Management System
4	Computer controlled crane with Three degree of freedom
D	OFC Network Projects:
1	Project on SDH Survivability in MSPP and other Configurations/
2	Project on DWDM Network Planning / Project SDH E1 Link and STM1 Link Testing
3	Project on Optimization of Optical Networks with mixed Network Elements
4	Project on Optical Fiber Link Engineering
E	Telecom Switching Projects:
1	Network Planning and Deployment of Class-5 NGN (C-DoT MAX NG)
2	Call Scenarios in NGN including Video calling through Class-5 NGN (IMS)
3	Network Design Aspects of Class-5 NGN (IMS) / NGN Deployment & Migration Strategies
F	Telecom Civil Projects:
1	Project on Structural Analysis & Design of Buildings using STAAD Pro Software
2	Project on Planning & Design of Building Service
3	Project on Estimation, Costing and Preparation of Tender Document
G	Satellite Communication Projects:
1	Planning & optimization of Radio Frequency (Link Engineering)
2	Concept of Sat Comm./Dish to home/TV Channel/DSNG(OB) VAN/GPS
H	Antenna Projects:
1	Design and analysis of rectangular micro strip patch antenna.
2	Design and analysis of stacked patch antenna for various communication applications
3	PIFA Antenna for MIMO Application
4	Metamaterial Inspired Antenna
I	Telecom Electrical Projects:
1	Air-conditioning Parameters Monitoring & Capacity Testing
2	Energy Monitoring & Auditing
3	Automation in Fire Services



Module-1: Mobile Communication

1. **Mobile communication:** Radio and cellular concept, Frequency, bandwidth, channel, transmission problems and their solutions.
2. **GSM system architecture:** Description of all functional nodes of GSM system like MSC, BSC, BTS, HLR, VLR, EIR, AUC etc.
3. **Interconnections and interface:** Connectivity details of various functional nodes (Abis, Ater, A interface etc.)
4. **Various identifier used in GSM system:** IMSI, TMSI, MSISDN, MSRN, IMEI their roles and structure.
5. **CDMA:** Concept and network architecture, Walsh code, PN code, spreading concept etc.
6. **Speech processing in GSM system:** A/D conversion, Vo-coding, Channel coding, interleaving, burst formatting, ciphering etc.
7. **Billing and customer care services:** BCCS architecture, Order flow, Intelligent network architecture and prepaid services, Value added services.
8. **GSM data network concepts:** GPRS and EDGE overview, WCDMA concepts and 3G Networks
9. **Future trend in mobile communication:** 4G-LTE, LTE-advanced, Overview of 5G.
10. **Job Aids:**
 - Physical interconnection of various functional nodes of GSM (BTS, BSC, MSC etc.)
 - Connectivity between BTS-BSC, BSC-MSC.
 - GSM Data collection by drive test.
 - Antenna and Antenna near product hardware interconnection (Jumper cable, Feeder cable etc.)

Module-2: Optical Fiber communication

1. **Optical fiber:** Brief description of optical fiber media, advantages and application of optical fiber, principle, windows of operation, classification, losses and dispersion, ITU standardized fibers.
2. **Optical devices, sources and detectors:** LED, LASER, PIN, Photo diode, avalanche photo diodes etc.
3. **Principle of PCM:** Formation of digital tributary from analog speech signals. FDM, TDM, Frame and Multi-frames, signaling etc. PDH and SDH signals.
4. **OFC Lab Visit:** exposure of FDF, DDF and FMS, various types of optical cables, Pigtail, Patch cord, connectors etc.
5. **Optical cable design and features:** Design of optical fiber cable, features of 12 and 24 fiber cable. High count optical cable i.e. 144 and 288 fiber cables.
6. **Optical fiber cable laying:** Different types of laying procedures including Duct laying and latest techniques used in laying e.g. HDD etc.
7. **Optical fiber link engineering:** Optical link power budget and design features of optical link.
8. **Optical fiber measurements:** Types of measurements taken on optical fiber, OTDR, light source and power meter.
9. **Splicing of optical fiber:** Demo on splicing of single fiber and ribbon fiber cable, hands on practice, demo on connectors, couplers etc.
10. **Job aids on OFT (Optical fiber technology):** Filling of 10 nos. of Job aids on OFT .
11. **SDH:** SDH basics, Multiplexing, Mapping and Pointer actions, different topologies used in SDH.
12. **NG-SDH:** Introduction to the next generation SDH, Ethernet basics, different protocols: VCAL, GFP and LCAS.
13. **SDH and NGSDH Lab:** Demo on STM1/4/16, SDH and NGSDH equipment's.
14. **DWDM:** Introduction, components, optical fiber amplifier-EDFA etc.
15. **FTTH, GPON/GEPON:** Fiber to the Home Concept, Active and Passive optical network, GPON and GEPON Technologies, OLT, ONT and splitters.
16. **DWDM Lab:** Demo on DWDM and GPON equipment's.



Module-3: NGN and Satellite Communication

1. **Next Generation Network:** NGN overview, migration towards IP networks, EOIP/MOIP, Soft switch architecture (hardware/software), IP transport network, NGN relative protocols overview (SIP/SIP-T/SIGTRON/H.248/RTP etc.), IMS network architecture, IMS services/IMS call flow
2. **Satellite communication:** Geostationary orbit, Geo synchronous orbit, Middle earth orbit, Low earth orbit and different working networks in these orbits, conversion of base band to RF (L-band to RF).
3. **Satellites Transponders:** Different Transponders, Bent pipe/onboard processing (OBP), Type of frequency bands (L, C, Ko and Ka bands), Polarization, Uplink and Downlink concepts.
4. **Satellite earth station:** Different equipment's, types of Antenna, LNA, LNBC, VSAT/HUB, Very small Aperture Terminal topology.
5. **Satellite Link design:** Optimization of satellite power, concept of carrier/bandwidth, carrier to Noise ratio C/N , C/N_0 , Noise bandwidth, BER etc. Concept of DTH, GPS, VSAT STAR/MESH/SCPC topology, CDMA, TDMA, FDMA.



Module-4: Management, Industrial and Environment Safety

1. Personality development
2. Leadership and Motivation
3. Stress Management
4. Interview skills
5. Fire Services, Energy Conservation and Renewable Energy



Module-5: Embedded Systems & Robotics

Includes 5 major projects, 20 practical's using ATMEGA, 16 X 2 LCD, & various Sensors.



Module-6: VLSI With VHDL

1. **VLSI Design:** Introduction, Design flow, Concept of regularity, Modularity and Locality.
2. **Fabrication of MOSFETs:** Process flow, CMOS n-well Process, design rules.
3. **MOS Transistor:** Structure, MOS system under External bias, Structure and operation of MOS Transistor. MOSFET scaling and small geometry effects. MOSFET capacitors.
4. **CMOS Inverter:** Resistive load inverter, inverter with N-Type MOSFET load.
5. **Semiconductor Memories:** DRAM (Dynamic random access memory), SRAM (Static random access memory), Non-Volatile Memory, Flash Memory, Ferroelectric random access memory (FRAM).
6. **Familiarization of digital environment with DSCH**
7. **Practice of Combinational & Sequential logic with Editor/Simulator**
8. **Familiarization of ASIC & FPGA**
9. **Installation of XILINX ISE, Understanding of VHDL**
10. **VHDL Practice for Basic Logic Circuit (BLC).**
11. **Expansion of Combinational Circuit Design with VHDL.**
12. **Practice for VHDL of Combinational Logic. & Sequential Logic**
13. **Practice for VHDL of Combinational Logic via concurrent statements/Using When/Else/Using/With/Select/When.**
14. **Understanding of Signal Vs Variables, Structural Model.**



Module-7: Advanced Networking Techniques

1. **Telecom & IT Networks:** Overview of Traditional Telecom Network, Current scenario & Network Topology, Future Trends in Communication & Network (4D Network), Design of LAN, WAN exposure in Networking LAB.
2. **Networking devices, media and components:** Introduction & working Principal of various types of Network devices like switch, Modem, NIC, WAP, Media Converter & Router. Media Overview like OF Cable, Unshielded Twisted Pair (UTP) Cable, Shielded Twisted Pair (STP) Cable, Cable Installation Guides, Wireless LANs, Unshielded Twisted Pair (UTP) Cable. (Job- Aid for Reference & Practices)
3. **IP Addressing:** Over view of OSI Model, IPv4 Basic, IPv6 Addressing. (Job-Aid for Reference & Practices)
4. **Router:** Router configuration, Routing Protocols (Dynamic, static, OSPF, RIP). Router Configuration Exposure in MPLS Broadband Lab. (Job- Aid for Reference & Practices)
5. **Concept of IP Allocation:** Static IP Allocation, Dynamic IP Allocation, DHCP: On Router & DHCP Server, DNS: On Router & DNS Server, Multiple DHCP. (Job- Aid for Reference & Practices)
6. **Understand and Implement VLAN concept:** VLAN Assignment; Security through VLAN; Inter VLAN routing.
7. **Concept of WLAN:** Overview of WLAN, Different types of IEEE 802.11 Standard, IP Phone, NGN and its exposure in NGN Lab. (Job- Aid for Reference & Practices)
8. **Utility of Server in A Network:** Firewall, Proxy server, FTP Server & HTTP (Job-Aid for Reference & Practices).
9. **Broadband Networks:** FUP, BB Components, BB DSL Parameters, Network Architecture, MNGT, Google Peering, Google Cache and security implementation for Broadband.
10. **Network design:** Case study: CDR and ERP core structure (Examples).
11. **Network Security:** cryptography, stenography, and encryption.



Module-8: Cyber Security & Networking

1. **Overview of Telecom Network & LAN Overview :** Brief idea of Telecom Network in India , LAN, MAN & WAN Structure of BSNL.
2. **Network devices, Network media & Network Components:** Various types of Network devices like Router, Switch and practical demonstration of devices with LAB visit, Network media like CAT 5/6 Cable, OFC, Various types of Network Connector and Practical demon station with LAB Visit, IP Basics and Job Aid 1, 2 & 3.
3. **Brief idea of IP Basic:** Allotment method of IP to Network and clients ,Routing protocol, Various types of Server & Uses.
4. **Cyber Security Concept:** Cyber Security concepts.
5. **Network Protocols:** Secured & Unsecured, TCP/IP, UDP,ARP, ICMP, HTTP, HTTPS, SSH.
6. **Layered Security and attack mitigation:** Attacks in Different layer, Security technologies, Link-Layer Security, Penetration Test & Ethical Hacking Techniques.
7. **Security at Network Level:** Network security & fundamental , ACL Control with Practical demonstration .
8. **Security at Application Level:** SQL Injection, Cross-Site Scripting, Broken authentication and session management .
9. **IT Act:** IT Act 2000 & its amendments 2008.
10. **Cryptography & Steganography :** Symmetric & Asymmetric Encryption, Block & Stream Cipher, Data Encryption Standard .
11. **Public Key Infrastructure:** Public Key infrastructure , Digital Certificate, Certificate authority, RPKI introduction.



Module-9,10,11:Web Technology: HTML5, CSS3, AJAX, Java script, PHP and MYSQL

Module-9

1. **Introduction of Web Technology:** Application server, database server, FTP server, intranet, internet, Topologies, OSI, TCP/IP.
2. **Server:** Configuration of Web server, Database server, FTP server, Local Host, Network Design, Window configuration.
3. **Language: HTML 5:** Overview, Basic Tags, Elements, Attributes, Formatting, Phrase Tags, Meta Tags, Comments, Images, Tables, List, Text links, Image links, Email links, Frames, I-frames, Blocks, Backgrounds, Color, Fonts, forms, Embed Multimedia, Marquees, Header, Style sheet, HTML JavaScript, Layouts, Tag reference, Attribute reference, Events reference, Fonts reference, ASCII Table lookup, Color names, URL encoding, MIME Media types, Character encodings, deprecated tags.
4. **Language: CSS-3:** Overview, Syntax, Inclusion, Measurement units, Colors, Background, Fonts, Text, Images, Links, Tables, Borders, Margins, Lists, Paddings, Cursors, Outlines, Dimensions, Scrollbars, Visibility, Positioning, Layers, Pseudo Classes, Pseudo elements, @rules, Filters, Media types, Paged media, Aural Media, Printing, layouts, Validations.

Module-10

1. **Language: AJAX (Asynchronous java script and XML):** Overview, Technology, Examples, Browser support, AJAX in action, XML-HTTP Request, Database Operations, Security, Current issues.
2. **J-Query (web Application Library):** Overview, Basics, Selectors, Attributes, Dom Traversing, CSS Selector methods, DOM Manipulation, Events Handling, AJAX, Effects.



Module-9,10,11:Web Technology: HTML5, CSS3, AJAX, Java script, PHP and MYSQL

3. **Language: JavaScript:** Overview, Syntax, Enabling, Placement, Variables, Operators, If-Else, Switch case, While Loop, For loop, For-in loop, Loop control, Functions, Events, Cookies, Page redirect, Dialogue Box.
4. **JavaScript Objects:** Objects, Number, Boolean, Strings, Arrays, date, Math, RegExp, DOM.
5. **JavaScript Advanced:** Errors and Exceptions, Form Validation, Animation, Multimedia, Debugging, Image Map, Browsers.

Module-11

1. **Learning PHP:** Introduction, Environment Setup, Syntax Overview, Variable Types , Constants, Operator Types, Decision Making, Loop types, Arrays, Strings, Web Concepts, GET and POST Methods, File Inclusion, Files & I/O, Functions, Cookies, Sessions, Sending Emails, File Uploading, Coding Standard.
2. **Advanced PHP:** Predefined Variables, Regular Expression, Error and Exception Handling, Bugs Debugging, Date and Time, PHP and MySQL, PHP and XML, Object Oriented Programming, PHP and AJAX, function Reference, Emailing and image processing..
3. **Security:** cryptography, encryption, decryption, hashing using PHP
4. **MySQL Tutorial:** Introduction, RDBMS Terminology, MySQL Database, MySQL Connection using PHP Script, Create: Drop: Select database, Data Types, Create Tables, Drop tables, Insert query, Select Query, Where Clause, Update: Delete: Query, Like clause, Sorting Results, Regexp. , Transactions, Indexes, Alter Command, Handling Duplicates, MySQL SQL Injection, Database Export/Import, MySQL Useful Functions.



Module 12: Electrical Engineering

1. **Air Conditioning:** Basics, Design Criteria, Factors Affecting Air Conditioning Loads & Latest Trends.
2. **Power system:** Overview, Sub-station-Types selection and Designing etc.
3. **Engine Alternator:** Overview, Selection and Latest installation Practices etc.
4. **Fire Services & Lifts.**
5. **Energy Conservation & Renewable Energy.**



Module 13: Civil Engineering

1. **Structural Design of Buildings & Building Services.**
2. **Overview of Computer Aided Structural Design through STAAD Pro.**
3. **Building Maintenance & Precaution in Planning & Construction.**

TRAINING

Who Can Apply:

Candidate who have completed/Pursuing Diploma/Graduation in Engineering in the disciplines of ECE/EEE/CS/IT/Civil and Electrical or M Sc (Electronics)/MCA/MBA.

How to Apply:

➤ For registration of the course, please **apply online** from our site:

www.alttc.bsnl.co.in. After applying, print registration form and attach following documents :

- Two passport size photos (one should be pasted on Registration form)
Photocopy of Identity Card/ mark-sheet (Degree/Diploma).
- Demand Draft or copy of NEFT/ e-banking / BHIM App of requisite training fee.
- All above documents is to be submitted to Training In charge by hand at the time of joining. Or can be send by post to **AGM (EB), Room No. 102, Admin Building, ALTTC, Ghaziabad** or can be submitted in person **Room No. 102, Admin Building, ALTTC Raj nagar, near Hapur Chungi Ghaziabad-201002.**

TRAINING

Course Fees:

Rs. 3,000/- plus 18% GST for 2 weeks Industrial Training (=3,540/-).

Rs. 6,000/- plus 18% GST for 4 weeks Industrial Training (=7,080/-).

Rs. 9,000/- plus 18% GST for 6 weeks Industrial Training(=10,620/-).

Rs. 18,000/- plus 18% GST for 4/8 weeks Job Oriented Program (=21,240/-).

Rs. 4,000/- plus 18% GST for 1-2 months Project Training (=4,720/-).

Rs. 6,000/- plus 18% GST for 3-Months Project Training (=7,080/-).

Rs. 12,000/- plus 18% GST for 6-Months Project Training(=14,160/-).

*Course fee is to be paid through DD. The DD should be in favour of: **The Account Officer (Cash), BSNL, ALTTC, Ghaziabad payable at Ghaziabad***

or

*Amount can be remitted to the account of ALTTC **SBI A/c No 10888625814, IFSC***

***Code: SBIN0000642** through **e-banking or NEFT** .*

Hostel Accommodation:

Rs. 100/- per day

Additional Rs 50/-per day has to be paid for Room Cooler and as per availability.

Boarding charges:

Students will directly pay to mess contractor as per their consumption.

TRAINING

Project and Certificate:

ALTTC will award certificates to trainees after successful completion of the course.

If you are not able to collect the certificate, student may give Self addressed, A4 size internal Laminated Envelop for certificate to his batch in-charge.

Project: Student may opt any topic related with course content and may take advise to his batch in-charge during the whole training period. Your batch in-charge is committed to provide full support for making project/Report.

After successful completion of the training, **a project/study report should be submitted by the student via mail to: projectalttc@gmail.com in soft only**, please do not give hard copy to batch in-charge. (save paper, save environment).

Please do not print Project report if you don't really need this. If it is mandatory in your career/future, your Batch in-charge will sign it.

Note:

The BSNL ALTTC, Ghaziabad reserves the right to postpone the course schedule. In such case the student opted will be better placed in the next batches.

BSNL/ALTTC will not provide any placement or Placement assistance. Fee once paid will not be refunded.

TRAINING

Contact Us:

***AGM (EB), Room no. 102, Admin building, BSNL, ALTTC,
RAJ Nagar, Near Hapur Chungi, Ghaziabad-201002***

Contact No. :

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Website: <http://www.alttc.bsnl.co.in>