

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

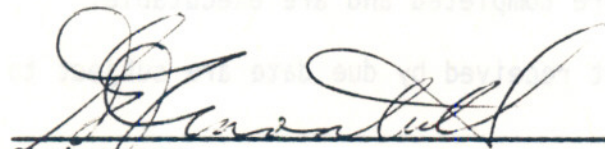
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: OPERATING SYSTEMS  
Code No.: EDP 234-3  
Program: ELECTRONIC DATA PROCESSING  
Semester: THREE  
Date: SEPTEMBER 1984  
Author: G. M. WIED

New: \_\_\_\_\_ Revision: X

APPROVED:

  
Chairperson

84.06.11  
Date

CALENDAR DESCRIPTION

OPERATING SYSTEMS

Course Name

EDP 234-3

Course Number

DEFINITION:

A study of the software that manages the sharing of computer resources. The concentration will be on the applications of the software to a real world environment considering single and multi-programming systems, virtual storage, etc. Elements of the software will be investigated including control programs, JCL, language systems and utilities with practical analysis and applications using the VAX 11/780 software.

STUDENT EVALUATION:

Tests	60%	OR	Tests	30%
Assignments	30%		Assignments	30%
Attendance & Participation	<u>10%</u>		Final Test	<u>40%</u>
TOTAL	100%			100%

The final test will cover the entire semester and can be written if:

- 1) Minimum 75% class attendance.
- 2) To substitute for a failed or missed term test.
- 3) The term grade is over 40% - otherwise an R grade will be assigned.
- 4) All assignments were completed and are executable.

NOTE: Any assignments not received by due date are subject to a zero grade.

GRADING:

A = 80 to 100%  
B = 70 to 79%  
C = 55 to 69%  
R = Under 55%

Pre-final Test: I = 40 to 55%  
R = Under 40%

TEXT:

Operating Systems, A Systematic View  
Wm. S. Davis, Addison-Wesley, 1983.

REFERENCES:

VAX/VMS Guide To Using Command Procedures (In Terminal Room)  
- Strongly recommended as regular resource for all assignments.

Calingart, Peter. Operating Systems Elements - A User Perspective,  
Prentice-Hall, 1982.

Harrison, William S. Data Processing - Computers In Action, Wadsworth  
Inc., 1982.

Shelly & Cashman. Introduction to Computers and Data Processing,  
Anaheim Publishing Co., 1980.

TOPICAL OUTLINE:

References

Topics

Chapter 1 &  
Lecture Notes

1. Review of Key Concepts:
  - operating systems defined
  - the elements of an operating system
  - types of operating systems (definitions)
  - memory and the CPU
  - DCL grammar and syntax

LAB #1: File Management Commands. Design of a file management procedure and proper naming conventions.

Chapter 2

2. Hardware:
  - mainframe: memory, CPU, registers, machine cycle
  - front end and back end
  - interfaces, control units, channelsThe VAX 11/780 architecture (Video Tape)

LAB #2: Hardware Assignments: use of \$SHOW LOGICAL and \$ASSIGN to re-direct I/O.

Chapter 3

3. Software and Data:
  - logical vs. physical
  - macros, object and load modules
  - file organization and access
  - libraries and DBMS
  - RMS (VAX 11/780 Record Management Services) - its function

References

Topics

- LAB #3: Design of program management procedures for file independence (use of symbols and logical-names).
- Chapter 4
4. Linking The System Components:  
- the bus lines  
- a machine cycle  
- architectures  
- linking the external devices  
- logical vs. physical I/O  
- VAX file protection system
- LAB #4: Show protection on current files and change protection on one of these files.
- Chapters 5, 6,  
13, 14
5. Operating System Development:  
- IOCS  
- single program systems and batch systems  
- time-sharing and multi-programming  
- multiprocessing  
- virtual storage systems  
The VAX 11/780 virtual storage system (Video Tape)
- Lecture Notes &  
Chapters 7, 11
6. Communicating With The O/S:  
- command languages and JCL: functions and sources  
DCL: The VAX 11/780 command language  
- grammar and syntax reviewed  
- files, directories and libraries  
- program development, system efficiencies and options including use of logical names and symbols
- LAB #5: Creating command procedures as 4th-generation language with I/O and branching.
- Pg. 122-124  
Pg. 236-241
7. Other Operating Systems:  
- a comparison: CP/M  
- UNIX
- Lecture Notes
8. Datatrieve: The VAX 11/780 "Report Writer":  
- design and creation of datatrieve files and their uses  
- use of ADT (Application Design Tool) and editing functions
- OPTIONAL TOPICS:
9. An Introduction To FMS (VAX Screen Design Facility)