

SYSTEM PROGRAMMING & OPERATING SYSTEM

CS 513

Credits - 3

Assemblers

One pass and Two Pass, Macro Processors, Linkers, Loaders: absolute and relocating loaders, editors and Debuggers, Introduction to Compilers

System Calls

Programming using system calls (in DOS or Unix)

Operating System

Introduction to Operating system, O.S. services and Kernel, Multiprogramming and Time Sharing

Processor Scheduling

Preemptive and non-preemptive, algorithms (FCFS, SJF, RR, priority)

Process Synchronization

Critical section problem, critical region, semaphores, monitors

Memory management

Swapping, paging, Demand paging and virtual memory

I/O and device management

I/O hardware, interrupts, DMA, Block and Character Devices, blocking and non-blocking I/O, spooling and device reservation

Disk and File Management

Disk structure, disk scheduling (FCFS, SSTF, SCAN), boot block

Deadlocks, Concurrent processes, protection and security

Introduction to multiprocessors and Distributed O.S.