Approval: 1st convocation adhoc Meeting

Course Name: Network Management Systems
Course Code: CS 547
Credit: 3-0-0-3
Category:
Prerequisites: Basic knowledge of computer networks, statistics and probability.
CS211P; or CS206 or EE304 concurrently; or COT

Course description:

Computer networks are becoming larger, more complex and more critical to society. A typical network consists of routers, switches, servers, and PCs connected by assorted links – copper, optical fibre, wireless, etc. Even many cellphones today have a TCP/IP stack and are intelligent nodes in the network. The proper functioning of the network as a whole depends on the behaviour of every node and link in the network. Remote monitoring and control of these diverse and far-flung elements is essential.

SNMP is a widely-used standard for remote management of IP networks. In this course, we will cover essential aspects of the SNMP standards. We will see how network management is performed using SNMP.

Course contents:

Introduction: Review of computer networks; models of network management

SNMP: the SNMP model; MIBs; SNMP protocol; security

Other management protocols: TMN, Web-based management, desktop management

Case studies: management of wireless networks, broadband networks, clusters, clouds, etc.

Advanced topics: Proxy agents; distributed NMS; design of NMS software

References:

Mani Subramaniam, *Network Management: Principles and Practice*, 2nd ed., Pearson, 2009

W. Stallings, *SNMP, SNMPv2, SNMPv3, and RMON 1 and 2: Practical Network Management,* 3rd ed., Addison-Wesley, 1999.

L.G. Raman, *Fundamentals of Telecommunications Network Management,* IEEE Press Series on Network Management, Prentice-Hall India, 1999