SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: COMPUTER GRAPHICS APPLICATIONS

Course No. : CET201-5

Program: COMPUTER ENGINEERING TECHNOLOGY

Semester: THREE

Date: SEPTEMBER 1990

Previous
Outline Dated: [Sept. 1989]

Author: TYCHO BLACK

New: _____ Revision: __X__

APPROVED: _____ ___90/09/04___
                   Dean   Date

GENERAL OBJECTIVES

COMPUTER GRAPHICS APPLICATIONS

This course develops an understanding of the graphics environment from several points of view. As a major component of this course students develop skills in the use of AutoCAD, a computer-aided drafting system. Besides developing specific skills in this important engineering tool, the study of AutoCAD will develop an appreciation for the requirements of an effective graphics application.

A second major component provides an overview of the graphics environment from the hardware and software points of view. The nature of graphics hardware, including displays and input devices will be studied and graphics standards will be investigated. After a study of BASIC graphics programming, practical graphics programming assignments in a VAX BASIC or GWBASIC environment will be used to demonstrate graphics programming concepts.

TEXTBOOK: 1. "AutoCAD and its Applications" by
                 Terence Shumaker and David Madsen
                 (Goodheart-Willcox Company)

             2. Course notes supplied by the instructor.

TIME: 5 HOURS PER WEEK (SEMESTER 3)

CREDITS: 5 CREDITS

CET201 COURSE GUIDELINES AND EVALUATION

This course is organized as two separate parts which are scheduled and evaluated separately. They are identified as follows:

PART I	3 Hours/week	AutoCAD
PART 2	2 Hours/week	Graphics

1. **EVALUATION:** **COMPUTER GRAPHICS APPLICATIONS: CET201**

PART I:

AUTOCAD	60% total
2 Theory Tests	30%
Assignments / Quizzes	30%
	60% of final grade

PART II:

GRAPHICS	40% total
2 Theory Tests	20%
Assignments	20%
	40% of final grade

NOTE: Some modifications may be required to this proposed evaluation scheme. The instructor reserves the right to make such modifications if they appear necessary. In an event, the relative weights of the 2 parts of this course will be maintained at 60% and 40%.

2. **TESTS**

Written tests will be announced about one week in advance. Quizzes may be conducted without advance warning.

3. **ASSIGNMENTS**

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

4. **ATTENDANCE**

Attendance will be taken in this course. It is especially important that students take full advantage of all available lab time, as access to the AutoCAD lab is limited and the required time to complete and plot assigned drawings requires full use of the assigned time.

5. GRADING SCHEME

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

I   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.

6. UPGRADING OF INCOMPLETES

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.

SPECIFIC OBJECTIVES: PART I

AUTOCAD

BLOCK 1   INTRODUCTION TO CAD

1.   Describe CAD terminology and principles and the role of CAD in industry.

2.   Describe the requirements of CAD software and hardware.

3.   Describe the advantages and disadvantages of using AutoCAD.

4.   Describe the appropriate computer drafting procedures required for the efficient production of drawings.

5.   Describe and use effectively the AutoCAD menu structure.

6.   Be able to describe the function of AutoCAD commands and use them effectively in producing, editing and plotting two. dimensional drawings.

BLOCK 2   ADVANCED AUTOCAD FEATURES

The degree to which these advanced features are covered in the course will vary. It should be understood that a thorough study of AutoCAD is beyond the mandate of this course but an introduction to its advanced features will be included.

1.   Learn to create shapes and symbols for multiple use.

2.   Learn three-dimensional drawing features in AutoCAD.

3.   Learn to use AutoLISP commands and write simple AutoLISP programs.

SPECIFIC OBJECTIVES: PART II

BLOCK 3   INTRODUCTION TO COMPUTER GRAPHICS

1.   Video display devices:

   a) Operating principles of monochrome and colour CRT's
   b) Raster-scan and vector refresh CRT's
   c) Other display devices.

2.   Video display adapter standards in the PC environment

3.   Graphics input and output devices.

4.   An overview of graphics applications.

5.   An overview of graphics standards.

BLOCK 4   VAX BASIC GRAPHICS PROGRAMMING

A series of programming assignments will be done, based on the Basic graphics concepts listed below.

1.   The default drawing board.

2.   Displaying graphics objects:

   GRAPH POINTS, GRAPH LINES
   GRAPH AREA, GRAPH TEXT
   PLOT LINES
   MAT GRAPH POINTS, LINES, AREA

3.   Changing the attributes of graphics objects.

4.   Changing text attributes.

5.   Windows and transformations

6.   Graphics input and output.