

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: PROGRAMMING LANGUAGES

CODE NO.: EDP318-6 SEMESTER: TWO

PROGRAM: COMPUTER PROGRAMMER

AUTHOR: DENNIS OCHOSKI

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DEAN, SCHOOL OF BUSINESS &
HOSPITALITY

COURSE NAME

COURSE CODE

LENGTH OF COURSE: Five periods per week for one semester

TEXTS: Vax-Basic with Structural Problem Solving, 2nd Edition by David G. Weinman and Barbara L. Kurshan
Structured Cobol Programming, 7th Edition by Stern and Stern

PURPOSE: This course will provide students with an opportunity to develop their computer skills by introducing them to program development and structured programming techniques. This exposure will provide a foundation for more advanced study in the following semesters.

The course involves theory related to programming and application of this theory will be implemented using two high level programming languages.

COURSE OBJECTIVES:

1. learn problem-solving techniques and apply them to programming
2. learn and understand the program development process
3. develop logic skills
4. develop solutions using the Basic programming language
5. develop solutions using the Cobol programming language

PART 'A': The following modules pertain to program development and structured programming techniques.
(introduction and lecture notes)

Module 1:

Objectives:

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

- 1) differentiate between high level languages and machine language
- 2) understand the basic make-up of a computer program and state its purpose
- 3) explain why there is a need for custom-designed programs
- 4) list the steps involved in the program development process
- 5) understand the main problem of computer programming addressed by structured programming
- 6) state the meanings of program "reliability" and "readability"
- 7) explain how a hierarchy chart relates to problem-solving
- 8) state the purpose of pseudo code and why it is useful
- 9) state the difference between an interpreter and a compiler
- 10) differentiate between syntax errors and logic errors
- 11) differentiate between a source program and an object program (compiling, linking, and running a program)
- 12) explain the importance of program documentation

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PART 'B': The following modules pertain specifically to the Basic programming language and expand on the concepts of the language discussed in the first semester.

Module 1: Review of the Basic Programming Language introduced in the first semester
(chapters 1, 2, 3)

Objectives:

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

1. Basic coding conventions
2. the use of data types (numeric, alphanumeric)
3. the use of arithmetic expressions
4. input and output statements
5. the concept of variables and constants
6. the use of conditional statements

Module 2: More Advanced Conditional Statements and Program Looping
(chapters 4, 5, 6)

Objectives:

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

1. implement conditional statements such as the IF and IF-THEN-ELSE and SELECT/CASE statements

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Module 2: (cont'd)

2. use logical and relational operators to check for specific conditions
3. define the term "collating sequence"
4. apply the concept of looping using the various forms of looping structures such as the FOR/NEXT, WHILE/NEXT and UNTIL statements
5. use the PRINT USING statement to format output

Module 3: **Modular Programming**
(chapter 6)

Objectives:

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

1. apply the use of sub-routines to incorporate structural programming
2. use structure charts to determine how programs should be modularized
3. list several advantages of modularizing programs

MODULE 4: **Arrays**
(chapter 7 - pages 136-151)

Objectives:

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

1. explain and use subscripts
2. use the DIM statement to define arrays
3. manipulate one-dimensional arrays

MODULE 5: **Records and Files**
 (chapter 8)

Objectives:

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

1. define records and use them in programs
2. explain the relationship between files, records, and fields
3. create, read from and write to a sequential file

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PART 'C' The following modules pertain specifically to the Cobol programming language

Module 1: Background and Introduction to Cobol

Objectives:

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

1. understand the purpose and origin of the COBOL programming language
2. understand the basic structure of a COBOL program
3. understand COBOL's general coding conventions and format rules

Module 2: Basic Cobol Elements Relating to the Divisions Within a Cobol Program and Data Definition

Objectives:

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

1. identify the four divisions of a COBOL program, the A and B margins, comment lines, and paragraph names

2. describe the purpose of and code of the Identification Division and the Environment Division
3. understand the rules for forming data-names and constants in COBOL
4. describe how input and output files are defined and described in the Data Division
5. understand how storage can be reserved for fields not part of input or output such as constants and work areas

Module 3: Development of the Procedure Division to Process Data

Objectives:

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

1. access input and output files
2. understand MOVE operations and the various options of the MOVE statement
3. understand the flow of control from one module to another using the various options of the PERFORM statement
4. understand the ways in which arithmetic may be performed in COBOL
5. edit output for report purposes
6. use the IF statement options for processing conditions

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STUDENT EVALUATION:

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

Tests	- Basic	(2 x 15%)	30%
	- COBOL	(2 x 15%)	30%

Assignments	- Basic	54 x 5%)	25%
	- COBO	(3 x 5%)	15%

100%

A+	90-100%
A	80- 89%
B	70- 79%
C	60- 69%
R	REPEAT - under 60%

SPECIAL NOTES:

1. Students with special needs due to such things as physical limitations, visual impairments, hearing impairments or learning disabilities are encouraged to discuss required accommodations, confidentially, with the instructor.
2. There will be no re-writes in this course except in situations out of the control of the student (such as illness, urgent family matters, etc.) in which a re-write may be issued at the discretion of the instructor.
3. Assignments received after the due date are subject to a grade of zero except in situations as specified in #2 above.