HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS

MAT 130   **Computer Literacy**

CREDIT HOURS: **3.0**

EQUATED HOURS: **3.0**

CLASS HOURS: **3.0**

PREREQUISITE: **Passing score on the COMPASS/CMAT**
PRE/CO-REQ: **ESL 091/ENG 091**

REQUIRED TEXTS: **Beekman. /Quinn. Tomorrow's Technology and You.**
                          8th Edition Pearson 2006.

DESCRIPTION: **This course provides a historical development of computers.**
                          Students will have a hands-on experience with a
                          microcomputer. They will enter and run prepared programs.

EXAMINATIONS: **A minimum of three partial tests and a comprehensive final**
                          examination.

GRADES: **A, A^{-}, B^{+}, B, B^{-}, C^{+}, C, D, I, F.**

MAT 130

COURSE OUTLINE

This document is designed to orient and assist those who teach this course. The syllabus, which is to be distributed to the students, is essentially an outline of this document, stripped of comments.

> MAT 130 Computer Literacy is A college-level survey course meeting twice-a-week for 3 credits. It is not designed to teach programming. Students whose primary interest is programming should take courses such as our offerings in MAT 140 or MAT 200

> A term project or paper is required, which is to be written with word processor. A student who does not complete this requirement shall not pass the course.

> A cumulative final exam and either a midterm or two or three hour exams are required.

> The grades **A, B, C, D, F**, and may be earned in the course. The **I** grade is to be awarded only to those who would pass the course should they complete some specific task..

The syllabus for the course consists of what we call "core" material, which each class shall master, and other materials which depends upon the interest and expertise of the instructor.

The CORE Material:

I.   THE HISTORY AND FUTURE OF COMPUTERS

The stress is to be upon the rapid increases in computing power and concomitant decreases in price.

II.   ARCHITECTURE

Students are to learn of the essential hardware of any particular system. They are to know the function of the CPU, I/O and memory devices and their interconnections.

Students are to survey similarity and differences of computers of different scales from single chips through super computers. Comparison is to be made of price, size, performance, reliability capability, design.

Students are to learn how computers are linked in networks. Distributed dataprocessing, Remote terminal entry, and local networks for sharing information and resources such as printers and hard disks.

Topics in Architecture include:

      A.   Difference of Scale
- 1. Super
- 2. Mainframe
- 3. Mini
- 4. Micro

      B.   **The Hardware of a System**
- 1. CPU
- 2. I/O
- 3. Memory devices

      C.   **How Computers are Linked to Networks**

III.   THE CURRENT USE OF COMPUTERS

Robotics, scientific research (eg. The four-color problem and number theory), Spreadsheets, banking, shopping, security, weapons and other topics. Students are to get some sense of how the computer is used today. The instruction can often elicit cogent examples from the personal experience of the students.

The following section of applications are designed that the student may have "hand-on" Experience with specific applications. The belief is that experience with one application will readily be transferred to another application of the same type which the student will encounter in other classes or at work. "Hands-on" experience also pushes students over the threshold anxiety of the novice user. Such experience informs their discussion of the other topics of the course.

Topics in the III include:

A. Robotics
B. Scientific Research
- 1. The Four-Color Problem
- 2. Number Theory
C. Spreadsheets
D.   Networks
- 1. Banking
- 2. Shopping
- 3. Security
- 4. Defense

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IV.   APPLICATIONS-TELECOMMUNICATIONS

Electronic mail, remote query of data bases, shopping and banking transactions,
Bulletin boards, electronic conferencing.

Topics in Telecommunications include:
1. Enhanced communication
   a. electronic mail
   b. bulletin boards
   c. electronic conferencing

2. Enhanced influence
   a. remote query of data bases
   b. shopping transactions
   c. banking transactions

V. APPICATIONS-DATA BASE

Students are to insert, delete, correct records in a data base. A small data base of records
suitable for use in a hospital is suggested. Students are to be able to get a print-out of the
results of a simple query. The plan is for the department to supply a small, robust data
base with source code which can be adapted by the instructor as necessary, i.e. Microsoft
Excel.

Topics in Data Base include:

1. Insert Records in a data base
2. Delete records from a data base
3. Correct records in a data base
4. Load a program
5. Obtain a print-out of the results of a simple query

VI.   APPLICATIONS-WORD PROCESSING

Students are to be able to underline, center, right and left justify expressions, set
margins and page breaks, move blocks of text, make global and local changes,
and print a document. The department is considering Microsoft Word, Apple
Works, Apple Writer, Logo Writer, and BankStreet Writer as the main software to
be supported.

Topics Word Processing include:

1. Formatting
   a. underline
   b. center
   c. left and right justify expressions

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d. set page breaks
e. set margins
f. editing
g. global
h. local changes
i. move blocks of text
j. Save, load and print a document

VII. APPLICATIONS-PROGRAMMING

Students are to understand the need for precise, unambiguous instructions and for precise explication (ie. no mistakes in syntax or punctuation).

Students are to write simple programs. These should involve the concepts of repetition, testing (if….then). Students should do simple editing.

Topics in Programming include:

1. Understand the need for precise, unambiguous instructions and for precise explication
   a. syntax
   b. punctuation

2.Simple programs
   a. concept of repetition
   b. testing
   c. save and load a program
   d. simple editing

VIII. Supplementary materials should include topics such as:

Thee ethical dimension of computer use
The social impact of computers
The political impact of computers
A survey of jobs related to computers
How to use a spreadsheet or accounting program
What computer a person should buy
Artificial Intelligence
How computers ought to be used in the home
How computers ought to be used in education
How computers may be used in the arts
How computers may be used in medicine and health care

Comment on the term paper requirement: Students should be reminded and coached daily of this important requirement. The following is suggested:

1.   Require students to submit a topic. The instructor should comment upon and personally approve each topic. It is desirable that the topic be relevant to the student's area of study.

2.   Require students to submit a bibliography prior to commencement of writing. It is suggested that students be taught how to use the Reader's Guide to Periodicals and that students be taught how to ask for help in the library.

3.   Require students to submit an outline of their work prior to commencement of writing. The logical development of ideas can more easily be arranged at this stage.

4.   Require students submit at least one draft of their paper-triple spaced. Students often desire to learn how to write well. This is a chance for them to receive the instructor's comments without penalty. They also learn the power of word processing while making changes to a draft.

Another supplementary topic is: How to make a presentation using software such as Microsoft Power Point.

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