LSC Use Only
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Action _____
Date _____

CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Committee

I. **TITLE/AUTHOR OF PROPOSAL**

Course/Program Title: IM 200 Problem Solving with Structured Programming
Suggested 20 character course title: Prb Solv w/Struc Prg
Department: MIS and Decision Sciences Department
Contact Person: Dr. Louise B. Burky

II. **If a course, it is being proposed for:**

__X__ Course Approval/Revision Only
_____ Course Approval/Revision and Liberal Studies Approval
_____ Liberal Studies Approval Only (course previously approved by Senate.)

III. **APPROVALS**

Louise B. Burky
Department Curriculum Committee

Carol Ann
Department Chairperson

Stephen W. Osborn
College Curriculum Committee

Robert C Camp
* College Dean

_____
Director of Liberal Studies (where applicable)

_____
Provost (where applicable)

* EACH COLLEGE DEAN MUST CONSULT WITH THE PROVOST BEFORE APPROVING CURRICULUM CHANGES. APPROVAL BY COLLEGE DEAN INDICATES THE PROPOSED CHANGE IS CONSISTENT WITH LONG RANGE PLANNING DOCUMENTS, ALL REQUESTS FOR RESOURCES IN THE PROPOSAL CAN BE MET, AND THE PROPOSAL HAS THE SUPPORT OF THE UNIVERSITY ADMINISTRATION.

III. **TIMETABLE**

Date Submitted:	Semester to be implemented:	Date to be published in Catalog
to LSC _____		
to UWUCC _____	_____	_____

PART III. COURSE PROPOSALS

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I. CATALOG DESCRIPTION

IM 200 - Problem Solving with Structured Programming
3 credits
No prerequisites, open to all business majors.

This course provides students with specific knowledge of structured programming techniques and mainframe operations. Particular emphasis will be placed on fundamental programming skills. Knowledge of computer concepts relative to the mainframe such as operating systems, primary and secondary storage, job control languages, editors and virtual memory will prepare the business student for more advanced work in information systems.

II. COURSE SYLLABUS

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II. GENERAL OBJECTIVES:

The primary objective of IM 200 Mainframe Computing for Business are:

1. To develop programming skills applicable to the business environment.

2. To familiarize the student with the concepts and techniques of internal and external memory for management use.

3. To introduce the student to the job skills required of a system programmer.

4. To enable students to compare and contrast various operating systems, while focusing on VMS.

5. To develop an understanding of various hardware components of a computer system.

SPECIFIC COURSE OBJECTIVES:

Upon completion of this course, the student will be able to:

1. Write structured programs in a language used in the business environment;

2. Use the Mainframe, Editors, and Program Compilers operating system;

3. Develop shell scripts and job control language to solve different problems;

4. Demonstrate knowledge of computer architecture, time-sharing concepts, command language functions, and computer security;

5. Understand the concepts of interrupts and program states;

6. Demonstrate knowledge of job and task management;

7. Understand the concepts of data management, control blocks, dispatching, allocating peripheral devices and local area networks.

III. DETAILED COURSE OUTLINE:

VMS/EDITOR Time Allocated to Unit I 50%

1. Opening An Account

2. Accessing Host Computer Systems and Services 5%
   - 2.1 Connecting to Your Operating System
     - 2.1.1 Dial-Up Access Over a Network
   - 2.2 Connecting to VAX/VMS at IUP
   - 2.3 Logging In For The First Time
   - 2.4 Logging Out
   - 2.5 Logging In After the First Log-In
     - 2.5.1 Changing Your Password After the First Log-in

3. File Specifications In Business

4. The EVE Text Editors
   - 4.1 Creating a Disk File With EVE 10%
   - 4.2 Editing an Existing File With EVE
     - 4.2.1 Keypad Diagram
     - 4.2.2 Help
     - 4.2.3 The Arrow Functions
     - 4.2.4 Previous Screen and Next Screen
     - 4.2.5 Move By Line
     - 4.2.6 Forward/Reverse
     - 4.2.7 Finding Text
     - 4.2.8 Insert and Overstrike Mode
     - 4.2.9 Delete
     - 4.2.10 Erase Word
     - 4.2.11 Moving & Copying Text--Select, Remove, Insert Here
     - 4.2.12 Entering Commands with the DO Function
   - 4.3 Creating a Disk File with the EVE Keypad Editor
   - 4.4 Editing an Existing File With the EVE Keypad Editor 10%
     - 4.4.1 Keypad Diagram
     - 4.4.2 Fundamental Keypad Functions
     - 4.4.3 Moving the Cursor
     - 4.4.4 Locating Text
     - 4.4.5 Deleting and Undeleting Text
     - 4.4.6 Moving or Copying Text
     - 4.4.7 Changing Case
   - 4.5 Using the EVE Line Editor
     - 4.5.1 Specifying Ranges
     - 4.5.2 CHANGE
     - 4.5.3 HELP

DETAILED COURSE OUTLINE (continued):

     - 4.5.4 INSERT
     - 4.5.5 DELETE
     - 4.5.6 TYPE

4.5.7 RESEQUENCE
4.5.8 Moving From Line to Line
4.5.9 SUBSTITUTE
4.5.10 MOVE
4.5.11 COPY
4.5.12 REPLACE
4.5.13 EXIT
4.5.14 QUIT
4.5.15 SET and SHOW

5. Introduction to Command Languages: Digital (IBM Adaptable) 10%
5.1 Getting Help On-Line
5.1.1 HELP
5.1.2 PRGHELP
5.1.3 VTX
5.1.4 SYS:NEWS.
5.1.5 DOC:
5.2 Editing DCL Commands
5.3 Disk Files
5.3.1 Disk Quota
5.3.2 Scratch Disk Storage
5.3.3 ARCHIVE
5.3.4 DIRECTORY
5.3.5 Subdirectories
5.3.6 File Protection
5.3.7 DELETE
5.3.8 PURGE
5.3.9 COPY
5.3.10 RENAME
5.4 Obtaining Output
5.4.1 TYPE
5.4.2 PRINT
5.4.3 Printing to a Local Printer
5.5 Handy Short Cuts 10%
5.5.1 Logical Names
5.5.1.1 Creating Logical Names
5.5.1.2 Deleting a Logical Name
5.5.1.3 Displaying Logical Names
5.5.1.4 Search Lists
5.5.1.5 Default Process and Job Logical Names
5.5.2 Symbols
5.5.2.1 Abbreviating Symbol Names
5.5.2.2 Displaying A Symbol Definition
5.5.2.3 Deleting a Symbol
5.5.3 USERPATH
5.5.4 LOGIN.COM
5.6 Communicating With Other Users
5.6.1 FINGER
5.6.2 MAIL
5.6.3 PHONE
5.7 Running Programs

DETAILED COURSE OUTLINE (continued):

5.8 Command Files and Batch Jobs 5%
5.8.1 The SUBMIT Command
5.8.1.1 /CHARACTERISTIC

PROGRAMMING COMPONENT Total Time Allocated To Unit II 50%

1 An Introduction to Business Computer Use 5%
- 1.1 An Introduction to Computers
- 1.2 Getting Started
- 1.3 Biological History of Computing

2 Problem Solving For Business 5%
- 2.1 Program Development Cycle
- 2.2 Programming Tools

3 Fundamentals of Programming Languages 5%
- 3.1 Numbers
- 3.2 Strings
- 3.3 Data Input
- 3.4 Built-in Functions
- 3.5 Screen Placement and Formatting

4 Business Procedures 5%
- 4.1 Subprograms, Part I
- 4.2 Subprograms, Part II
- 4.3 Functions
- 4.4 Modular Design

5 Decisions 5%
- 5.1 Relational and Logical Operators
- 5.2 IF Blocks
- 5.3 SELECT CASE Blocks

6 Repetition 5%
- 6.1 DO Loops
- 6.2 Processing Lists of Data with DO Loops
- 6.3 FOR...NEXT Loops

7 Arrays 5%
- 7.1 Creating and Accessing Arrays
- 7.2 Using Arrays
- 7.3 Sorting and Searching
- 7.4 Two-Dimensional Arrays

8 Sequential Files 5%
- 8.1 Sequential Files
- 8.2 Using Sequential Files

9 Random-Access Files 5%
- 9.1 Data Types
- 9.2 Random Access Files

10 The Graphical Display of Data 5%
- 10.1 Introduction to Graphics
- 10.2 Specifying a Coordinate System
- 10.3 Line Charts
- 10.4 Bar Charts
- 10.5 Pie Charts

IV. SUGGESTED EVALUATION

Three examinations will be given. Exams, quizzes, mainframe application assignments, class participation, written cases and/or a research paper.

Suggested point distribution:

	Points
Major Exams	500
Case assignments and/or paper(s)	500
Mainframe Assignments (4 or 5)	400
Quizzes (15 each)	150
Participation - 10% of total points	

Recommendation to the Instructor

Although mainly a lecture-oriented course, students should be informed that a substantial amount of lab-time is required. (3-4 hours a week) for developing solutions to assignments.

Mainframe application assignments should vary, each assignment requiring student to implement the concepts and approaches covered in class. These should correspond to textbook content. The instructor should encourage students to allocate their time equally between class, individual and group effort as an effective means to learn the material. Group activities may be extended to projects and introduction of group decision support systems (GDSS).

V. RECOMMENDED TEXTS (or equivalent)

Bohl, Marilyn, and Rynn, Maria, Tools for Structured Design, 3rd Ed., MacMillan Purblishing Company; New York, NY 1993.

Sze, T. W. Introduction to VAX/VMS System, University of Pittsburgh Press; Pittsburgh, PA 1988.

Miller, Phillip L., and Miller, Lee W., Programming by Design, Sp. Ed., Carnegie Publishing, Inc.; Pittsburgh, PA 1987.

VI. SPECIAL RESOURCE REQUIREMENTS: None

VII. REFERENCE LIST

Bolsky, Morris L., The C Programmer's Handbook, Prentice-Hall, Englewood Cliffs, New Jersey, 1985.

Bolsky, Morris L., The UNIX System User's Handbook, Prentice-Hall, Englewood Cliffs, New Jersey, 1985.

Brown, Douglas L., From Pascal to C, Wadsworth Publishing Co., Belmont, California, 1985.

Crawley and McArthur, Structured Programming Using Pascal, Prentice Hall, Englewood Cliffs, New Jersey, 1988.

REFERENCE LIST (continued)

Duntemann, Jeff, Complete Turbo Pascal, Second Edition, Scott, Foresman/Little, Brown, Lexington, Massachusetts, 1987.

Duntemann, Jeff, Complete Turbo Pascal, Third Edition, Scott, Foresman/Little, Brown, Lexington, Massachusetts, 1988.

Duntemann, Jeff, Turbo Pascal Solutions, Scott, Foresman/Little, Brown, Lexington, Massachusetts, 1988.

Forkner, Turbo Pascal for Business, Prentice Hall, 1990.

Franz, Martin and Good, Phillip, Writing Business Programs in C Language, Chilton Book Co., Radnar, Pennsylvania, 1985.

Friedman, Linda Weiser, Comparative Programming Languages: Generalizing the Programming Function, Prentice Hall, Englewood Cliffs, New Jersey, 1991.

Hirsch, Pascal Programming, Prentice Hall, Englewood Cliffs, New Jersey, 1987.

Horn, Structured Programming in Turbo Pascal, Prentice Hall, Englewood Cliffs, New Jersey, 1990.

Jones and Harrow, Problem Solving Using Turbo Pascal, Prentice Hall, Englewood Cliffs, New Jersey, 1986.

Monro, A Crash Course in Pascal, Prentice Hall, Englewood Cliffs, New Jersey, 1987.

Morgan, Kenneth J., Introduction to Structured Programming Using Turbo Pascal Version 5.0 on the IBM PC, Merrill Publishing Co., Columbus, Ohio, 1986.

Peterson, James L., and Silbershatz, Abraham, Operating System Concepts, Addison-Wesley Publishing Company, Reading, Massachusetts, 1985.

Pratt, Pascal: A New Introduction to Computer Science,

Singlemann and Longhurst, Business Programming Logic: A Structured Approach, 3rd Edition, Prentice Hall, Englewood Cliffs, New Jersey, 1990.

Staugaard, Structuring Techniques: An Introduction Using Turbo Pascal, Prentice Hall, Englewood Cliffs, New Jersey, 1989.

Traister, Robert J., Going from BASIC to C, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1985.

Turner, Raymond W., Operating Systems: Design and Implementations, Macmillan Publishing Company, New York, New York, 1986.

Wintermeyer, Introduction to Programming Logic for Business Applications, Prentice Hall, Englewood Cliffs, New Jersey, 1987.

III. Course Analysis Questionnaire

Section A: Details of the Course

A1. This course covers content dropped from IM 241 Introduction to MIS per the revision to IM 300 IS: Theory and Practice approved by the Senate January 26, 1992. The content includes mainframe computing and elementary programming skills needed by students wishing to pursue careers in that field.

This course or CO 110 (Problem Solving and Structured Programming) will be required of MIS majors and open to the general business student as an elective. Either IM 200 or CO 110 will be a prerequisite to CO 220, and will put the content in proper sequence. It will not be included in the Liberal Studies requirements.

A2. This course will not require changes in other IM courses. However, since it is on the current list of "free" electives, the number of free electives will be reduced from three to two.

A3. This course or its equivalent was at one time part of the MIS program at IUP. It is customary to offer a two course sequence in information management to business students. This, and the recently approved IM 300, will offer

A4. This course has not been offered as a special topic. It was however part of the program for MIS majors at one time; therefore, this proposal is essentially a reinstatement of content.

A5. This is not a dual level course.

A6. Does not apply.

A7. Most other institutions offer this as the first of a two-course sequence for all business students and majors and require it of majors (See "Computer Curricula in AACSB-Accredited Business Schools" by Chen, Danesh, and Willhardt, Interface, Winter 1991-92, Vol. 13, Issue 4) (Attached).

A8. Skills are those fundamental to the study of data processing. Incorporation of this material into the old IM 241 has been deleted since content cannot be covered adequately unless treated separately.

Section B: Interdisciplinary Implications

B1. This course will be taught by one instructor.

B2. No corollary courses are needed.

B3. This course will provide business students with mainframe computer knowledge prerequisite to indepth study of COBOL

(Common Business Oriented Language). COBOL is offered by both the Computer Science and MIS Departments. This content is not covered in computer literacy (IM 101).

B4. No

Section C: Implementation

C1. Current resources are adequate to teach this course.

C2. There is no grant funding.

C3. This course may be offered one or two times per year depending on demand.

C4. One.

C5. The ideal number of students in any section would be 25, however, 30 could be accommodated.

C6. See attached survey following.

C7. This course or its equivalent will be:

1. A requirement for all MIS majors in the College of Business, and reduce the number of their electives from three to two. It will not necessitate an increase in total credits.

2. An elective for business students desiring to build an MIS minor.