

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

COURSE OUTLINE

Course Title: NUMERICAL ANALYSIS
Code No.: CET 221
Program: COMPUTER ENGINEERING TECHNOLOGY
Semester: 4
Date: JANUARY, 1985
Author: SAVICH/BLACK

New: X Revision: _____

APPROVED: *J.P. Arzuffo* _____
Chairperson Date

FORTRAN and NUMERICAL METHODS (CET 221)

COURSE OUTLINE

Philosophy/Goals:

The primary objectives of the course are to provide the student with:

1. Programming expertise in Fortran-77 on a VAX/VMS system with an emphasis on structured programming concepts.
2. An awareness of numerical methods commonly used in engineering and scientific problem solving.
3. An understanding of the limitations of computers and the sources of errors in numerical computation.

Method of Assessment:

3 Tests	75%
Quizzes and Assignments	25%

Textbook:

1. Computing for Engineers and Scientists with Fortran 77
by Daniel D. McCracken
2. Introduction to Numerical Methods (if available)
by Peter A. Stark

BLOCK IV ROOTS OF EQUATIONS

1. Solution by iteration
2. Newton-Raphson method
3. Method of False Position
4. Bisection method

BLOCK V CURVE FITTING and INTERPOLATION

1. Linear interpolation
2. Newton Forward-Difference Formula
3. Newton Backward-Difference Formula
4. Least Squares Curve Fitting

COORDS

INTERPOLATION

EVALUATION PROCEDURES

COURSE:

1. TESTS

Written tests will be conducted as deemed necessary but will usually be announced about one week in advance. Quizzes may be conducted without advance notice.

2. The following grading scheme will be used:

A	76-100 %
B	66-75
C	55-65
X	
R	Repeat

3. An X grade will require upgrading prior to continuing in the program whenever that course is a prerequisite for a future course. An X grade not upgraded reverts to an R.

4. Upgrading of Incompletes:

The method of upgrading is completely at the discretion of the teacher and may consist of one or more of the following options; assigned make-up work, completing or repeating lab activities or assignments, the re-writing of block tests, the writing of a comprehensive supplemental exam. With the absence of a formal make-up period at the end of the semester, it is very difficult to meet individual student needs for remedial work and therefore it is now especially important to not count on a make-up period as a second chance to succeed, because success at this point demands a firm commitment to learning.

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

Attendance and assignment completion may have a bearing on whether make-up work to upgrade an X grade will be allowed.

The highest grade obtainable on a re-write test is 55%.

The following grade symbols have been approved for use in recording grades for the academic year for all post-secondary and non-semestered students.

- "A" - outstanding achievement
- "B" - consistently above average achievement
- "C" - satisfactory or acceptable achievement in areas subject to assessment
- "I" - incomplete - course work not completed by mid-term assessment but expected to be complete by semester end.

NOTE: the "I" grade is acceptable at mid-term only. It is NOT an approved grade for end of term reporting and will not be recorded at the end of a semester.

- "R" - Repeat - the student has not achieved the objectives of the course and the course must be repeated.
- "X" - a temporary grade that is limited in use to rare instances when no other grade will ensure justice. The "X" grade may not be assigned unless accompanied by a written authorization from the Department Chairman. Time allowed for completing course requirements will not exceed 120 calendar days beyond the end of the semester in which it is assigned, and should only be used at the end of a term. If the final grade for the course is not received in the Admissions & Academic Records Office by the date indicated on the authorization, the "X" will revert to an "R".