NATIONAL VOCATIONAL EDUCATION QUALIFICATION FRAMEWORK

COMMUNICATION SECTOR

- **NVEQF is an initiative by AICTE to formally integrate vocational education together with its current conventional educational streams across school and higher education space and provide an opportunity and incentive to students to explore a large universe of opportunity.**

- **Training is to be delivered through a network of centres that could include Technical and Non-Technical Schools and Colleges ,industry centres, _Training Organizations_, Services.**

- **In addition, for practical training, laboratories of industries could be used as training Sites for skill enhancement, wherever required.**

NVEQF for Communication sector

- **NVEQF , under the aegis of AICTE , is being developed for many sectors for imparting vocational training along with course curriculum, Communication being one of the sector.**

- **For communications sector , BSNL has taken up the responsibility to frame different courses in the telecom sector to cater to the specific needs of the telecom industry.**

- **BSNL , having largest pool of trained manpower and state of art training centers in the field of telecom in most parts of the country has been the obvious choice for framing the courses in Telecom sector.**

- **Basic guiding principles in selection of streams of specialization within telecom domain.**

- **Brief of the Streams.**

- **Levels of learning in each of the stream.**

- **Skills developed at each level .**

- **Typical illustration.**

- **Telecom industry has seen phenomenal changes in last 20 years. These rapid changes may not be concomitant with what is taught even in the best of the technical institutes of the country.**

- **Thus employability is the big issue at present. Employability in the telecom sector depends on thorough practical knowledge of the switches & routers, mobile GSM and wireless access &core networks and transmission systems , end to end solutions to Govt/private enterprise customers etc.**

- **All these aspects have been taken in to account while selecting and designing different streams for vocational training.**

- **The objective was to select core field topics pertaining to installation, operation , maintenance, trouble shooting of equipments and providing solutions to needs of enterprises in Telecom domain.**

- **The skills so developed will facilitate students to get employed into telecom industry.**

- **The streams of the core field are selected based on current telecom operator's requirement . Holistic approach has been taken and thus the topics selected do not leave any of untouched area in the telecom sector.**

1. **Digital switching systems & NGN switches.**
2. **Microwave stations.**
3. **Broadband Network**
4. **Optical Fiber Network**
5. **Mobile Telecom System.**
6. **Telecom Support Infrastructure.**
7. **Telecom Solutions for Business Houses & Corporate.**

Levels of learning in each of the stream.

- **There are 7 levels in each of the 7 streams**
- **Skill level increases with each level in the ascending order.**
- **The levels are designed in a manner that :**

1. **After completion of a particular level , say level-1 the students will get job straightaway in the telecom sector commensurate with the skill set acquired corresponding to that level.**
2. **The content of one level is <u>not</u> repeated in the next level.**
3. **A student desirous of acquiring higher level should complete all levels before that level, that is, there is no lateral entry. For instance if a student wants to enroll in level 3 , then he has to first complete level 1 and level 2.**
4. **In each level of learning, emphasis is given on practical carried out on live electronic switches , transmissions systems, and mobile stations.**

Each level is corresponding to a particular academic hierarchy:

i.   **Level-1   class IX**

ii. **Level-2   class X**

iii. **Level-3   class XI**

iv. **Level-4   class XII**

v.   **Level-5   First Year of Graduation**

vi. **Level-6   Second Year of Graduation**

vii. **Level-7   Third Year of Graduation**

- Specific skill set will be developed at each level for each stream.

- There are seven streams each with seven skill levels thus there are 49 distinct skill levels.

- There will be, in effect , 49 different types of job opportunities for the students in this sector .

1. Identification of Optical Fiber System Basics- MDF/DDF/FDF/FDMS/Copper Cables OF Cable/ RF Cables.

2. Identification of different types of OFC equipment systems.

3. Identification of Measurements Meters-computer, monitor, printer Different types of Optical Power Meter, Light Source etc

4. Identification of Measurements Meters accessories: Optical power meter, OSA, ONT-30, Spectrum Analyser, SDH analyser, BER tester, Digital transmission analyser

5. Identification of Duct laying accessories: Soil strata, Surface Trenching, duct laying ,HDPE/PLB Duct, other pipes, Joint Closure etc

6. Identification of Optical Fiber Cable and Acessories -Identification of cable of one vendors and colour coding scheme of single fiber.FCPC, SCPC connectors, WSC,FDF, pigtails. Heat shrinks.

7. Identification of Measuring/testing Instruments and Accessories: Optical Power Meter, Fixed/variable Attenuator, Fixed/variable Attenuator, Patch cord, pig tail, connectors, Different types of Splitters, coupler, combiner. Splicing machines of different types.Light Source, Patch cord connectors, Different types of Splitters,OTDR, Splicing Machines for different types of OF cables. Optical Spectrum Analyser, Optical pads

8. Computer Fundamentals: Configuration and Customisation of Desktop environment

9. Office tools: MS Word

10. Office tools: MS Excel

11. Office tools: MS Power Point

12. Internet Concepts: Websites, e-mail.

13. Examinations

14. Total 226 hours

SKILL SET ACQUIRED : *Able to ..*

1.   *Eject and insert modules under supervision.*

2.   *Understand the alarms due to low power/high power, thus can assist the technician.*

3.   *Check card health status, major, minor alarms recognition and corrective action.*

4.   *Observing the status of Network Element in Local craft terminal(LCT),able to carry out local shifting of the equipment*

5.   *Unpacking of the material.*

6.   *Assistance for Operation of the equipment.*

7.   *Card repair and replacement management.*

8.   *Respond to remote stations demands like giving loop/break etc.*

9.   *Card health status monitor.*

10.   *Maintenance of appropriate temperature and humidity in the Equipment room.*

11.   *Understand the basic concepts of configuration and customisation of desktop environment*

12.   *Get acquainted with the office tools for word processing, spreadsheets and presentation*

13.   *Recognize various internet applications*

Equipments & Device Required

1. MDF/DDF/FDF/FDMS, Copper cables, OF cable, RF cable.
2. OLTE, STM-1/4/16,DWDM,FTTH: COT & ROT.
3. Optical Power meter, Light source, OTDR.
4. OSA, ONT-30, Spectrum Analyser, SDH analyser, BER tester, Digital transmission analyser.
5. HDPE duct, PLB duct, Joint Closure, RCC pipes, GI pipe.
6. WSC, Pads, Pigtails and different types of connectors like FCPC, SCPC, patch cords.
7. Variable attenuator, Fixed attenuator, Splitters, Couplers, Combiners, Splicing machine, Splicing machine for ribbon cable.
8. Desktop PCs.
9. MS Office software.
10. Internet Connectivity.
11. MS Windows OS .
12. Cables: UTP, OFC.
13. LAN Switch.
14. Router.
15. WiFi Access Point.
16. Crimping Tool & LAN Tester.
17. MS Access / MS SQL Server software

धन्यवाद
THANK YOU

ALTTC TRANSMISSION FACULTY