

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: INTRODUCTION TO COMPUTER APPLICATIONS

CODE NO.: CET 110

PROGRAM: SCHOOL OF ENGINEERING TECHNOLOGY

SEMESTER: ONE or TWO

REVISION DATE: DECEMBER 29, 1993

AUTHOR: PETER SAVICH

PREVIOUS COURSE OUTLINE

DATE: AUGUST 24, 1993

PREVIOUS AUTHOR: PETER SAVICH

APPROVED:

DATE:

DEAN

LP Chagnon

DEAN

DATE

94-01-19

DATE

*MB
Jan 19/94.*

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

C O U R S E O U T L I N E

LENGTH OF COURSE: 3 HOURS PER WEEK FOR 16 WEEKS
(1 HOUR THEORY CLASS PER WEEK & 2 HOUR LAB
CLASS PER WEEK)

PREREQUISITES: NONE

I. PHILOSOPHY/GOALS

This is an introductory computer course for students enroled in programs within the **School of Engineering Technology**, other than the C.E.T. Program. The goal of this course is to help the student understand more about personal computers. This course provides the introduction to some of the terms and concepts that will be discussed more in depth, in later courses, specific to the students' program. Within this course, the student will learn what makes up the basic physical parts of the computer, what software is, and how computers process information.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

II. Student Performance Objectives

At the end of this course the student will:

1. Define the terms hardware and software, distinguish between operating system software and application software, and identify and discuss the four elements in the flow of information in a computer: input, processing, output, and storage.
2. Appraise the utility of some of the software application programs available for the IBM PC microcomputer and compatibles.
3. Demonstrate basic skills with the operating system for personal computers: MS DOS ver 5.0

COURSE NAME:

COURSE CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

4. Prepare sample engineering reports using representative software applications such as WordPerfect 5.1 for DOS (word processing package), and QuattroPro (spreadsheet package).

5. Time permitting, program using Qbasic (programming language).

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

III. Topics to be covered:

Module 1 Computers Simplified textbook

1. Getting started: hardware and software, how computers work.
2. The basic computer: cases, expansion cards, power supply.
3. Input/Output: keyboard, mouse, joystick, video adapter and monitor, printer, modem, scanner, soundboard.
4. Processing: memory, central processing unit.
5. Storage: how files are stored, hard disk drive, floppy disk drive, CD-ROM drive, tape backup unit.
6. Portable Computers: screens, expansion, batteries and power management, microprocessors, hard drive and memory.
7. Operating Systems: MS-DOS, Windows, and OS/2
8. Application software: wordprocessing, spreadsheets, databases, desktop publishing.
9. Networking: common network terms, network additions, bus, token-ring, star.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

III. Topics to be covered (cont'd):

Module 2 Wordperfect version 5.1 for DOS textbook

1. Help: global help, context sensitive help.
2. Pull Down Menus
3. Create and edit a document: start a document, save and name a document, retrieve a document, cursor control, insert or typeover text, delete text.
4. Move, copy, delete, and restore text.
5. Format your documents: setting margins, setting tabs, indent text, modify text, control text.
6. Check your documents: search, replace, and spellcheck.
7. Print your documents: select paper and form sizes, view document, print displayed document.
8. Manage your documents: delete/move or rename/print/look, other directory/copy/name search.
9. Create tables using the table editor.
10. Create equations using the equations editor.
11. Import spreadsheet tables and graphs into wordperfect.
12. Use reveal codes to remove unnecessary hidden code.
13. Temporarily leave wordperfect and "go to dos" and complete dos commands such as: tree; dir; chkdsk, format.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Module 3 Lotus 123 for DOS (release 2.3) textbook

1. Getting Started
2. Enter data: worksheet navigation, enter labels, enter numbers and formulas, specify range, enter functions.
3. Save and open worksheets: files and directories, create a directory, change a default directory, save a worksheet, the viewer Add-in, retrieve a file.
4. Move and copy data: move data, copy data, relative reference, and absolute reference.
5. Rows and columns: erase data, change row height, change column width, and insert/delete rows and columns.
6. Change data appearance: format values, align labels.
7. Create a graph: create a graph, change graph type, add X-axis labels, add a title, add a legend, add grid lines, add graph to worksheet, and re-size a graph.
8. Print: print worksheet, preview worksheet, and change page setup.
9. Print graphs produced in "123" using Lotus123's "printgraph" sub-menu.
10. Print graphs produced originally using Lotus123 by importing the graphs into a wordperfect document, then printing the wordperfect document.

COURSE NAME:

COURSE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Module 4 MS-DOS 5.0 textbook

Section I: Using the command prompt

1. Getting started: using this guide, introduction to MS-DOS 5.0
change date or time, specify drives and directories, internal and external commands, and help facility.
2. Managing your directories: files and directories, make directory, change directory, remove directory, and tree command.
3. Managing your files: directory, sort files, copy files, rename files, delete files, undelete files, type files, print files, and edit files.
4. Managing your floppy disks: 3.5" and 5.25" floppy disks, format and diskcopy commands.
5. Managing your hard disk: backup, restore, xcopy, and check disk commands.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Section II: Using the MS-DOS Shell

1. Getting started: start the MS-DOS shell, select commands, change screen mode, change color scheme, and help facility.
2. Managing your directories: change disk drives, change directories, create directories, expand or collapse directory levels, delete directories, and show information.
3. Managing your programs: start a program, switch between programs, and quit the MS-DOS shell.
4. Managing your files: change views, select multiple files, search for files, sort files, copy or move files, rename files, and delete files.
5. Disk utilities: disk copy, backup fixed disk, restore fixed disk, format and undelete.

COURSE NAME: 000

CODE NO.: 00000

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Module 5 (time permitting) Qbasic

1. The twelve most frequently used instructions, and some useful arithmetic functions: square root, trig functions, and boolean algebra.
2. The pull down menus of Qbasic, and the function keys.
3. Sample programs to calculate area of a rectangle using the let statement, the input statement, and the read statement.
4. Data types supported by Qbasic and the variable ending requirements.
5. The instructions used for loop control: goto; if, for; and next.
6. Arithmetic order of operations in Qbasic.
7. Improving the output display in Qbasic by writing programs that use the print using statement.
8. Run-time error messages.
9. Dimension statements and arrays.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

IV. Learning Activities / Required Resources

Module 1: Computers simplified

At the end of this block the student shall be able to:

chapter 1

1. Define the terms hardware and software.
2. Distinguish between "operating system software" and "application software".
3. Identify and discuss the four elements in the flow of information in a computer: input, processing, output, and storage.

chapter 2

4. Describe the two main types of cases: Desktop and Tower.
5. Identify the major components of the computer.
6. Define what an expansion card is and describe how it works with a computer.
7. Name the different types of expansion slots.
8. Explain different ways to protect your equipment.

chapter 3

9. List several input devices and explain how they work.
10. Explain the function of many of the computer keyboard's keys.
11. List several output devices and explain how they work.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

12. Define what a video adapter is and how graphics are displayed.
13. Describe the differences between different types of monitors.
14. Identify two type of printers and describe the differences between them.
15. Describe how a printer's speed and quality are measured.
16. Explain what modems are used for.
17. Define what a scanner is and what it does.

chapter 4

18. Define memory
19. Discuss how memory works and how it is memory.
20. Define and discuss conventional and extended memory.
21. Explain the three factors that affect CPU performance: speed, type and generation.
22. Define the differences between Intel's CPU chips.
23. Discuss what cache memory is and how it impacts the speed of a computer.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

chapter 5

24. Discuss how data is stored and organized.
25. Define hard disk and explain how it works.
26. Explain how cache speeds up processing.
27. Discuss storage and speed as they relate to choosing a hard drive.
28. Define floppy disk drive.
29. Distinguish between and list characteristics of two types of disk drives and disks.
30. Explain what CD-ROM drives and disks are and discuss several CD-ROM applications.
31. Explain the function of backup.

chapter 6

32. Identify the features of a portable computer.
33. Identify the types of screens used for portable computers.
34. Discuss how to expand the capabilities of your portable computer.
35. Discuss the advantages of "docking" a portable computer to a full-sized computer.
36. Discuss the "tricks" a portable computer uses to conserve power.
37. Explain how a portable computer's CPU, storage, and memory differ from a full-sized computer's.

COURSE NAME: 000

COURSE CODE NO.: 000000

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

chapter 7

38. Define what an operating system is and what it does.
39. Describe similarities and differences between entering commands using the MS-DOS command prompt and the MS-DOS Shell.
40. Describe six characteristics of the Microsoft Windows operating system.
41. Discuss the differences between MS-DOS, Windows, and OS/2.

chapter 8

42. Describe some of the common characteristics of word processing software.
43. Describe some of the common characteristics of spreadsheet software.
43. Describe some of the common characteristics of data base software.
44. Differentiate between the different types of databases.
45. List some common desktop publishing features.

COURSE NAME:

COURSE CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

chapter 9

46. Define local area networks (LAN) and wide area networks (WAN).
47. Discuss how a computer is added to a network.
48. Identify the role of the "Network Administrator".
49. List and define some common network terms.
50. Identify the types of network layouts.

Module 2: **Wordperfect Version 5.1**

At the end of this block the student shall be able to:

1. Create and edit a document, then save the document in a particular drive, sub-directory, and filename.file extension
2. Distinguish between: retrieve a document, look at a document, and view a document.
3. Identify the status line in the main editor.
4. Set a block and then move a block of text when in the main editor or the table editor. Using the block feature, centre, bold, underline or delete existing text.
5. Format your documents: setting margins, setting tabs, indent text, modify text, control text.
6. Use spellcheck to check documents for spelling mistakes.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

7. Use the equations editor to create a name or title in large setpoint and save as an .equ file.
8. Use list files feature to manage your documents: delete/move or rename/print/look, other directory/copy/name search.
9. Create tables using the table editor.
10. Create equations using the equations editor.
11. Import spreadsheet tables and graphs into wordperfect.
12. Use reveal codes to remove unnecessary hidden code.
13. Temporarily leave wordperfect and "go to dos" and complete dos commands such as: tree; dir; chkdsk, format.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Module 3 Lotus 123 for DOS (release 2.3) textbook

At the end of this module the student should be able to:

1. Within the "ready" mode, enter data, perform worksheet navigation, enter labels, enter numbers and formulas, specify range, and enter functions.
2. Use the "file" sub-menu to change the default directory, save a worksheet, and retrieve a worksheet file.
3. Use the "system" sub-menu option to temporarily leave Lotus123 and create a directory.
4. Use the "move" and "copy" sub-menu to move and copy data.
5. Use the "edit" function key and alter a formula in a given cell.
6. Differentiate between relative reference, and absolute reference.
7. Use the "worksheet" sub-menu to erase the current worksheet data, change row height, change column width, and insert/delete rows and columns.
8. Use the "range" sub-menu to change data appearance: format values, align labels, and erase a range of data.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

9. Use the "graph" sub-menu to create a graph, change graph type, add X-axis labels, add a title, add a legend, add grid lines, add graph to worksheet, and re-size a graph.
10. Use the "print" sub-menu to print a worksheet, preview a worksheet, and change page setup.
11. Print graphs produced in "123" using Lotus123's "printgraph" sub-menu.
12. Print graphs produced originally using Lotus123 by importing the graphs into a wordperfect document, then printing the wordperfect document.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Module 4 MS-DOS 5.0 textbook

At the end of this block the student should be able to:

1. Use the command prompt of MS-DOS 5.0 to change date, time, and specify drives.
2. Manage your directories: files and directories, make directory, change directory, remove directory, and tree command.
3. Manage your files: directory, sort files, copy files, rename files, delete files, undelete files, type files, print files, and edit files.
4. Manage your floppy disks: 3.5" and 5.25" floppy disks, format and diskcopy commands.
5. Describe the principles involved in managing your hard disk: backup, restore, xcopy, and check disk commands.
6. Use MS-DOS shell to select commands, change screen mode, change color scheme, and access the help facility.
2. Manage your directories: change disk drives, change directories, create directories, expand or collapse directory levels, delete directories, and show information.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

3. Manage your programs: start a program, switch between programs, and quit the MS-DOS shell.
4. Manage your files: change views, select multiple files, search for files, sort files, copy or move files, rename files, and delete files.
5. Discuss how and when to use the disk utilities: disk copy, backup fixed disk, restore fixed disk, format and undelete.

Module 5 (time permitting) Qbasic (14 page handout provided)

At the end of this module the student should be able to:

1. Write, save and run a program that solves an algebraic expression, such as the program listed on page 13 of the Qbasic handout.
2. Verify the display output by repeating the process of solving the algebraic expression but this time using Lotus123. Produce a graph in Lotus123.
3. Import the table and the graph originally produced in Lotus123 into wordperfect and use the equations editor to reproduce the algebraic expression in large setpoint.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

V. Required Student Resources

1. Four Module textbooks by Maran Graphics:

Computers Simplified

WordPerfect Version 5.1 for DOS

Lotus Release 2.3 for DOS

MS-DOS 5.0 Simplified User Guide for Microsoft

Authored by: Richard and Ruth Maran

Published by: Prentice Hall Canada

2. At least five (5) 3.5" high density floppy disks.
Students may wish to also purchase "double density"
5 and 1/4" disks for labs in room A2020. Unless a student
has a "high density" disk drive at home, he/she should
not buy the "high density" 5 and 1/4" disks. **Using a
"high density disk" in the "low density drives" is not
reliable.**

additional qbasic textbooks (not required because of cost)

3. "Qbasic by Example"

by Greg Perry, Que Publishing Co.

4. "Using_Qbasic" by Phil Feldman, Tom Rugg

Que Publishing Co.

COURSE NAME:

COURSE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

VI. Special Notes

1. Students with special needs are encouraged to discuss required accommodations confidentially with the instructor.
2. Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

The architectural, civil, and mechanical students will discover that much of their required course work within their programs in later semesters will require IBM PC microcomputer work. For this group, historically, the most frequently used application program other than Wordperfect or Autocad has been the Lotus 123 spreadsheet software. Thus, the use of the spreadsheet program "QuattroPro", which is equivalent to Lotus 1-2-3", will be studied in greater depth for these students.

The electrical, electronic, aviation students will also discover that much of their required course work within their programs in later semesters will assume the students have a basic familiarity with computers. For this group, historically, the most frequently used application program other than Wordperfect or Autocad has been very specific software such as Mathcad, flight simulator, etc. As a consequence basic software will be studied in greater depth for these students.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

VII. Method(s) of Evaluation

1. Tests

The student will be assessed through a series of three (3) written tests. Assignments must be completed and demonstrated and mark recorded before these tests will be given. Thus, individual students will be completing tests before other students depending upon mastery of the learning outcome, or time constraints. Students, are encouraged to offer "peer tutoring" to each other within the class, with significantly advanced skills students helping others less advanced in the class. Some limitations may be imposed during a testing session but the peer tutor is encouraged to be a participant when his/her students actually perform the "hands-on" test. All test questions are individualized and are of the same complexity, with the marking scheme and objectives being tested given out before initiating the test.

Each test will be weighted to 20% of the final mark. In all tests the testing concept is open book, using a computer, perform some tasks previously demonstrated in the assignment(s). All tests are designed to be completed in less than 1 hour.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

The concept of "mastery learning" has been incorporated into the evaluation system of this course. This implies that the student may contract for an A+, or A final grade. Thus, failing one particular test, means re-doing the test again, the questions altered, but testing or measuring the same learning outcomes. The test will be re-given when the student is ready. A formal "peer tutoring" situation may constitute being more "ready" for a test. In the recent past, students because of high demands on lab time and teacher availability, have learned more from "peer tutoring" than in the past.

A re-write for a failing student is possible only if certain conditions are met. The student must have a formal peer tutoring arrangement made and verified. If the tutor is a classmate then a 100% performance during the re-write will translate into a further bonus of 2% for the test.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

The entire class should have completed tests by certain milestone dates. The tentative dates for completion of the preceding assignments and tests are for the lab periods during the week of:

Test	Tentative Date	Concepts
1	Feb 14 - 18/94	Computers Simplified, MS DOS & Wordperfect 5.1
2	March 21 - 25/94	Wordperfect & Spreadsheet
3	April 18 - 22/94	Wordperfect, Spreadsheet & Qbasic

Re-writes of tests

A re-write for a failing student is possible only if certain conditions are met. The student must have a formal peer tutoring arrangement made and verified. If the peer tutor is a classmate then a 100% performance during the re-write will translate into a further bonus of 2% for the peer tutor.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

2. Quizzes

The student will be assessed through a series of unannounced quizzes. The total weight of these quizzes are not to exceed 10% of the final mark. The student should expect an "easy" 2 minute, one or two word answer quiz every lecture. The only way to get permission to write a missed quiz is to agree to attend an extra hour outside of class to make up for the missed hour. In the past, students volunteered to attend another section's lab time and provide peer tutoring.

3. Assignments

The student will be assessed through a series of lab assignments. Collectively these assignments will be weighted to 30% of the final mark. Required assignments must be completed before a particular test may be written.

4. Attendance

The student attending 32 out of the 34 lectures and labs offered, will receive a 2% bonus for excellent attendance.

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

Summary of Final Mark

1.	Tests	60%
2.	Quizzes	10%
3.	Assignments	30%
		100%
4.	Attendance	2% bonus only

Course Grading Scheme

A+	90+	outstanding achievement
A	80 - 89	above average achievement
B	70 - 79	average achievement
C	55 - 69	satisfactory achievement
U		unsatisfactory given at midterm only
S		satisfactory given at midterm only
R		repeat
X		a temporary grade that is limited to instances where special circumstances have prevented the student from completing objectives by the end of the semester. An "x" grade must have the Dean's approval and has a maximum time limit of 120 days.

COURSE NAME:

COURSE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

3. 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 the student's performance warrants it. Attendance and assignment completion will have a bearing on whether upgrading will be allowed. A "repeat" grade on all tests will remove the option of any upgrading and an "r" grade will result. The highest on a re-written test or assignment will be 56%.

The method of upgrading is at the discretion of the teacher and may consist of one or more of the following options:

- assigned make-up work
- re-doing projects
- re-doing of tests
- writing of comprehensive supplemental examination
- additional assignments

COURSE NAME:

CODE NO.:

INTRODUCTION TO COMPUTER APPLICATIONS

CET 110 - 3

VIII. Additional Resource Materials (available in college bookstore, Audiovisual Center, and/or library)

There are many other books on basic programming, wordperfect, lotus 1-2-3, and MS DOS operating system.

1. Sault College Software Support:

- MS DOS notes
- wordperfect 5.1
- Advanced wordperfect 5.1
- Lotus notes

2. Sault College bookstore sells the popular series:

- MS DOS For Dummies
- Wordperfect For Dummies
- Lotus 123 For Dummies

COURSE NAME:
INTRODUCTION TO COMPUTER APPLICATIONS

CODE NO.:
CET 110 - 3

3. Video Tapes:

Six Part TVO Series: Bits and Bytes
Spreadsheets
Advanced Spreadsheet and Programming
Word Processing 1
Word Processing 2
Word Processing 3
Computer Applications/Software Introduction
Applications
Electronic Publishing

Periodicals: PC Mag, Byte Mag, Computing Canada
Computers in Education
Computers in Nursing

