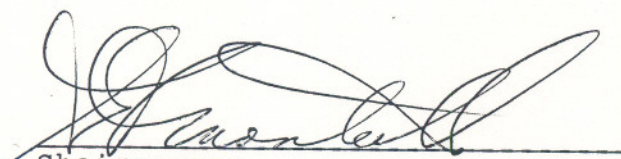


SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Outline: INTRO TO 4TH GENERATION LANGUAGE "POWERHOUSE"
Code No.: EDP 227
Program: PROGRAMMER/PROGRAMMER ANALYST
Semester: FOUR
Date: JANUARY, 1987
Author: W. DEBRUYNE

New: _____ Revision: X

APPROVED: 
Chairperson

86-06-11
Date

INTRO TO 4TH GENERATION LANGUAGE

EDP 227

Course Name

Course Number

Prerequisite: EDP 112 COBOL I

Course Synopsis:

The course is designed to demonstrate how fourth-generation languages make computing power accessible to any thinking person, without an extensive data processing training. The procedural and nonprocedural languages, the language for data processing professionals and languages for end-users, query languages and application generators will all be examined.

The course is designed to set the field of fourth-generation languages into perspective, discussing the mechanisms, uses, and future evolution of this new tool. The specific product that will be examined and referenced to POWERHOUSE developed by the COGNOS corporation.

Textbooks: "Fourth Generation Languages" by James Martin

MODULE DESCRIPTION:

MODULE 1 - overview of the fourth generation language "POWERHOUSE", and its component parts.

- examine the need for the revolution from third generation languages to fourth generation languages.
- compare procedural languages.
- examine the various categories of languages.

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

1. understand the evolution of 4GL's
2. distinguish between procedural and nonprocedural languages
3. discuss limited functionality of 4 GL's
4. define monologue and dialogue programming
5. define the basic principles in the design of 4GL's
6. identify decision support tools
7. identify the various categories of users

8. identify properties of viable products for end user satisfaction
9. define basic characteristics of 4 GL's
10. identify properties and components of 4 GL's

MODULE 2 - Discuss the most effective types of use of 4 GL'S.

- Define a data dictionary within PHD. (record stuctures and internal documentation)
- Identify problems within the Data Processing environment.

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

1. identify PHD enlies and their attributes
2. use PHD screens
3. define data with PHD
4. define a data dictionary
5. identify the way PHD assists in prototyping methodologies
6. distinguish between logical and physical entities.
7. distinguish between menu and entry screens
8. enter dictionary definitions
9. find, change, delete, add entries to the data dictionary
10. manipulate the fundamental PHD screens
11. report contents of the dictionary
12. standardize applications and identify shortcuts to entering definitions
13. explain the file screen and specify file attributes

MODULE 3 - Examine the effects of 4GL's on Data Processing productivity.

- Use the screen generation facility QUICK, and the report generator QUIZ, of POWERHOUSE.

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

1. discuss the use of 4GL's
2. identify problems of computing as seen by users and management
3. identify the evolution of the information center
4. discuss the changes in the development life cycle
5. identify types of life cycles found
6. discuss the effects of the 4GL's on Data Processing production
7. identify characteristics of high-productivity development
8. discuss the use of natural English for queries
9. define the basic structure of a screen design
10. edit and validate data
11. place security on entry screens
12. control the visual appearance of the screen, including layout, highlighting, line drawing and data formatting option
13. show how to improve operator efficiency by repeating record layouts on the screen and by adding convenience options
14. design menu-driven systems
15. explain QUICK's counting, summing and balancing features
16. write procedures and modify procedures to process screens
17. operate QUIZ and show how to report any information contained on file
18. individually style reports
19. show how to include summary information in reports
20. manipulate subfiles

- MODULE 4 - Explore ways to help the analyst or end users proceed through the design process in a planned sequence. (methodologies)
- Build a small system using the Powerhouse tool.
 - Examine selection criteria for a 4th GL.
 - Explore the future evolution of computer languages.

At the end of this module students will be able to:

1. describe the importance of menu driven systems
2. define the documentation process with 4GL's
3. describe the selection criteria for 4GL's
4. describe the environment of combining 3rd GL's and 4GL's
5. outline checklists for selection of query languages, report generators, graphics, linkages to other systems
6. explain the future evolution of computer languages

vi) Course Role within the program.

The course will demonstrate to the student the new revolution taking place in computer languages. The student will have already examined a few well established third generation languages, and will be able to compare the difference between the two generations, and realize the need to be able to instruct computers much more easily and quickly than in the past.

vii) Time Frames

- WEEK 1 - INTRODUCTION
- CHAPTER 1 FOURTH-GENERATION LANGUAGES
 - CHAPTER 2
- WEEK 2 - DISCUSSION OF CHAPTER MATERIAL
- POWERHOUSE DEMONSTRATION
 - TEACHER NOTES
- WEEK 3 - WALK THRU DEVELOPMENT OF RECORD STRUCTURES AND THEIR RELATIONSHIP TO THE DATA DICTIONARY.
- DEVELOP AN ENTRY SCREEN USING THE QUICK FACILITY OF POWERHOUSE
- WEEK 4 - ASSIGNMENT #1
- DESIGNING REPORTS VIA THE REPORT GENERATOR QUIZ
 - CHAPTER 3

- WEEK 5 - REVIEW
 - TEST 1
 - DISCUSSION

- WEEK 6 - EXAMINE PROCEDURAL CODING IN POWERHOUSE
 - CHAPTER 4
 - TAKE UP TEST

- WEEK 7 - PROJECT ASSIGNED
 - DISCUSSION
 - ASSIGNMENT #1 DUE

- WEEK 8 - ASSIGNMENT #2
 - CHAPTER 10
 - REVIEW

- WEEK 9 - TEST #2
 - ASSIGNMENT/PROJECT REVIEW WEEK (make sure all students are moving in the same direction and clear-up any problems)
 - INTERVIEW INDIVIDUAL STUDENTS

- WEEK 10 - CHAPTER 19
 - DISCUSSION
 - USING PHD AS A DICTIONARY MANAGER, EXPLORING THE HIERARCHICAL STRUCTURING OF MENU AND ENTRY SCREENS
 - TAKE UP TEST

- WEEK 11 - SPECIAL SCREEN FEATURES
 - CONTROL BREAKS
 - ASSIGNMENT #2 DUE

- WEEK 12 - ASSIGNMENT #3
 - PROJECT DUE

- WEEK 13 - CHAPTER 20
 - DISCUSSION

- WEEK 14 - LAB WEEK

- WEEK 15 - REVIEW
 - ASSIGNMENT #3 DUE

- WEEK 16 - SUMMARY/CONCLUSION
 - TEST 3

vii) STUDENT EVALUATION

a) The students final grade will be determined from the following components:

TESTS	3 @ 18% = 54%
PROJECTS	1 @ 10% = 10%
ASSIGN	3 @ 10% = 30%
PARTICIPATION/ATTITUDE	= 6%
	100%

b) Grading "A" = 80 - 100%
"B" = 70 - 79%
"C" = 55 - 69%
"D" = 0 - 54%

NOTE: Students are expected to attend class regularly and to participate in class discussion. They are also expected to treat their peers and instructors in a professional business like manner during class time. Late assignments are subject to a zero grade unless the student has PRIOR permission to had the assignment in at a later date from the instructor.