Paper Name: BASIC OF OPERATING SYSTEM AND NETWORKING

1. **Learning Outcome:**
   - To give students the role of operating system in computer.
   - To provide students the concept of process management
   - To familiarize students with the concept of Networking
   - To provide the practical concept of OS and Networking..
2. **Prerequisite:** NIL
3. **Semester: III**
4. **Course Type: Compulsory**
5. **Course Level: 100-199**
6. **Theory Credit:** 3
7. **Practical Credit:** 1
8. **Number of required hours:**
   g) Theory: 45 hrs
   h) Practical: 30 hrs
   i) Non Contact: 5 hrs

9. List of reference books

(a) Operating System Concepts, Abraham Silberschatz, Peter B. Galvin, Greg Gagne, Wiley

(b) Data Communications and Networking, Behrouz A. Forouzan, Sophia Chung Fegan, McGraw-Hill,

(c) Operating Systems: Internals and Design Principles, William Stallings, Pearson

(d) Computer Networks, Andrew Stuart Tanenbaum, Pearson Education

10. Detailed Syllabus

Unit no.	Unit content	No.of classes
1	Introduction to Operating System Types of software, application software, system software, operating system, types of operating systems, operating system structure, system calls, protection and security, history and generations of operating system, Open source operating systems	5
2	Process and Memory Management Process, process states, process scheduling algorithms, scheduling criteria, turn around time, waiting time, response time, First Come First	14

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	Serve (FCFS) scheduling, Shortest-Job-First (SJF) Scheduling, Shortest Remaining Time First scheduling, Priority Scheduling, Round Robin Scheduling, thread, deadlock, memory mnagement, swapping, contiguous memory allocation, first fit strategy, best fit strategy, worst fit strategy, paging, segmentation, page replacement algorithms, internal fragmentation, external fragmentation, virtual memory, demand paging	
3	Networking Introduction Computer network, network topologies, LAN and WAN, internet, network models: ISO OSI, TCP/IP, protocols and standards, transmission media: guided and unguided transmission media, twisted pair cable, co-axial cable, fiber optic cable, radio waves, micro waves, infrared	5
4	Networking concepts Analog and digital signal, error detetion and correction, Ipv4 addressing, dotted decimal notation, classful addressing, classless addressing, Ipv6 addresses, routing protocols, distance vector routing protocol, link state routing protocol, physical address, ARP, RARP, ports, sockets, frames and packets, TCP and UDP protocols, hub, repeater, bridge, router, gateway	14
5	Internet and services Internet, ISP, types of ISPs, WWW, web server, web client, HTTP, HTTPS, web browsers, domain name, URL, DNS, hierarchy of name servers, root servers, primary and secondary servers, telnet, electronic mail, e-mail architecture, SMTP, POP, IMAP, FTP	7

(b) Practical

1. Installation of Windows operating system 2 classes

2. Commands in windows: cd, mkdir, ren, assoc, attrib, mv, cp, cls, del, dir, rmdir etc. 1 class

3. Installation of Linux operating system 2 classes

4. Commands in linux: ls, mkdir, cd, touch, pwd, chmod, cat, echo, su, rm, mv, cp, locate, ps, top, man etc. 3 classes

5. Installing open source software in linux 3 classes

6. Networking commands and tools in windows: ipconfig, nslookup, ping, netstat, arp, tracert, getmac etc. 2 classes

7. Networking commands and tools in linux: ifconfig, ip, traceroute, tracepath, ping, netstat, ss,

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dig, nslookup, arp, hostname, whois etc. 2 classes

8. How to fix a slow computer 2 class

Course Designer:

(a) Name: Dr. Hasin Afzal Ahmed

(b) Contact No.: 8011810533

(c) E-mail id: hasin@gauhati.ac.in

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