
SYLLABUS

Date/ Revision April 2017
Faculty Engineering
Approval Head of Program Study

SUBJECT : OPERATING SYSTEM

1. Identification of Subject:

Name of Subject : OPERATING SYSTEM
Code of Subject :
SKS / ECTS :
Semester :
Study Program : CSE
Lecturer :

2. Competency

After having the course, students are expected to:

- a) become exposed to classic and current operating systems
- b) understand the structure and the operation of an operating systems
- c) developed simple operating system projects

3. Description of Subject:

The course covers the importance of the operating system and its function, the interaction between application and the operating, and the interaction between operating systems and the machine. This course will employ primitive (simple) operating systems and much advance such as Linux and Solaris. Student is encouraged to create a small system at the end of the session

4. Learning Approach

Approach : Problem based learning and project
Method : Discussion, question answer, group work
Student Task : Homework, assignment and project
Media : Power Point Presentation, Video

5. Evaluation

a) Absence maximum	: 25%
b) Participation in discussion	: 5 points
c) Homework, Classwork	: 10 points
d) Project	: 25 points
e) Final Examination	: 60 points
Total	: 100 points

Contents/ Topics of Lecturing:

Week	Topics	Content	Remark
1 -2	Chapter 1	Computer system organization (Device Device controller, Interrupt, Device and CPU interaction, Bootstrap program) I/O structure (Polling, interrupt, DMA, interrupt vector, Computer System Architecture, Single/Multiple Processors System, Parallel system Operating System Structure (Operating System Operations, Dual Modes operation, Timer, Process management, Storage management)	
3-4	Chapter 3	Process concept, PCB, Process state Process scheduling Process operations Intercrosses communication Techniques of Intercrosses communication (Message passing, Shared memory, Client server)	
5-7	Chapter 5	CPU scheduling (introduction and objectives, preemptive and non preemptive scheduling, scheduling criteria) Algorithms (FCFS, SJF + Prediction of next burst of SJF, Priority Scheduling, RR. Multilevel Queues and feedback)	
8	Mid Term Break		
9-10	Chapter 8	Main Memory Management (Background, Basic Hardware for managing Memory, Address binding) Swapping Contiguous allocation (Relocation and protection problems, Fragmentation) Non-contiguous allocation(Paging + hardware support, Segmentation)	
11-12	Chapter 9	Virtual Memory (Background, Demand paging Basic concept, Performance in demand paging Page replacement algorithms, Allocation of frames. Allocation algorithms, Thrashing)	
13-14	Chapter 11	File System (File system structure, Partition and mounting, Allocation methods, Contiguous, Linked Indexed, Free space Management, Bit vector, Linked list, Grouping, Counting)	
15	Final Examination		

6. Book Reference:

Modern Operating Systems Fourth Edition, Andrew S. Tanenbaum, Herbert Bos 2015, Pearson Education, 2008