

Approval: 1st Convocation adhoc

Course Name: Network and Database Practicum
Course Code: CS 211P
Credit: 0-0-3-2
Category:
Prerequisites: None

Objective: To give students a feeling of computer networks, before a theory course on the same. A light introduction to practical aspects of networking, through lab works.

Course contents:

Basic C Programming + Unix; notion of safety and importance of return values in function calls in C. Exposure to Unix command line and file system organization.

Basic Unix System Calls.

Unix sockets, ports, TCP/UDP – end-to-end argument in networks; transport model in TCP and UDP; basic flow of server/client; TCP/UDP servers and clients.

Basic Echo Server + File Server – Design and implementation of a simple echo server using TCP and UDP; Chat program.

Configuring a LAN, gateway – sub netting; configuring multiple logical networks in the same physical network; basic commands like ping, ifconfig etc.

Basics of Routing, IP Address Configuration, Subnetting - separation of logical networks using gateways; commands for configuring routing tables.

Tcp dump, Wire shark; Observing network activity, tracing a connection; grouping connections by types/protocols/source/destination; writing filters; introduction to libpcap.

Configuring and maintaining web server/DNS server.

IPTables, Configuration, Setup – notion of firewall; rule management; setting up and testing a simple firewall.

Basics of Wireless Networks, setting up a real network, performance measurement.