

COURSE FILE SUMMARY

| COURSE INFORMATION | | | |
|--|-------------------------------------|-----------------------|------------------------------------|
| College / Institute / Center: | Management & Technology | Department: | BUSINESS INFORMATION SYSTEMS Dept. |
| Program Title: | Bachelor of Business Administration | Program Code: | AS, ES |
| Course Title: | New Trends(Operating Systems) | Course Code: | S317 |
| # Hours: | ----- 2 hr ----- | ---- 2 hr ---- | ----- 3 hr ----- |
| | Lecture | Lab / <u>Tutorial</u> | Credit |
| Pre Requisites: S225 Introduction to computer programming | | | |

COURSE AIM

This course introduces the concept, structure and the mechanisms of operating system. It gives the student a complete view about the components of any operating system and the relations among these components. The course is targeting towards building a solid knowledge about modern operating systems and their related issues in both design and management directions. The course studies many optimization issues in the direction of resource usage and user satisfaction.

COURSE OBJECTIVES

- Introduce the computer system architecture – introduce the history, objectives, and functions of any OS.
- Present the concept of process and its description and control.
- Define the concurrency problem.
- Describe the memory management techniques and virtual memory.
- Describe the processor scheduling techniques.
- Introduce the scheduling techniques used in I/O management.
- Describe the management and organization of files.

STAFF REQUIREMENTS

| | Qualifications | Special Skills | Number |
|--------------------------|---|-------------------------|--------|
| Lectures | Ph.D. CS or BUSINESS INFORMATION SYSTEMS | Practical Experience in | 1 |
| Tutorials | M.Sc. CS or BUSINESS INFORMATION SYSTEMS | | 1 |
| Laboratories / Workshops | B.Sc. or M.Sc. CS or BUSINESS INFORMATION SYSTEMS | | 1 |

| LECTURE SCHEDULE | | | |
|------------------|--------------------|-----|---|
| Lecture | | | Description |
| # | Week | Hrs | |
| 1 | 1 st . | 2 | Background |
| 2 | 2 nd . | 2 | Computer system overview – Topics about software and hardware |
| 3 | 3 rd . | 2 | Operating system overview |
| 4 | 4 th . | 2 | Process Description |
| 5 | 5 th . | 2 | Process control and context switching mechanisms |
| 6 | 6 th . | 2 | Schedulers ,Threads,multiprocessing |
| 7 | 7 th . | 2 | Mid Term Exam |
| 8 | 8 th . | 2 | Concurrency and mutual exclusion |
| 9 | 9 th . | 2 | Messaging and synchronization |
| 10 | 10 th . | 2 | Concurrency deadlock and starvation |
| 11 | 11 th . | 2 | Deadlock prevention and Deadlock Detection |
| 12 | 12 th . | 2 | Deadlock prevention and Deadlock Detection Contd. |
| 13 | 13 th . | 2 | Memory management and organization |
| 14 | 14 th . | 2 | Memory Management Techniques |
| 15 | 15 th . | 2 | Memory contd.: Paging and Revision. |
| 16 | 16 th . | 2 | Final Exam |

| TEXT BOOKS | |
|------------|---|
| Code* | Description |
| TB | Operating systems ,Internals and Design Principles – William Stallings, ,5thEdition |
| | ISBN 0-13-127837-1 |

| REFERENCE BOOKS | |
|-----------------|-------------|
| Code* | Description |
| | |
| | |

| TUTORIAL SCHEDULE | | | |
|-------------------|------|-----|-------|
| Tutorial | | | Topic |
| # | Week | Hrs | |
| | | | |

LABORATORY WORKSHOP SCHEDULE

| Lecture | | | Description |
|---------|------------------|-----|--|
| # | Week | Hrs | |
| 1 | 2nd | 2 | Introduction to Linux OS |
| 2 | 3 rd | 2 | Simple commands |
| 3 | 4th | 2 | Creating files |
| 4 | 5th | 2 | Creating Directories |
| 5 | 6 th | 2 | Manipulating files and Directories |
| 6 | 7 th | 2 | Creating links ,Listing Contents |
| 7 | 8 th | 2 | Midterm exam |
| 8 | 9 th | 2 | Scripts |
| 9 | 10 th | 2 | Introduction to Linux system processes |
| 10 | 11 th | 2 | Introduction to administrative commands |
| 11 | 12 th | 2 | Commands for scheduling processes |
| 12 | 13 th | 2 | Commands for scheduling processes Contd. |
| 13 | 14 th | 2 | Linux administrative commands contd. |
| 14 | 15 th | 2 | Revision |
| 15 | 16 th | 2 | Final Exam |

COMPUTER USAGE

PCs connected to linux server.

| Week # | Points | Written | Oral | Term Paper | Continuous | Practical |
|--------|--------|---------|------|------------|------------|-----------|
| 7 | 40 | 20 | | | | 10 |
| 12 | 0 | | | | | |
| 1-15 | 10 | | | | | |
| 16 | 50 | 40 | | | 10 | 20 |

READING MATERIAL

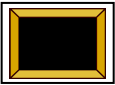
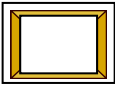






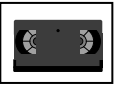
| Code* | Description |
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* TB : Text Book RB: Reference Book ST: Standards / Codes LN: Lecture Notes

SUPPLEMENTARY MATERIAL

| Code* | Description |
|--|--|
| OS SW | Slides will be used for the Lectures and labs Linux |
| <p>*PR: Periodical SW: Software VT: Video Tape OS: Overhead Slide Projector MD: Model AC: Audio Cassette NC: Notebook Computer</p> | |

EDUCATIONAL RESOURCES

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Prepared by :

Designation Ms.

Name: Lamiaa Mostafa

Sign:

Date: 15/8/2010

Approved by :

Designation Dr.

Name: Walid Abdelmoez

Sign:

Date: 15/8/2010