CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Curriculum Committee

I. TITLE/AUTHOR OF CHANGE
COURSE/PROGRAM TITLE ___CO 101 Microbased Computer Literacy___
DEPARTMENT ___Computer Science___
CONTACT PERSON ___William A. Oblitey___

II. THIS COURSE IS BEING PROPOSED FOR:
_____ Course Approval Only
_____ Course Approval and Liberal Studies Approval
__X__ Liberal Studies Approval only (course previously has been approved by the University Senate)

III. APPROVALS

___Katherine M. Kelvey___
Department Curriculum Committee

___Thomas P. Cunningham___
Department Chairperson

_____
College Curriculum Committee

___x Anne Katz Dean___
College Dean*

_____
Director of Liberal Studies
(where applicable)

_____
Provost
(where applicable)

*College Dean must consult with Provost before approving curriculum changes. Approval by College Dean indicates that the proposed change is consistent with long range planning documents, that all requests for resources made as part of the proposal can be met, and that the proposal has the support of the university administration.

IV. TIMETABLE

Date Submitted
to LSC _____
to UWUCC _____

Semester/Year to be
implemented _____

Date to be published
in Catalog _____

Revised 5/88

[Attach remaining parts of proposal to this form.]

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 Microcomputer Literacy 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:

      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.

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.

READING LIST
BE 101, CO 101, IM 101 - MICROBASED COMPUTER LITERACY

The following constitute a suggested reading list of substantial works of fiction and non-fiction for the proposed course.

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

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

3. Brody, C., Technostress, Addison-Wesley, Reading MA, 1984.

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

5. Perrolle, J., Computers and Social Change, John Wiley, NY, 1987.

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

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

8. Johnson, D. G., Computer Ethics, Prentice-Hall, Englewood Cliffs, NJ, 1985.

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

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

11. Shurkin, J., Engines of the Mind, W. W. Norton, NY, 1984.

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

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

14. Curran, S. and Curnow, R., Overcoming Computer Illiteracy, 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.

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 request is for regular 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.

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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

B. 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 not a technical, professional, or pre-professional one. It is intended for non-Computer Science Majors.