

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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Lecture-10 By Vivek Dubey

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COMPUTER SCIENCE AND ENGINEERING

CS403PC

COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

CS403PC

BHARAT INSTITUTE OF ENGINEERING AND TECHNOLOGY

Scheme of Operating System

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S. No.	Course Code	Course Title	L	T	P	Credits
3	CS403PC	Operating Systems	3	0	0	3
6	CS406PC	Operating Systems Lab	0	0	3	1.5

UNIT-2:

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- Process and CPU Scheduling –
 - Process concepts and scheduling, Operations on Processes, Cooperating Processes, Threads, and Interposes Communication, Scheduling Criteria, Scheduling Algorithms, Multiple -Processor Scheduling.
- System call interface for process management-
 - fork, exit, wait, waitpid, exec

Operations on Processes



- The two major operations performed on process are:
 - ✓ Process Creation
 - ✓ Process Termination

Process Creation

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- Parent process **create** children processes, which, in turn create other processes, forming a tree of processes.
- Characteristics of Process Creation

- ✓ Resource sharing methods

Parent and children share all resources
Children share subset of parent's resources
Parent and child share no resources

- ✓ Execution modes

Parent and children execute concurrently
Parent waits until children terminate

- ✓ Address space representation

Child duplicate of parent
Child has a program loaded into it



Process Termination - Methods

- **Exit** - Process executes last statement and asks the operating system to delete it (i.e. Process):
 - ✓ Output data from child to parent (via wait)
 - ✓ Resources of Process are deallocated by operating system
- **Abort** - Parent may terminate execution of children processes under the following situations..when:
 - ✓ Child has exceeded allocated resources
 - ✓ Task assigned to child is no longer required
 - ✓ If parent is leaving..
 - ✓ Some operating system do not allow child to continue if its parent terminates
 - ✓ All children terminated - cascading termination