ETU07402 Communication Switching Systems

Communication Networks and Switching

Course outline

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ELECTRONICS AND TELECOMMUNICATION ENGINEERING

Lecture 01

- History of Communication
- Overview of switching systems,
- Electronic switching and stored program control systems
- Centralized SPC
- Availability
- Distributed SPC
- Enhanced services
- Digital switching: time switching, space switching, time and space switches,
- Switching techniques: Circuit Switching, Message and Packet Switching.

Lecture 02

Computer controlled switching systems

- Call processing
- Signal exchange diagram & State transition diagram
- Hardware Configuration
- Switching system software
- PSTN Switching in Tanzania

Lecture 03

Telephone network organization & Network Planning

- Network management,
- Network services
- various networking plans
- Types Of Networks
- Routing plan
- Numbering Plan

Lecture 04

Traffic Engineering

- Traffic pattern
- Grade of Service and blocking probability

Modeling of Switching Systems

- Markov Process
- Birth-Death Process.

Lecture 06

Signalling techniques in switching systems

- Different signalling techniques
- Characteristics of signalling
- Signalling interaction between signalling element

Lecture 07

An Overview

- Integrated Services Digital Network (ISDN)
- VPN (IP MPLS)
- Voice over IP (VOIP)
- IN Systems
- IP Multimedia Sub – System (IMS)
- Billing System

Reference book

1. Telecommunication Switching Systems and Networks, by Thiagarajan Viswanathan, PHI.
2. Telecommunication Systems Engineering, R. L. Freeman, 4/e, Wiley publication, 2010
3. Telecommunication Switching and Networks. By P. Gnanasivam, New Age International.