I. CSCI 101 - AN INTRODUCTION TO PROBLEM SOLVING WITH COMPUTERS - 4 CREDITS

II. COURSE DESCRIPTION
A comprehensive introduction to the concepts, techniques, and history of computing. The course emphasizes problem solving with the computer, including such activities as making calculations and presenting reports, tables, and graphs based on those calculations; collecting, sorting, updating, and retrieving data, particularly using the Internet; and organizing and implementing methods for the effective display and interpretation of information. This course is intended for the computer neophyte as a first course in the use of computers.

PREREQUISITE: none

III. COURSE OBJECTIVES
The student who satisfactorily completes this course should:
1. understand the historical perspective in which computing has developed,
2. understand the relationship between hardware and software,
3. understand how information is collected, processed, packaged, and interpreted,
4. understand the general concept of problem solving,
5. be able to use the computer to solve specific problems,
6. have an introductory knowledge of standard computer software,
7. understand the role of Computer Science in the world,
8. understand the means by which the Internet provides communications and access to information.

IV. COURSE OUTLINE
A. History of computing
   1. Ancient computational devices
   2. Inventors and Inventions
   3. Computer Generations
   4. The Information Age

B. Computer concepts
   1. Terms and ideas
   2. Introduction to the computing at MU

C. Hardware and Software
   1. Representation of information
   2. CPUs; I/O media; Storage media; networks
   3. Hardware operation;
   4. System Software
   5. Application Software

D. Word processing
   1. Word processing defined and demonstrated
2. Document preparation and editing
3. Document, paragraph, and character formatting

E. Spreadsheet
1. Spreadsheets defined and demonstrated
2. Spreadsheet preparation; formulas
3. Functions; Spreadsheet editing

F. Charting and Graphics
1. Interpretation of business charts
2. Preparations of charts from spreadsheets and databases

G. Database Management
1. Databases defined and demonstrated
2. Database preparation; Sorting; Selection
3. Report generation

H. Interoperability
1. Integrated software
2. Desktop Publishing

I. Problem solving
1. Problem analysis and problem solving strategies
   a. Stepwise Refinement
   b. Analysis Techniques
   c. Design Techniques
   d. Testing and Debugging
   e. Strategies
      i. Brute Force
      ii. Approximation
      iii. Algorithms
      iv. Simulation
      v. Analogy
      vi. Trial and Error
2. Computer problem solving
   a. Management and decision support systems
   b. Collecting and organizing data
   c. Working with numbers
   d. Graphics: working with computer images
   e. Systems analysis and design
3. Spreadsheet problems
4. Statistics
5. Analysis and representation of information
6. Data management problems

J. Computer applications
1. Visual and sound applications
2. Simulations
3. Artificial intelligence
4. Problems in AI
5. Education
6. Communications

K. The Internet
1. What is the Internet?
   a. Computer Networks
   b. Brief History of the Internet
   d. What information is available on the Internet?
   e. Commercial Internet Service Providers

2. Electronic Mail
   a. How E-mail Works
   b. Header, Message, Signature
   c. Messages
      i. Send
      ii. Read
      iii. Reply
      iv. Forward
      v. Edit

3. Electronic Discussions
   a. LISTSERV Lists
   b. Newsgroups
   c. Internet Relay Chat (IRC)

4. Graphical and Hypertext Access to the Internet
   a. The World Wide Web
   b. Browsing
   c. Search tools
   d. Creating a Web Page

5. Social and Legal Issues
   a. Legal Implications
   b. Politics and the Internet
   c. Network Ethics and "Netiquette"
   d. Security on the Internet
   e. University Policies

6. File Transfer
   a. Transfer software
   b. FTP
   c. Uploading/Downloading
   d. Text files and Binary files

VI. CRITERIA FOR EVALUATING STUDENT PERFORMANCE
Student performance will be evaluated using an appropriate combination of tests and laboratory assignments.

Sample Criteria:
Percentages assigned to examinations will not exceed those specified in the governance manual.

VII. SUGGESTED TEXTS


VIII. RELATED READINGS
