INDIANA UNIVERSITY OF PENNSYLVANIA
SENATE CURRICULUM COMMITTEE

NEW COURSE PROPOSAL

CO 101  MICROBASED COMPUTER LITERACY

Department:  COMPUTER SCIENCE

Person to Contact for Further Information:  WILLIAM W. OBLITEY, X4491

Course Affected:   CO 200, INTRODUCTION TO COMPUTERS

Desired Effective Semester for Change:   FALL, 1989

Approvals:   Department Committee Chairperson _____

Department Chairperson _____

School Committee Chairperson _____

School Dean _____


A.   DETAILS OF COURSE

A1.   Academic need  - this course is proposed for inclusion in the Liberal
Studies course list as a liberal studies elective.   It  fulfills the
microcomputer based computer literacy need for students.   The
Computer Science Department teaches Computer Literacy to non-Computer
Science majors, and this course is designed for such a clientele.

A2.   Catalog description - see attachment.

A3.   The course follows the traditional approach of lecture courses in the
Computer Science Department:   lectures that cover the  concepts and
projects that provide practical experience.   The novelty of the
course is only in its emphasis on microcomputers.

A4.   This proposed course is  a  modernization of  the  existing  CO 200-
Introduction to Computers.   The existing course did not have a
microcomputer emphasis as the proposed course does.   There are
several reasons:   first,  microcomputers were not invented when that
course was first proposed and accepted, and, second, only recently

have course materials become available that facilitate the move to microcomputer emphasis. The microcomputer version of CO 200 (i.e. the proposed course) has been offered several times during the summer sessions when university computing facilities could handle the student load. Now that public facilities are becoming available, it is feasible to offer this course.

A5. The course is not a dual level course.

A6. The course may not be taken for variable credit.

A7. Quite a number of universities offer this course. The attachment shows the offerings by Wayne State University, North Carolina State University, and San Francisco State University. All of the SSHE institutions with the exception of Cheyney University of Pennsylvania offer this course or some modification of it (see attachment for course descriptions).

A8. The Association for Computing Machinery (ACM) does not require this course. However, the Data Processing Management Association (DPMA) suggests a model curriculum for the course under the title of "Microcomputer Applications in Business".


B. INTERDISCIPLINARY IMPLICATIONS

B1. The course is designed to be taught by one instructor.

B2. No additional or corollary courses are required.

B3. ASBED and MIS Departments currently offer similar courses. Meetings between the college deans, departmental chairpersons, and a few individuals have been held to encourage the cooperation of the Computer Science ASBED, and MIS Departments in offering this course as a computer literacy course.

B4. Students in the School of Continuing Education will be encouraged to take this course.


C. IMPLEMENTATION

C1. Resources needed for this course are available but not sufficient.

 a. Faculty - Computer Science, ASBED and MIS Department faculty have been teaching courses similar to the one proposed.

 b. Space - Classroom space is adequate but laboratory space is

*[handwritten left margin: How will you decide how many sections of each will be offered? If there is a demand for more sections, who decides?]*

*[handwritten bottom: Memo of understanding from Deans?]*

not. What is eventually needed are adequately equipped laboratories for hands-on sessions with students.

 c. Equipment - The course requires the use of microcomputer laboratories. These are available in scattered locations across the main and branch campuses; however, there is no one laboratory that is capable of accommodating the normal class size of up to 30. Eventually, a laboratory of this size should be available.

*[handwritten: Any agreement that these are forthcoming?]*

There is also a need for carts equipped with microcomputers and pc-projectors for demonstration purposes in all buildings where the course will be taught.

 d. Laboratory Supplies - Paper and ribbons for printing of output.

 e. Library Materials - reading materials needed to support the course are available at the Stapleton Library.

 f. Travel Funds - No travel funds are needed.

 g. Continuing Learning - For this course to be truly effective, fully functional versions of the educational software used in the course need to be made available in public laboratories for students to use throughout their academic careers. *[handwritten: ?]*

*[handwritten: Whose responsibility will it be to keep these labs up to date?]*

C2. No resource for this course is funded by a grant.

C3. Multiple sections of the course will be offered every semester. It will also be offered in the summer sessions.

*[handwritten: by computer sci or total of all 3 departments.]*

C4. It is anticipated that eight to ten sections of this course will be offered each semester. One section will be offered in each summer session. This may be expanded on demand.

C5. Up to thirty students will be accommodated in a section of this course. (This will cause some students to share microcomputers during laboratory sessions).

C6. No professional society recommends enrollment limits or parameters specifically for this course.

C7. This course is not a curriculum requirement for Computer Science majors. It is being proposed as a Liberal Studies Elective. It does not affect the number of free electives available to majors, since Computer Science majors do not need the course. It further does not necessitate any increase in the 124-credit program of any student at IUP since it will be

counted as part of the 124 credit requirements.

## Suggested Reading List

1. Rischler, M. A. and Firschein, <u>Intelligence - The Eye, the Brain and the Computer</u>, Addison-Wesley, Reading MA, 1987.

2. Feigenbaum, E. A. and McCorduck, P., <u>The Fifth Generation - Artificial Intelligence and Japan's Computer Challenge to the Worl</u>, Addison-Wesley, Reading, MA, 1983.

3. Brody, C., <u>Technostress</u>, Addison-Wesley, Reading MA, 1984.

4. Martin, J., <u>Technology's Crucible</u>, Prentice-Hall, Englewood Cliffs, N. J., 1987.

5. Perrolle, J., <u>Computers and Social Change</u>, John Wiley, NY, 1987.

6. Logsdon, T., <u>"Computers Today and Tomorrow"</u>, Computer Science Press, Rockville, MD, 1985.

7. Rockart, J.F. and Morton, M.S.C., <u>"Computers and the Learning Process in Higher Education"</u>, McGraw-Hill, NY, 1975.

8. Johnson, D. G., <u>Computer Ethics</u>, Prentice-Hall, Englewood Cliffs, NJ, 1985.

9. Parker, D. B., <u>Crime by Computer</u>, Charles Scribner's & Sons, NY, 1976.

10. Hyman, A., <u>Charles Babbage: Pioneer of the Computer</u>, Princeton University Press, Princeton, NJ, 1982.

11. Shurkin, J., <u>Engines of the Mind</u>, W. W. Norton, NY, 1984.

12. Swaine, M., <u>Fire in the Valley: The Making of the Personal Computer</u>, Osborne/McGraw-Hill, Berkeley, CA, 1984.

13. Barcomb, D., <u>Office Automation: A Survey of Tools and Technology</u>, Digital Press, Bedford, MA, 1981.

14. Curram, S. and Curnow, R., <u>Overcoming Computer Illiteracy</u>, Penguin Books, NY, 1983.

15. Schneider, B. R., Jr., <u>Travels in Computerland</u>, Addison-Wesley, Reading, MA, 1974.

16. Clarke, A.C., <u>Profiles of the Future</u>, Harper & Row, NY, 1963.

17. Hofstadter, D., <u>Godel, Escher, Bach: An Eternal Golden Braid</u>, Basic

Books, NY, 1979.

18. McCorduck, P., <u>Machines Who Think</u>, W. H. Freeman and Company, San Francisco, CA, 1979.

19. Harris, S., <u>What's So Funny About Computers</u>, William Kaufman, Los Altos, CA, 1982.

20. Weizenbaum, J., <u>Computer Power and Human Reason</u>, W. H. Freeman, San Francisco, CA, 1976.

21. Hanson, D., <u>The New Alchemists</u>, Little, Brown, Boston, MA, 1982.

22. Kidder, T., <u>The Soul of a New Machine</u>, Avon, NY, 1982.

23. Rosenberg, J. M., <u>Computer Prophets</u>, Macmillan, NY, 1969.

24. Dreyfus, H. L., <u>What Computers Can't Do</u>, Harper & Row, NY, 1972.

25. Papert, S., <u>Mindstorms: Computers, Children, and Powerful Ideas</u>, Basic Books, NY, 1980.

26. Crichton, M., <u>Electronic Life: How to Think About Computers</u>, Alfred A. Knoft, NY, 1983.

27. Farr, R., <u>The Electronic Criminals</u>, McGraw-Hill, NY, 1975.

28. Adams, J. M. and Haden, D.H., <u>Social Effects of Computer Use and Misuse</u>, John Wiley, NY, 1976.

29. Pacey, A., <u>The Culture of Technology</u>, MIT Press, Cambridge, MA, 1983.

30. Rogers, M., <u>Silicon Valley</u>, Simon & Schuster, NY, 1982.

BE 101, CO 101, IM 101
MICROBASED COMPUTER LITERACY

## Introduction:

In recent years, microcomputers have infiltrated virtually every sector of business and personal life. They continue to increase in importance and power while their costs keep decreasing. They are rapidly becoming a common presence in offices and in people's homes. It is, therefore, essential that the efficient and effective use of this versatile and powerful tool be understood. Hence, a campus-wide course in <u>Microcomputer Literacy</u> will prove expedient to IUP students both during their college years and after graduation.

Number of credits:  3 ch

Duration:          1 semester; offered each semester

Prerequisites:     None

## Catalog Description:

3C-OL-3SH

CO 101 MICROBASED COMPUTER LITERACY
(Does not count toward Computer Science major)

An introductory course designed to provide students with a fundamental understanding of computers. The course familiarizes students with the interaction of computer hardware and software. Emphasis is placed on the application of microcomputers, the use of productivity software (word processing, spreadsheet management, file and data base management), and the social and ethical aspects of the impact of computers on society.

## Course Objectives:

The objectives of this course are:

a.   To provide instruction on the components of a microcomputer system.

b.   To provide laboratory and theoretical instruction on how to use software in the categories of operating systems, word processing, spreadsheet, database, and desktop publishing.

c.   To develop an understanding of historical, current, and future trends in computing that will enable one to comprehend better and react to new applications and technologies as they evolve in the coming years.

d.   To develop an understanding of the use of computing as an intellectual tool in the solving of problems, the manipulation of information, and the enhancement of learning.

e.   To develop an understanding of the value of computing as an

intellectual skill whose concepts have inherent value analogous to those of mathematical and logical reasoning, and to those of language itself.

f.  To develop an awareness of issues in computing as they relate to ethical, social, psychological, political, and economic implications.

Outline:

I.  Evolution of Computing Systems

    A.  Early systems/hardware
    B.  Current status of computing
    C.  Future trends of computing

II. Microcomputer Components

    A.  Microprocessors
    B.  Primary and Secondary Storage
    C.  Input/Output Components

III. Software

    A.  Operating Systems

        1.  Concepts

            a.  Single-user, multi-user, multi-tasking
            b.  Language translators and utility programs

        2.  Skill Development

            a.  Command structure
            b.  Use of utilities

    B.  Word Processing

        1.  Concepts and applications
        2.  Skill development

            a.  command structure
            b.  creation and manipulation of text

    C.  Spreadsheet

        1.  Concepts and applications
        2.  Skill development

            a.  command structure
            b.  creation and manipulation of data

D.    Database Management

1.    Concepts and applications
2.    Skill development

   a.    command structure
   b.    creation and manipulation of databases

E.    Desktop Publishing/Graphics

1.    Concepts and applications
2.    Skill development

   a.    command structure
   b.    designing effective print communications

3.    Integrated application packages

IV.    Interconnecting Computer Resources

A.    Local area networks
B.    Electronic mail/bulletin boards
C.    Electronic database retrieval systems

V.    Microcomputing and Society

A.    Home computing
B.    Computers in education
C.    Computers in the arts
D.    Computers in the natural sciences and mathematics
E.    Computers in the humanities and social sciences
F.    COmputers in business

VI.    Issues in Microcomputing

A.    Theft and embezzlement
B.    Security
C.    Computer crime legislation
D.    Computer privacy


Assignments:

    Assignments will include laboratory projects on wordprocessing, spreadsheet and database manipulation. Also, students will read articles and at least one book dealing with the application of computers in subject areas that are related to their major fields of study or are of interest to them. The students then present summary reports of the articles and book(s) together with their reactions. The wordprocessing package taught in the course will be used for the reports.

Evaluation Methods:

The final grade for the course will be determined as follows:

Suggested
Percentages

1.  Laboratory projects.  Three laboratory projects          – 30%
    covering wordprocessing, spreadsheet, and database
    manipulation.

2.  Reaction papers.  Library search and reaction to         – 20%
    articles dealing with computer applications.  A
    minimum of two reaction papers of this nature.

3.  Quizzes and homework assignments.                        – 10%

4.  Examinations/Tests.  Two tests during the course         – 40%
    of the  regular teaching  semester, and a final test at the
    end of the semester.

Support Equipment

    At present, the microcomputer laboratories  at  IUP  are  insufficient and
overused.   More microcomputer  laboratories available to the entire university
community are needed (possibly  a minimum  of one  microcomputer laboratory per
building).   These laboratories  should be  accessible to  all departments that
teach microcomputer related courses and should be of sizes that can accommodate
regular class sizes.

*[handwritten margin note: Is course approval contingent on this?]*

Typical Texts:

    Anderson, R.  E. and Sullivan, D. R., World of Computing, Houghton Mifflin
Company, Boston, MA, 1988.

    Capron, H. L., Computers, Tools for an Information  Age, Benjamin/Cummings
Publishing Company, Inc., Menlo Park, CA, 1987.

    Parker, Charles S., Understanding Computers and Data Processing: Today and
Tomorrow, Holt, Rinehart and Winston, New York, NY, 1987.

and selection(s) from the accompanying  Software Solution Series:

    Using SuperCalc 4
    Using Lotus 1-2-3
    Using WordStar
    Using Microsoft Works
    Using dBASE III Plus
    Using Word Perfect
    Using Page Maker

    or  other  appropriate  wordprocessing,  spreadsheet,  and/or  file
management and database management packages.

TO:       Senate Undergraduate Curriculum Committee

FROM:     IUP Computer Science Department Faculty

SUBJECT:  Computer Literacy in the Proposed Liberal Studies Program


## POSITION

The Computer Science department faculty believe a better but not optimal alternative to the 3 semester hour Mathematics requirement in the proposed Liberal Studies program would be a 2 semester hour Mathematics requirement and a 2 semester hour Computer Science requirement.

A 2 semester hour Computer Science requirement could be fulfilled in several ways:

a.   By taking a 2 semester hour computer literacy course. Such a course would have to be developed by the Computer Science Department and/or by any other department in consultation with the Computer Science Department and with the approval of the proposed Liberal Studies Committee.

b.   By taking one of the two existing computer science courses, CO 200 or CO 110. These are both 3 semester hour courses.

c.   By taking FS 241, an existing 3 semester hour course offered by the Finance and Management Information Systems Department.


## RATIONALE

The present Liberal Studies proposal provides a suggestion as to how students should obtain a computer experience; however, computer literacy is more than a computer experience.

An appropriate Liberal Studies course in computer literacy should necessarily include an exploration of the fundamentals of computer science, as well as the relating of those fundamentals to practical experience, both with preprogrammed applications packages and good examples of general purpose programming.

Experience using software packages can well be obtained in courses in departments that use the computer in solving their specialized problems. That experience is made more valuable for the student if the fundamentals of computer science have been learned first. The goal of a computer literacy course in the Liberal Studies program should be to prepare students to use computers wisely in their careers, and to react with good judgement to the use of computers by

others in ways that affect their lives.   That goal  cannot be reached
solely   by   exposure   to   the  use  of  applications  packages  on
microcomputers.

For example, students in  their careers  may well  be involved in
decisions  as  to  the  acquisition  of  computers  for their own use.
Clearly, they will be better prepared  for that  if they  have a broad
view  of   computer  capabilities,   some  understanding  of  computer
fundamentals, and adequate knowledge of the  languages and terminology
used to describe (and sell) computer products.

Finally, students  facing the  job market  want not only adequate
knowledge of the computer field, but also a certified credential as to
what  they  know,  in  the  form of suitable computer courses on their
transcript.

## COMPUTER LITERACY

The  following  list  presents  those  fundamentals  of  computer
science which  might be  included in  a computer literacy  course to be
included in a Liberal Studies program.

A.  The history  of computing;  the contributions  of both people
and organizations;  how the fundamentals of computer science were
learned, and practical difficulties were overcome.

B.  How the computer is most  often  used  with  emphasis  on the
variety of  data that  must be  handled, with data described from
the applications  point of  view; examples  from word processing,
data   base   management,   and  spread  sheet  development;  and
applications from business, industry, government, and science and
technology.

C.  Data  representation  in  the  form  that  computers can use;
principles and methods of data transfer between computers and the
outside world.

D.  Operations on  data that computers must be able to carry out,
to meet  the  needs  of  users;  not  just  arithmetic,  but also
comparing,  sorting,  and  searching  in non-numeric domains, and
much sophisticated input and output.

E.  Computer architecture; the way  computers have  been designed
and  built  to  hold  and  manipulate  data,  from  mainframes to
microcomputers.

F.  Communication   among   computers;   networks;   the  digital
telephone system.

G.  Human communication  with computers; "user friendly" software
packages.

H. Programming languages to control computer activity and performance.

I. Debugging and testing of programs and data to achieve desired levels of confidence in system performance.

J. Artificial intelligence; in what sense can computers "think", or assist humans in making reasoned decisions.

K. Effect of the computer on our economic, social, and political lives.

L. The dynamics of technological change; what of the future?

## CONCLUSION

It does not make sense to expect anyone outside of the computer disciplines to be able to convey the full meaning of the fundamental concepts of computing technology. Just as many departments rely upon the Mathematics department to teach fundamental mathematical concepts and then build on these concepts, the computer disciplines should be relied upon to provide the basis for knowledge of computing technology. Just as fundamental mathematics is provided in the Liberal Studies proposal, the same method can be used to provide the fundamentals of computing.

INDIANA UNIVERSITY OF PENNSYLVANIA
COMPUTER SCIENCE DEPARTMENT

LIBERAL STUDIES COURSE PROPOSAL
BE 101, CO 101, IM 101  MICROBASED COMPUTER LITERACY

PART I.   BASIC INFORMATION

A.   This course is being proposed as a Liberal Studies Elective.

B.   The <u>request</u> is for <u>regular</u> approval.

C.   The course is to be listed as an approved substitution for CO 200 Introduction to Computers during the transition from General Education to Liberal Studies.

PART II.  LIBERAL STUDIES GOALS MET

A.   Intellectual Skills and Modes of Thinking:          Primary   Secondary

1.   Inquiry, abstract logical thinking, critical analysis, synthesis, decision making, and other aspects of the critical process.                                            _____   ___X___

2.   Literacy - writing, reading, speaking thinking.                                ___X___   _____

3.   Understanding numerical data                        _____   ___X___

4.   Historical consciousness                            _____   ___X___

5.   Scientific Inquiry                                  _____   _____

6.   Values (ethical mode of thinking or application of ethical perception)            ___X___   _____

7.   Aesthetic mode of thinking                          _____   ___X___

B.   Acquiring a Body of Knowledge or Understanding Essential to an Educated Person                     ___X___   _____

C.   Understanding the Physical Nature of Human Beings _____   _____

D.   Certain Collateral Skills

1.   Use of Library                                      _____   ___X___

2.   Use of Computing Technology                         ___X___   _____

PART III.  MEETING GENERAL CRITERIA FOR LIBERAL STUDIES

    A.    The course will be of multiple-section, multiple-instructor nature. All departments teaching this course have agreed to use the same syllabus.  A coordinating committee consisting of a member from each department will meet periodically to maintain basic equivalency.

    B.    The course content includes the contributions of women (e.g. Cdr. Grace Hopper, Lady Ada Lovelace) to the subject of computing. This is particularly emphasized in the History of Computer Development section (see attached course outline).

    C.    The evaluation methodology for the course demands the reading and use by students of works of fiction or nonfiction which relate to computers and writing reaction papers on the material read (see attachments).

    D.    The course is designed as one that introduces the use of computing to a general student audience.  The course is not a technical or preprofessional one. It introduces computing to students but does not require the writing of programs in traditional programming languages.

    E.    Contribution to Student's Abilities

        __X__  1.    Confront the major ethical issues which pertain to the subject matter; realize that although "suspended judgment" is a necessity of intellectual inquiry, one cannot live forever in suspension;  and make ethical choices and take responsibility for them.

        _____  2.    Define and analyze problems, frame questions, evaluate available solutions, and make choices.

        __X__  3.    Communicate knowledge and exchange ideas by various forms of expression, in most cases writing and speaking.

        _____  4.    Recognize creativity and engage in creative thinking.

        __X__  5.    Continue learning even after the completion of their formal education.

        __X__  6.    Recognize relationships between what is being studied and current issues, thoughts, institutions, and/or events.

Explanation: Contribution to students' abilities

_____ Major ethical issues which confront the world of computing include software piracy misuse of information, and invasion of privacy. The course encourages student discussion of the needed respect for intellectual labor and creativity. Students are thus encouraged to become responsible users of computer software.


PART IV.  LIBERAL STUDIES ELECTIVES

___X___ Treat concepts, themes, and events in sufficient depth to enable students to appreciate the complexity, history, and current implications of what is being studied, and not be merely cursory coverage of lists of topics.

Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.

___X___ Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.

___X___ Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Areas of Liberal Studies.

PART V.  LIBERAL STUDIES CRITERIA

___X___ Meet the "General Criteria which apply to all liberal studies courses".

___X___ Not be a technical, professional, or pre-professional course.

curriculum\libstu.wwo

LIBERAL STUDIES COURSE PROPOSAL

Explanations:

Part II:  Liberal Studies Goals Met

A.  Intellectual Skills and Modes of Thinking

1.  Inquiry, abstract logical thinking, critical analysis, synthesis decision making,  and other aspects of the critical process is a secondary goal.  The use of  utility programs  like spreadsheets and  data  base  systems,  and  wordprocessors  demand  critical analysis and logical thinking.

2.  Literacy - writing, reading,  speaking,  thinking  is  a primary goal.   The course teaches the use of wordprocessors and demands that  students  use  the  wordprocessor  for   their  laboratory projects and to write reaction papers.

3.  Understanding numerical  data is  a secondary  goal.  The course teaches computer manipulation of data,  and  this  leads  to the study of  the fundamentals  of number  bases.  Also,  spreadsheet processing  requires  understanding  of   the  manipulation  of numerical data.

4.  Historical consciousness  is a secondary goal.  The evolution of computing systems leads into discussions of industrial evolution and how humans adapt to the changes of the various era.

6.  Values  (ethical  mode  of  thinking  or  application of ethical perception) is  a  primary  goal.   Software  piracy,  misuse of information, and invasion of privacy seem to plague the world of computing.  The student is presented with the  pros and  cons of ethical issues concerned with computer usage.

7.  Aesthetic mode  of thinking  is a secondary goal, mainly because the course  does  not  explicitly  emphasize  computer graphics. However,  the  formatting  of  documents  using  wordprocessors, spreadsheets, and desktop publishing border around the region of aesthetic development.

B.  Acquiring  a  body  of  knowledge  or  understanding  essential to an educated person.  This  is  a  primary goal.   Microcomputers  have so infiltrated virtually every sector of business and personal life that it has  become essential  that their  efficient and  effective use be understood by the educated person.

D.  1.  Use of the library is a secondary goal.  The course demands that students use the library to locate articles on computers related to their  majors or  of interest  to them  and also to locate at least one book from the  suggested  reading  list.   The course presents an  overview of the use of databases related to library searches.

2. Use of Computing Technology. This is a primary goal. The course teaches the technology and application of microcomputers. The hope of the departments which will teach the course is that eventually laboratories that allow a 1-to-1 student-machine interaction will be available on both main and branch campuses.

Part III. Meeting General Criteria for Liberal Studies

E. 1. Confronting the major ethical issues which perform to the subject matter. Computer crime is a major issue which is often overlooked by the corporate world. Students need to be made aware of the issues involved and their effect on society.

3. Communicate knowledge and exchange ideas by various forms of expression, in most cases writing and speaking. Computers have proliferated every discipline. Students will have to research the use of computers in their majors and submit papers on them or participate in class presentations on the topics concerned.

5. Continue learning even after the completion of their formal education. The course teaches the current and available versions of the Disk Operating System, word processors, spreadsheets, and data base management systems. These versions change rapidly, and new software continues to be written and sold to the public. The student will have to utilize the background gained from taking the course to facilitate his/her learning of the use of newer software or software versions.

6. Recognize relationships between what is being studied and current issues, thoughts, institutions, and/or events. Computer Science is a rapidly changing field. New applications evolve frequently, and students will have to relate what is being studied with current issues, thoughts and events through library searches and class discussions.

Part IV: Liberal Studies Electives

A. Treat concepts, themes, and events in sufficient depth to enable students to appreciate the complexity, history, and current implications of what is being studied, and not be merely cursory coverage of lists of topics. The course will present the details involved with microcomputer use. The operating system, word processing, spreadsheet processing, and data base management will be treated such that students will appreciate the applicative capabilities of the microcomputer.

C. Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline. The course will allow students to fully understand and apply the vocabulary that is commonly used in the discipline. The methods of inquiry used in the discipline are, however, beyond the scope of the proposed course and above the level of the clientele.

D. Encourage students to use and enhance, wherever possible, the

composition and mathematics skills built in the skill areas of Liberal Studies. The course will teach the use of word processing and spreadsheet processing which will encourage and enhance the composition and numerical skills of the skill areas of Liberal Studies.

Part V.   Liberal Studies Criteria

   A.   The course meets the "General Criteria which apply to all Liberal Studies courses".

   B.   The course is <u>not</u> a technical, professional, or pre-professional one. It is intended for non-Computer Science Majors.

WPFILES\CURRICU\LIBSTU.WWO