MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

BACHELOR OF COMPUTER APPLICATION
(BCA Annual Scheme)
(To be offered in affiliated colleges from session 2016-17)

1. **Duration of the Course :** The BCA (AnnualScheme)course will be of three years duration. Each year will be approximately 10 months (minimum 180 working days) duration.

2. **Medium of Instruction :** The medium of instruction and examination shall be English.

Second Year B.C.A.
(Effective from session 2015-16)

(a) The minimum marks for passing II year shall be 40% in each paper and 40% marks in the aggregate of papers.

(b) A candidate may be promoted to III year if he has/ she secured at least 40% marks in at least six papers/practicals out of 8 theory/practical papers and more than 40% in aggregate. Such candidate shall be required to appear in papers in which he has secured less than 40% marks along with papers of III year when these courses are offered again, so as to satisfy the passing criteria laid in II(a).

(c) A candidate fails to satisfy the criteria II(a), II(b) for promotion to III year shall be required to rejoin the course in II year, if otherwise eligible in accordance with the University regulations laid in this regard.

BCA 203: Fundamentals of Operating Systems

UNIT-I
Introduction: What is an operating system? Mainframe, desktop, multiprocessor, distributed, clustered, real-time and handheld systems.
Operating System Structures: System components, operating system services, system calls, systems programs, system structure, virtual machines.

UNIT-II
Process: Process concept, process scheduling, operations on processes, cooperating processes. Inter process communication.
CPU Scheduling: Basic concepts, scheduling criteria, scheduling algorithms, algorithm evaluation.

UNIT-III
Process Synchronization: The critical section problem, semaphores, classical problems of synchronization.

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Deadlocks: Deadlock characterization, methods for handling deadlocks. Deadlock prevention, avoidance and detection. Recovery from deadlocks.

UNIT-IV

Memory Management: Swapping, contiguous memory allocation, paging, segmentation, segmentation with paging.

Virtual Memory: Demand paging, page replacement, allocation of frames, thrasing.

UNIT-V

Linux: History, design principles, kernel modules, process management, scheduling, memory management, file systems, input and output, inter process communication, network structure, security.

Recommended Books:

1.Silberschatz G.G., Operating System Concepts, John Wiley & SonsInc.