SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Outline: INTRODUCTION TO DATA PROCESSING

Code No.: EDP 100-5

Program: BUSINESS COMMON

Semester: ONE

Date: SEPTEMBER 1990

Previous Outline Dated: JUNE 1988

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New: _____ Revision: X

APPROVED: _____ Sept '90
Dean, Business & Hospitality — Date

~~Introduction to Data Processing~~

Required Text: Introduction to Computers and Information Processing, by Long, (2nd edition)

Purpose

This course is designed to provide an introduction to computers and data processing. Students will learn about components of a computer system, how a computer functions, how it is controlled, and how it is applied to the solution of business and related problems in modern society. Also included are hands-on introductions to computer programming using the BASIC language, word processing using Word-11 and Spreadsheets using 20-20.

STUDENT EVALUATION

The student's final grade will consist of the following components:

Tests (3 x 25%)	75%
Assignments	20%
Class involvement	5%
	100%

ASSIGNMENT DEADLINES

Assignments must be handed in **on time**, otherwise they are subject to **grade of zero.**

GRADING

A+	=	90%	to	100%
A	=	80%	to	89%
B	=	70%	to	79%
C	=	55%	to	69%
R	=	0%	to	54%

Introduction to Data Processing

PART A

The following modules pertain specifically to the theoretical concepts discussed in the course.

Module 1

This module gives an overview of what computers are, what computers do, how computers are put to use, and the impact computers are currently having on the people and organizations in our society.

Objectives

When this module is completed the student should be able to:

1. understand the need for computer literacy
2. define the term "computer" and outline some of its capabilities
3. outline the activities involved in data processing and the data processing operations that computers can perform
4. identify the hardware components in a basic computer system and describe the functions of each component
5. describe some of the advances that have been made in computer hardware and software
6. outline ways in which computer systems may differ, and discuss some limiting factors in their use
7. describe how data are organized into logical groupings to facilitate computer processing
8. identify some common computer applications, and discuss how pre-written software packages can be used to support such applications
9. differentiate between interactive and batch processing, and between direct and sequential files
10. outline a few of the characteristics of single-function and integrated software packages, and explain the steps that are followed to develop custom-made software
11. describe some of the developments that have taken place in the field of artificial intelligence
12. outline some of the positive and negative effects that computer usage may have on individuals
13. discuss the rapid changes taking place in the information processing industry, and explain how computer usage can both benefit and endanger other organizations
14. summarize the optimistic and pessimistic views about the future impact of the computer systems on people

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Module 2

This module discusses how computers and their components work, and, how data is input, processed, and output.

Objectives

When this module is completed the student should be able to:

1. explain how primary storage locations are identified
2. discuss the capacity of storage locations, understand how data are coded in storage, and identify the types of storage components found in the processor unit
3. explain the general functions of the arithmetic-logic and control sections in the processor unit
4. describe the sources of input data, the location of data entry activities, and the methods for entering data in interactive and batch processing applications
5. explain the importance of input accuracy
6. outline the characteristics and applications of the several types of devices used for online data entry
7. identify the media and devices used for offline data entry
8. identify the elements in the storage hierarchy and discuss the factors to be considered in storage selection
9. summarize the characteristics of those secondary storage devices that provide quick and direct access to stored records and those that store data that are sequentially organized and processed
10. summarize the types of computer output that may be produced and the devices used to prepare this output

Module 3

This module will discuss two areas of interest.

a) the types of hardware and software common to personal computers and systems most likely encountered.
b) data communication systems and their use with information systems.

Objectives

When this module is completed the student should be able to:

1. explain what is meant by the term "personal computer"
2. describe some general hardware characteristics and software considerations applicable to personal computers

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3. discuss some functions that application packages can perform in homes and offices
4. understand the converging computing/communications setting
5. describe the data transmission techniques and channels
6. outline the components used to coordinate a communications network
7. give examples of information systems supported by data communications

Module 4

This module discusses the use and selection of pre-written, single-function and integrated software packages, the procedures required to develop custom-made systems, and, the practices and languages used to prepare application programs for these systems.

Objectives

When this module is completed the student should be able to:

1. classify the types of pre-written software packages that are available
2. describe and give examples of some popular types of single-function application problems
3. explain the reasons for the integration of application programs and outline the forms of integration used
4. outline the role of operating system software and describe some of the tasks performed.
5. explain the need for custom-made systems and give examples of systems with customized elements
6. summarize system design issues and note the specifications produced during the system design step
7. identify and discuss several of the practices followed during program preparation
8. outline the features and uses of machine languages, assembly languages, and high-level languages
9. summarize the steps that are taken during software implementation and maintenance

Introduction to Data Processing

The following modules pertain specifically to the VAX 11/780 computer and to the VAX BASIC programming language and will be discussed concurrently with the theoretical concepts in **PART A.**

Module 1

This module discusses the use of the VAX 11/780 computer and the concepts surrounding it.

Objectives

When this module is completed the student should be able to:

1. identify the equipment they will be using
2. describe the term "workspace"
3. sign-on and sign-off computer
4. change his/her password
5. use the EDT editor to create, save, retrieve and modify documents

Module 2

This module discusses the programming process and the VAX BASIC programming language.

Objectives

When this module is completed the student should be able to:

1. define the programming process and understand programming analysis concepts
2. construct a flowchart to meet a set of problem specifications, and outline the benefits and limitations of flowcharts
3. create the logic needed to process multiple records and understand the use of accumulators and counters
4. utilize structured logic to solve programming problems
5. identify alternative analysis tools that may be used to replace or supplement flowcharting
6. identify and discuss the parts of a BASIC statement

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7. understand and use the BASIC statements to write programs
8. write programs to incorporate input operations, calculations, decisions, loops, accumulators, counters, and output operations.

Module 3

This module covers the use of Word-11 Word Processing and 20-20 Spreadsheet software on the VAX 11/780.

Objectives

When this module is completed, the student should be able to:

1. Describe the main features and capabilities of word processing and spreadsheet software.

2. Use Word-11 software to create, file, edit, delete, and modify documents.

3. Use 20-20 software to enter text, values formulas and functions into a spreadsheet.

4. Use 20-20 software to retrieve, modify, print and delete spreadsheets.

REFERENCE SUMMARY

PART A

Module 1 - Chapters 1, 2, 3, 11
Module 2 - Chapters 4, 5, 8
Module 3 - Chapters 6, 9
Module 4 - Chapters 10, S1

PART B

Module 1 - lecture notes
Module 2 - Chapter 7
- Basic
- lecture notes
Module 3 - lecture notes