SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: SYSTEMS MANAGEMENT

Code No.:   CET-312   Semester: 4
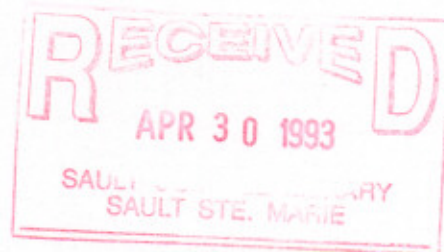
Program: COMPUTER ENGINEERING TECHNOLOGY

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Date: MAY. 1, 1991   Previous Outline Dated: SEPT.,1990

APPROVED: _X. P. Quezeth_   _93-04-29_
                Dean   Date

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TOTAL CREDIT HOURS: 48

PREREQUISITES:

I.   PHILOSOPHY/GOALS:

This course provides the student with an understanding of the role
of a computer systems manager and the procedures required to
install and maintain an operating system, specifically VMS.

The student will acquire a general view of operating system
concepts, including file systems and security issues, while
gaining practical experience in system installation and
maintenance on VMS systems in the lab.

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II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will:

1. Be able to discuss the responsibilities and duties of a systems manager.

2. Install the VMS operating system and layered products (specifically DECNET) and carry out the necessary post installation procedures.

3. Have the ability to examine and modify the operating system environment in terms of managing startup and login command procedures, adding and maintaining user accounts and ensuring user and system security.

4. Be proficient in the writing of command procedures to automate commonly performed management functions.

5. Be proficient in and understand the use of the following utilities: AUTHORIZE, BACKUP, MONITOR, ACCOUNT, SYSGEN, AUTOGEN

6. Have the practical ability to startup and shutdown a MicroVAX system including bringing the necessary peripherals on/off line and being able to install and remove various peripheral media.

III. TOPICS TO BE COVERED:

1. VAX hardware environments.

2. System managers responsibilities.

3. File systems, security issues and mechanisms.

4. The DCL environment, command set and command procedures.

5. System utilities, specifically AUTHORIZE, BACKUP, MONITOR, ACCOUNTING, AUTOGEN AND SYSGEN.

6. VMS and layered product installations (specifically DECNET).

7. VMS and product licensing.

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IV.   **LEARNING ACTIVITIES**   REQUIRED RESOURCES

BLOCK I- Introduction to Systems Management

1. Become familiar with the typical DEC
    hardware environments a system manager
    will likely encounter. In particular,
    the Sault College network of VAXes and
    the MicroVAX II hardware environments
    will be studied in detail.   Course Notes

2. Be able to describe the
    responsibilities of a systems manager
    in terms of the following tasks:
    installing and upgrading the system,
    setting up for site specific
    operations, security, periodic
    maintenance duties, system tuning and
    managing special system configurations
    such as clusters and networks.

3. Become familiar with post installation
    duties including system customization,
    account maintenance, resource and   "VAX/VMS
    access controls, backups, restores and   DOCUMENTATION
    monitoring ques, output devices and   SET."
    other system resources.

4. Be able to describe the
    responsibilities of system managers,
    operators and other staff and to be
    aware of the different management
    structures that exist.

5. Be able to describe the various system
    management tools and utilities
    available in VMS.

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BLOCK II- The VMS Environment and DCL

1. To have practical ability within the
    DCL environment, knowledge of general
    command syntax and a working knowledge   Handouts
    of the DCL command set.
                                                     Course Notes

2. Describe the VMS file structure in
    terms of the directory hierarchy,   "VAX/VMS
    filename specifications and file   DOCUMENTATION
    protection.   SET."

3. Describe and have practical ability in
    the use of logical names (as a
    mechanism for device independence) and
    symbols.

4. Describe VMS security issues and
    protection mechanisms in terms of the
    Reference Monitor Concept, UIC based
    and access control list protection,
    user accounts and security audits.

5. Be proficient in writing and debugging
    advanced command procedures with
    emphasis on control structures, LEXICAL
    functions, command procedure I/O and
    I/O redirection,.

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BLOCK III- Systems Management Functions

1. Be able to add and maintain user
    accounts using the AUTHORIZE utility
    and to understand the privileges,   "VAX/VMS
    rights and resources available.   DOCUMENTATION
                                               SET."

2. Be able to perform backup operations
    (image and user files) using the BACKUP   VMS help
    utility.

3. Be able to monitor usage and
    performance using the MONITOR and
    ACCOUNTING utilities.

4. Understand performance issues and the
    use of AUTOGEN and SYSGEN utilities.

5. Be able to install and maintain Batch
    and Print ques.

6. Be proficient in the use of various
    commands and utilities used in security
    management.

7. Be able to startup and shutdown a VAX
    system and describe what happens in the
    various command procedures that are
    invoked.

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BLOCK IV- Operating System Installation

1. Become familiar with the VAX/VMS   Course notes
    documentation set.
                                               "VAX/VMS
2. Be able to describe the difference   DOCUMENTATION
    between an installation, upgrade and   SET."
    update.

3. Describe the procedures to install VMS
    (V5.0) then upgrade it (to version
    5.2).

4. Create a standalone backup and
    understand its purpose and use.

5. Describe product licenses and
    procedures for their installation.

6. Describe the procedures for installing
    layered products.

V.   METHOD OF EVALUATION:

            3 THEORY TESTS (20 % each)

            LAB PROJECTS/ASSIGNMENTS (35 %)

            QUIZZES AND PRACTICAL TESTS (5 %)

            (The percentages shown above may vary slightly where
            circumstances warrant.)

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GRADING SCHEME

A+	90	–	100%
A	80	–	89%
B	70	–	79%
C	55	–	69%
I	Incomplete		
R	Repeat		

UPGRADING OF INCOMPLETES

When a student's course work is incomplete or final grade is below 55%, there is the possibility of upgrading to a pass when a student meets the following criteria:

1. The students attendance has been satisfactory.
2. An overall average of at least 40% has been achieved.
3. The student has not had a failing grade in all of the theory tests taken.
4. The student has made reasonable efforts to participate in class and complete assignments.

LABS:

Lab activities represent a very important component of this course in which practical 'hands-on' skills will be developed. Because of this, attendance is mandatory and the satisfactory completion of all lab activities is required. It is the student's responsibility to discuss absences from regularly scheduled labs with the instructor so that alternate arrangements (where possible) can be made to complete the lab requirements.

ATTENDANCE:

Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the instructor, so that remedial activities can be scheduled.

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VI. REQUIRED STUDENT RESOURCES:

TEXT BOOKS:

No text book is available for this course. However, 10 copies of relevant volumes of the VAX Documentation set will be made available as well as handouts from the instructor.

VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE:

VIII. SPECIAL NOTES:

Students with special needs (eg. physical limitations, visual or hearing impairments, or learning disabilities) are encouraged to discuss any required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as deemed necessary to meet the needs of students or take advantage of new or different learning opportunities.