SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

SAULT COLLEGE

COURSE OUTLINE

COURSE TITLE: Introduction to Operating Systems

CODE NO. : CSO105   **SEMESTER:** 11F

PROGRAM: IT Studies

AUTHOR: Dennis Ochoski

DATE: Sept/2011   **PREVIOUS OUTLINE DATED:** Sept/2010

APPROVED: "Penny Perrier"   June/11

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                           CHAIR   **DATE**

TOTAL CREDITS: 5

PREREQUISITE(S): None

HOURS/WEEK: 4

Introduction to Operating Systems   CSO105

I.   COURSE DESCRIPTION:

This course will provide students with an introduction to:

- Sault College's Student Computing facilities including Internet and e-mail
- Fundamental computer Operating System concepts and methodologies
- File Transfer Protocol (FTP) from a Graphical User Interface(GUI) and Command Line Interface (CLI) perspective
- Practical, hands-on interaction with implementations of Microsoft Windows using the Graphical User Interface (GUI) and Command Line Interfaces (CLI)

The first section of this course is dedicated to familiarizing students with Sault College's computing infrastructure regarding: security and terms-of-use policies, login/logout procedures, disk storage access and quota. Internet and email usage is also covered providing students with rudimentary skills for topical research and effective communication.

The Operating System concepts section of this course will introduce students to the physical components of a computer system and how the operating system manages and coordinates all computing activity.

Students will use Microsoft Windows 7 Professional in the GUI and CLI environment. In the CLI environment, students will explore and become familiar with the Command Line Interface, command syntax, individual commands, and ultimately batch file (command) execution.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1.   **Work with Sault College's Network and the Internet**

Potential Elements of the Performance:
- Read and abide by Sault College's policy on computer usage: http://student.saultcollege.ca/ComputerLabs.asp
  Understand and effectively use the Sault College lab and data environment: http://student.saultcollege.ca/ComputerLabs.aspm
- Map to Distro, AIT, and Student Data Files
- Understand the purpose of, utilization, and manipulation of folders (or directories), sub-folders or sub-directories; absolute and explicit paths: http://en.wikipedia.org/wiki/Path_(computing)
- Explore fundamental Internet concepts and protocols: http://en.wikipedia.org/wiki/Internet_Protocol

- Work with Internet browser software application(s): http://en.wikipedia.org/wiki/List_of_web_browsers
- Understand the purpose and components of URLs: http://en.wikipedia.org/wiki/Uniform_Resource_Locator
- Identify common web sites and utilities: Google Apps, Gmail, Facebook, Chrome, etc.
- Identify and use Search Engines effectively: http://www.learnwebskills.com/search/engines.html
- Work with File Transfer Protocol in the GUI and CLI environment: http://en.wikipedia.org/wiki/File_Transfer_Protocol
- Use FileZilla to apply FTP
- Identify email protocols: http://en.wikipedia.org/wiki/Internet_Message_Access_Protocol
- Learn email etiquette: http://www.enough.utoronto.ca/computeruse/eetiquette.htm
- Configure your mailbox including mail server entries: http://support.microsoft.com/kb/287532
- Send, receive, reply, forward and copy e-mail
- Send, receive, forward and copy e-mail attachments
- Apply CC and BCC e-mail addressing
- Understand the purpose of a listserv: http://en.wikipedia.org/wiki/Electronic_mailing_list
- Use Web Mail
- Understand the purpose of and organize email folders
- Incorporate email constructs such as distribution lists, calendar entries and signatures: http://en.wikipedia.org/wiki/Filename_extension
- Understand fundamental concepts related to Internet telecommunications: http://en.wikipedia.org/wiki/Telecommunication

2. **Define and apply Operating System theories and concepts**

   Potential Elements of the Performance:
   - Learn the component pieces of a computer system and the operating system's relevant roles and responsibilities: http://www.howstuffworks.com/pc.htm
   - Learn how operating systems are classified based on the number of users and tasks that execute simultaneously: http://en.wikipedia.org/wiki/Operating_system
   - Learn the significance of the binary representation of bits, bytes, and words.
   - Understand the significance of the ascii, ebcdic, and Unicode character set representation: http://en.wikipedia.org/wiki/Character_encoding

- Learn the concepts of kernel, shell, process, program execution, input / output operations, communications, error detection, and memory management:
http://en.wikipedia.org/wiki/Operating_system
- Differentiate between the following: 32 bit vs 64 bit system, Windows OS vs Unix OS:
http://www.techsupportalert.com/content/32-bit-and-64-bit-explained.htm
http://windows.microsoft.com/en-CA/windows-vista/32-bit-and-64-bit-Windows-frequently-asked-questions
http://en.wikipedia.org/wiki/Comparison_of_Windows_and_Linux
- Understand concepts such as preemptive multitasking, virtual memory, and virtual machine:
http://en.wikipedia.org/wiki/Preemption_(computing)
http://www.howstuffworks.com/virtual-memory.htm
http://www.webopedia.com/TERM/V/virtual_machine.html
- Explore the fundamentals of secondary storage covering: disks, sectors, tracks, cylinders, platters, partitions, the master boot record, and the boot process:
http://en.wikipedia.org/wiki/Disk_storage
http://en.wikipedia.org/wiki/Disk_partitioning

3. **Utilize Microsoft Windows 7 Professional (see http://windows.microsoft.com/en-CA/windows7/help)**

   Potential Elements of the Performance:
   - Study the history of Windows operating systems
   - Identify and utilize Windows desktop components
   - Identify the component parts of a Window and their purpose
   - Understand the significance of the Start button and menu
   - Utilize the on-line Help features availed by the GUI
   - Identify and apply proper shutdown and log-off procedures
   - Create shortcuts on the desktop
   - Understand Windows file naming conventions
   - Effective use of various dialogue techniques
   - Differentiate between various file types: system, data and executable
   - Copy, move, edit and delete files using My Computer, Windows Explorer; and cut, copy, paste techniques
   - Understand and implement effective use of the Recycle Bin.
   - Understand, view, and modify file and folder attributes
   - Identify and utilize available disk drives
   - Identify and differentiate between various file systems used by Windows - FAT and NTFS

- Understand the theory and purpose of formatting a disk.
- Differentiate between system, non-system, and recovery disks
- Develop effective use of Windows Search capabilities
- Develop contextual awareness of the purpose of the Windows Registry
- Develop awareness for the purpose of a Restore Point
- Develop awareness of Windows memory allocation and utilization
- Differentiate between Internal and External commands, and the concept of Path to locate external commands
- Understand the concept of Multi-tasking in Windows
- Determine how to access the Command Line interface

4. **Develop and implement Windows/DOS commands and batch files, understanding of the command execution environment.**

   Potential Elements of the Performance:
   - Develop knowledge of how to interact with the Command Line Interface
   - Utilize the on-line Help features availed from the command line
   - Develop understanding, interpretation of Windows/DOS command syntax using a syntax map
   - Understand how to invoke command execution
   - Differentiate between executable commands, programs and batch files
   - Discuss the theory and methodology which Windows/DOS follows when executing commands and/or programs
   - Understand how to create, store, retrieve and edit batch files
   - Develop understanding and effective utilization of command parameters.
   - Develop understanding and effective utilization of environment variables using the set command
   - Understand the purpose and effective deployment of batch file commands: cls, rem, echo, pause, call, if, goto, shift, for, choice
   - Illustrate effective use of command wildcard syntax and processing
   - Differentiate between various file types: directories, system, data and executable scripts
   - Understand the purpose of and utilization of directories, sub-directories and directory paths
   - Differentiate between relative and explicit directory paths and associated syntax
   - Copy, move, and delete files and directories using the command line
   - Understand, view, and modify file permissions

III.   TOPICS:

1.   **Work with Sault College's network and the internet**
2.   **Define and apply operating system theories and concepts**
3.   **Utilize Microsoft Windows 7 Professional**
4.   **Develop and implement Windows/DOS commands and batch files, understanding of the command execution environment.**

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:

USB 2.0, IDE External Hard Drive Enclosure with Hard Drive
or
USB 2.0 to Hard Drive Adapter and Hard Drive, at least 320 GB in capacity

V.   EVALUATION PROCESS/GRADING SYSTEM:

3 WRITTEN TESTS   *30%*
QUIZZES   *20%*
2 LAB PRACTICAL TESTS   *20%*
LAB AND TAKE-HOME ASSIGNMENTS   *30%*

Some minor modifications to the above percentages may be necessary. The professor reserves the right to adjust the mark based upon leadership, creativity and whether there is an improving trend.

- Students must achieve an average grade of **50%** on both the test and assignment portions of the course in order to pass the entire course.
- Assignments must be completed satisfactorily to pass the course. Late hand in penalties will be 10% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- The professor reserves the right to adjust the number of tests, practical tests and quizzes based on unforeseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.

The following semester grades will be assigned to students:

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit)	Credit for diploma requirements has been awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

Introduction to Operating Systems   CSO105

VI.   OTHER EVALUATION CONSIDERATIONS:

1.   In order to pass this course the student must obtain an overall test/quiz average of 50% or better, as well as, an overall assignment average of 50% or better. A student who is not present to write a particular test/quiz, and does not notify the professor beforehand of their intended absence, may be subject to a zero grade on that test/quiz.

2.   There will be no supplemental or make-up quizzes/tests in this course unless there are extenuating circumstances.

3.   Assignments must be submitted by the due date according to the specifications of the professor. Late assignments will normally be given a mark of zero. Late assignments will only be marked at the discretion of the professor in cases where there were extenuating circumstances.

4.   Any assignment/projects submissions, deemed to be copied, will result in a zero grade being assigned to all students involved in that particular incident.

5.   It is the responsibility of the student to ask the professor to clarify any assignment requirements.

6.   The professor reserves the right to modify the assessment process to meet any changing needs of the class.

VII.   SPECIAL NOTES:

Communication:
The professor reserves the right to use tools other than **WebCT/LMS ,** such as
Microsoft Outlook, for the primary channel of communication.

Attendance:
Sault College is committed to student success. There is a direct correlation
between academic performance and class attendance; therefore, for the benefit
of all its constituents, all students are encouraged to attend all of their scheduled
learning and evaluation sessions. This implies arriving on time and remaining for
the duration of the scheduled session. *It is the departmental policy that once the
classroom door has been closed, the learning process has begun. Late arrivers
may not be granted admission to the room.*

Absences due to medical or other unavoidable circumstances should be
discussed with the professor, otherwise a penalty may be assessed. The penalty
depends on course hours and will be applied as follows:

Course Hours	Deduction
5 hrs/week (75 hrs)	1.0% /hr
4 hrs/week (60 hrs)	1.5% /hr
3 hrs/week (45 hrs)	2.0% /hr
2 hrs/week (30 hrs)	3.0% /hr

Absentee reports will be discussed with each student. Final penalties will be
reviewed and assessed at the discretion of the professor.

VIII.   COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this
course outline.