



Course Title: Telecom Network Operations

Credit Units:3

Course Level: PG

Course Code:TELE712

L	T	P/S	SW/F W	TOTAL CREDIT UNITS
3	0	0	0	3

Course Objectives: To provide basic understanding of Telecom Network Operations Management.

Pre-requisites:NONE

Course Contents/Syllabus:

	Weightage (%)
Module I Introduction to Telecom Network System Architecture	20
Descriptors/Topics : Introduction: History, Birth of Telecom Network System, Simple Approach to Telecom Network System Telecom Network System Architecture: Functional, Information and Physical Logical, Management Functional & Communication Plane. Telecom Network System Support Environment, OSI Communication Architecture, Relationship between TNOS & OSI	
Module II Telecom Network Operation Management Systems.	15
Descriptors/Topics : Types of Telecom Network Operation Management Systems: Four types i.e. LCT, EMS, NMS & OSS. Management Application Functional Areas: Configuration, Fault, Performance, Security & Accounting.	
Module III Management Application Functional Areas:	25

<p>■ Descriptors/Topics :</p> <p>CONFIGURATION MANAGEMENT:</p> <p>Equipment Installation, Equipment Configuration Management, Network Specification and Modification of Parameter.</p> <p>FAULT (MAINTENANCE) MANAGEMENT:</p> <p>System Alarm, Correct and Test Failing Equipment, Customer Complaint response.</p> <p>PERFORMANCE MANAGEMENT :</p> <p>Performance Management including maintaining the quality of service.</p> <p>Statistical data collection and periodic fault analysis. Quality of services parameter monitoring.</p> <p>ACCOUNTING MANAGEMENT:</p> <p>Measurement and control of costs and customer billing. Tools for measurement of Cost, Data collection for accounting records and billing.</p> <p>SECURITY MANAGEMENT :</p> <p>Access Control mechanism to customer's network data and resources.</p> <p>Security management including reports for network intrusion, encryption and authentication techniques.</p>	
<p>Module IV TNOS Interfaces & Protocol Requirements</p>	<p>20</p>
<p>Descriptors/Topics: Interfaces: Use of different Types of Interfaces- Classes of Applications, Lower Layer Protocol Requirement, Upper Layer Protocol Requirement, Security Requirement.</p>	
<p>Module V Network Management Application Protocols</p> <p>Descriptors/Topics: Common Management Information Service Element (CMISE), Remote Operation Control Service Element (ROSE), System Management Application Service Element(SMASE),File Transfer Access &</p>	<p>20</p>

Management (FTAM)	
--------------------------	--

Student Learning Outcomes:

1. Define the basic working of Telecom Network Operations.
2. Explain the types of Management Telecom Network Operations.
3. Management Application Functional Areas: Configuration, Fault, Performance, Security & Accounting.
4. Specify the different architectures of Telecom Network System i.e. Physical, Functional and Information.
6. Analyze the relation between Telecom Network System and OSI.
7. Define the different Interfaces and Protocols for the Management of Telecom Network Operation.

Pedagogy for Course Delivery: The course will be a combination of theoretical and practical teaching styles. Field visit will be arranged for showing the working of Telecom Network Management System. Classroom interaction will definitely have to be an integral part of the learning experience. Case studies will be discussed and analyzed in class.

Lab/ Practicals details, if applicable:NA

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	Total
100%	NA	100

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)	Mid-Term Exam	Project	Viva	Attendance	
Weightage (%)	10%	10%	5%	5%	70%

Lab/ Practical/ Studio Assessment:NA

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)					
Weightage (%)					

--	--	--	--	--	--	--	--

Text Reading:

- Lakshmi G. Raman, 1999, Fundamentals of Telecommunication Network Management , IEEE Press
- Aidarous Salah and Pleryak Thomas, 1999, Telecommunication Network Management Technology and Implementation, Prentice Hall of India