HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B.C.A. Semester – IV
Elective-II : BCA-404 : Operating System

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I   **[18 Marks]**
Operating System: Definition and Meaning of Operating System, Functions of Operating System, User interface(CUI,GUI), classifying operating systems, **Operating System Structure :** Monolithic Systems, Layered Systems, Kernel, Client-Server Model. **Additional Concept**: Buffering, Spooling (simultaneous Peripheral Operation Online).

Unit - II   **[17 Marks]**
Process: Introduction, Process States, Process Control Block (PCB), Scheduling Queue.
Schedulers: Long-term schedulers, Medium-term schedulers, Short-term schedulers, Context Switch. **Process Scheduling Algorithms** (non-preemptive: FCFS, SJF and preemptive: SJF, Round-Robin (RR), Priority Based / Event Driven (ED), Multi-Level Queue (MLQ)), **Measuring Performance of Computer System :** Throughput, Turnaround time, Response time, Waiting Time, CPU burst.

Unit - III   **[18 Marks]**
Thread: Introduction, Processes & Threads, Process / Thread Synchronization, Critical Section, Semaphore. **Deadlock:** Definition, Causes for Deadlock, Deadlock situations, **Method for Handling Deadlocks:** Deadlock prevention, Deadlock avoidance, Deadlock Detection, Deadlock Recovery.

Unit - IV   **[17 Marks]**
Memory-Management Unit, Memory Management Schemes: Program Initiation, Contiguous Memory Management, Memory Fragmentation, Memory Placement Policy / free partition allocation techniques, Non-Contiguous Memory Management, Paging: Address Translation Unit (ATU), Segmentation, Demand Paging, Page Fault and its solution,

Text Book:

1. Operation System Principal, Abraham Silberscats, Peterbare Galvin, Greg gagne
2. The Complete Reference, Richard L. Petersen

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I   (18 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.
Q.2 - Unit-II   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.
Q.3 - Unit-III   (18 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.
Q.4 - Unit-IV   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

Filename: BCA-404 (Elective-OS)
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      II\BCA\Sem-IV
Template: C:\Documents and Settings\Student\Application
      Data\Microsoft\Templates\Normal.dot
Title: HAMCHANDRACHARYA NORTH GUJARAT
      UNIVERSITY,, PATAN
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