SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: **Fourth Generation Languages**

Course No.: **CET 320**

Program: **COMPUTER ENGINEERING TECHNOLOGY**

Semester: **SIXTH (6)**

Date: **MAY 1994**

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Previous Outline
Dated: **MAY 1993 (Frank Turco)**

APPROVED: _____   _94-06-24_
Dean   Date

Fourth Generation Languages   CET 320

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

PREREQUISITES: CET301 & CET311 or Permission of the
                      Instructor Pending Completion of these
                      courses.

TOTAL CREDIT HOURS: 3

I.   PHILOSOPHY/GOALS

By the 1980's, fourth generation languages were gaining
popularity and were an integral part of the changes in
software development methodologies. The ever increasing
backlog and demand for improved and quicker software
development caused developers to search for ways to be more
productive. Fourth Generation Languages (4 GL's for short)
are some of the development tools that allow for a shorter
development life cycle. Many organizations use 4 GL's to
shift the burden of software development from the
programmers to the end users themselves. These
organizations allow end users to develop their own systems.
this is commonly referred to as "End User Computing".

The objective of this course is to provide students with an
opportunity to understand what 4GL's are and work with
representative 4GL's. In particular we will be working with
PARADOX and POWERHOUSE.

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II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES)

Upon successful completion of this course the student will:

1. Describe the background related to 4 GL's.

2. Complete the tutorial exercises in Paradox.

3. Build a medium complexity application in Paradox.

4. Complete the tutorial exercises in Powerhouse.

5. Build a medium complexity application in Powerhouse.

6. Distinguish the various 4GL implementation considerations.

III. TOPICS TO BE COVERED

1. History of 4 GL's.

2. Paradox Programming.

3. Powerhouse Programming.

4. 4 GL Implementation Considerations.

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IV.   LEARNING ACTIVITIES/REQUIRED RESOURCES

1.0   BACKGROUND ON 4 GL'S

LEARNING ACTIVITIES:

1.1   Describe the history of 4 GL's.

1.2.   Demonstrate the nature and purpose of Fourth Generation Languages.

1.3.   Describe how 4GL's relate to "End User Computing" and what impact they have made to Information Services departments.

1.4.   Describe the features in most 4GL's.

1.5.   Define the advantages and disadvantages to 4GL's.

1.6   Differentiate the 4GL's SDLC versus the traditional SDLC.

1.7   Describe the various alternatives to 4GL's.

1.8   Discuss the impact of SQL on 4GL's.

REQUIRED RESOURCES

Class Discussions

Notes

Overhead Material

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2.0 PARADOX PROGRAMMING

LEARNING ACTIVITIES:

2.1. Describe what Paradox is and what it is not.

2.2. Create and maintain Paradox relations.

2.3. Design and build Forms and Reports in Paradox.

2.4. Assemble a variety of Queries through the use of Paradox's Query by Example (QBE).

2.5. Construct a medium complexity system with Paradox through the use of the PAL language.

REQUIRED RESOURCES

Paradox Tutorial Exercises in the Paradox Text.

3.0 Powerhouse Programming

LEARNING ACTIVITIES:

3.1. Describe what Powerhouse is and what it is not.

3.2. Create and maintain a Powerhouse Dictionary.

3.3. Apply the major components of Powerhouse.

3.4. Generate screens using QUICK.

3.5. Produce Reports using QUIZ.

3.6. Analyze a Powerhouse System.

3.7 Design and develop a medium complexity system with Powerhouse.

REQUIRED RESOURCES

Powerhouse tutorial exercises in the Powerhouse notes.

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4.0 4 GL Implementation Considerations

LEARNING ACTIVITIES:

4.1. Describe the impact of SQL on 4 GL's.

4.2. Describe the various technical implementation considerations and strategies for the databases used by 4GL's.

REQUIRED RESOURCES

Class Notes

Class Discussions

Overheads.

V.   EVALUATION METHODS:

Theory Tests	30%
Practical Tests	20%
Assignments and Lab Work	50%

The tentative breakdown is as follows:

2	Formal Theory Tests	at 15 %	each
2	Practical Tests	at 10 %	each
2	Assignments	at 25 %	each

Some minor modifications to the above percentages may be necessary. The instructor reserves the right to adjust the mark up or down 5% based on attendance, participation, leadership, creativity and whether there is an improving trend.

*   All Assignments must be completed satisfactorily to complete the course. Late hand in penalties will be 5% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.

*   The instructor reserves the right to adjust the number of tests, practical tests and quizzes based on unforseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.

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V. EVALUATION METHODS (CONTINUED)

GRADING DETAILS

1. TESTS

   Written tests will be conducted as deemed necessary; generally at the end of each block of work. They will be announced about one week in advance. Quizzes may be conducted without advance warning.

2. ASSIGNMENTS

   Assignments not completed by the assigned due-date will be penalized by 5% per day late. All assignments must be completed satisfactorily to complete the course.

3. GRADING SCHEME

A+	90 - 100%	Outstanding achievement
A	80 - 89%	Excellent achievement
B	70 - 79%	Average Achievement
C	55 - 69%	Satisfactory Achievement

   U   Incomplete:Course work not complete at Mid-term. Only used at mid-term.

   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 be authorized by the Chairman. It reverts to an R if not upgraded in an agreed-upon time, less than 120 days.

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V.   EVALUATION METHODS (CONTINUED)

4. UPGRADING OF INCOMPLETE

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 failing grade on all tests will remove the option of any upgrading and an R grade will result. The highest grade on re-written tests or assignments will be 56%.

Where a student's overall performance has been consistently unsatisfactory, an R grade may be assigned without the option of make-up work.

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 assignments, re-writing of tests, or writing a comprehensive supplemental examination.

VII.   REQUIRED STUDENT RESOURCES

TEXTBOOK:

1.   "PARADOX 4.5 FOR DOS" BY QUE

2.   "INTRODUCTION TO POWERHOUSE NOTES" BY COGNOS.

VIII.   ADDITIONAL RESOURCE MATERIALS

Additional reference material will either be given to the students or placed in the library for the student's use.

Instructor's Handouts, Guidance, and Material as it relates to the individual topics.

Use of research modes such as INTERNET, Library Data Base Searches, and articles.

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IX.   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.