

BITS PILANI, DUBAI CAMPUS
INSTRUCTION DIVISION
I Sem 2015 – 2016
Course Handout (Part – II)

Date: 03.08.2015

In addition to Part I (General Handout for all courses appended to the Time Table) this portion further specific details regarding the course.

Course No. : **EEE G582 (5 Units)**
Course Title : **Telecom Network Management**
Course Instructors : **Dr. Anand Kumar, Dr Pawan Ajmera**
Instructor-in-charge : **Dr. Anand Kumar**

Scope and Objective of the Course:

The course covers management principles, practices and technologies for telecom network management for datacom networks, GSM networks, 3G networks, LTE networks, wireless networks and VoIP networks. Standards will be the basis for GSM and 3G mobile communication networks.

Course Pre/Co- requisite (if any) **& Catalogue / Bulletin Description:** *Given in the Catalogue 2015 – 2016*

Text book(s) [TB]

[T1] Mani Subramanian, Network Management: Principles and Practice, Pearson, Second Edition, 2012.

Reference book(s) [RB]:

[R1] Stallings, W., *SNMP, SNMPv2, SNMPv3, and RMON 1 and 2*, Third Edition, Pearson, 2013.

[R2] A. Leon-Garcia and I. Widjaja: *Communication Networks*; TMH, 2004.

[R3] Sauter, M, *3G, 4G and Beyond*, Wiley, 2013.

[R4] Mouly M, Pautet M.B., *The GSM System for Mobile Communications*, 1992.

[R5] GSM standards 12 series and 52 series.

[R6] 3GPP standards 32 series.

[R7] 3GPP standards 36 series.

Course Plan / Schedule:

| Sl. # | Topics to be covered | Chapter No | No. of lectures |
|-------|--|--|-----------------|
| 1. | OSI, TCP/IP, Circuit/Packet Switched networks, LAN/MAN/WAN, ATM networks, MPLS, Internetworking. | T1: Chap 1, 2 R2: Chap 2, 4, 5, 6, 7, 8, 9,10 | 1 |
| 2. | Network Planning; Network Management concepts and standards; administrative, operational and fault management; security issues; remote network management. | T1: Chap 1.8-1.13 R1: Chap 2, 3 R2: Appendix B | 2 |
| 3 | Introduction to SNMP Architecture: Models, ASN.1, Encoding; v1, v2, v3 | T1: Chap 3-7 R1: Chap 4-7, 11-17 | 7 |
| 4 | Remote Monitoring | T1: Chap 8 | 1 |
| 5 | Telecom Management Network, Network Management Applications | T1: Chap 10, 11 R1: Chap 8-10 | 3 |
| 6 | Broadband Network Management: WAN, | T1: Chap 12-15 | 6 |

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|----|---|---|-----------|
| | wired, optical, wireless | | |
| 7 | GSM Network Management: Architecture, PM, FM, CM, SM, Billing | R4: Chap 2, 9 R5: 52.021/ 402, 12.03/04/ 06/11/15/21. | 9 |
| 8 | VoIP Network Management: Architecture, PM, FM, CM, SM, Billing Mobile Apps | R3: Chap 4 Class Notes | 3 |
| 9 | 3G Network Management: Architecture, PM, FM, CM, SM, Billing | R3: Chap 2.2 R6: 32.102/ 106/111/200/371/401 | 6 |
| 10 | LTE Network Management: Architecture, PM, FM, CM, SM, Billing | R3: Chap 2.3 R7: | 3 |
| | | | 41 |

Evaluation scheme:

| S. No. | Evaluation Components | Nature of Component | Duration | Weightage % | Date & Time |
|--------|-------------------------|---------------------|----------|-------------|-------------|
| 1 | Midterm | TBD | 2 Hours | 30 | TBD |
| 2 | Assignments/ Project | - | - | 30 | Continuous |
| 3 | Comprehensive Exam | TBD | 3 hours. | 40 | 04.12.2015 |

General Instructions, Attendance & Make-up Policies, etc:

Please refer the Time Table

Timings chamber consultation:

Students should contact Dr Pawan Ajmera or Dr Anand Kumar.

Notices: All notices will be displayed on the **EEE** Notice Board.

Instructor-in-Charge

Dr. Anand Kumar

Instructors' Contact Details:

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