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Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

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Proposing Department/Unit MIS and Decision Sciences	Phone 357-5944

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

1. Course Proposals (check all that apply)

_X_ New Course	_____Course Prefix Change	_____Course Deletion
_____Course Revision	_____Course Number and/or Title Change	_____Catalog Description Change

IFMG 460 Analysis and Logical Design

Current Course prefix, number and full title	_Proposed course prefix, number and full title, if changing_

2. Additional Course Designations: check if appropriate

_____ This course is also proposed as a Liberal Studies Course.   _____ Other: (e.g., Women's Studies,
_____ This course is also proposed as an Honors College Course.   Pan-African)

3. Program Proposals

	_____Catalog Description Change	_____Program Revision
_____New Degree Program	_____Program Title Change	_____Other
_____New Minor Program	_____New Track	

Current program name	_Proposed_ program name, if changing

4. Approvals

		Date
Department Curriculum Committee Chair(s)	_KMBum_	4/8/03
	Elizabeth M. Pure	4/8/03
Department Chair(s)	_Louise B. Burky_	4/8/03
College Curriculum Committee Chair	_Q Jacani_	9 Ap 03
College Dean	_R Camp_	4/9/03
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate:		
(include title)		
UWUCC Co-Chairs	_Gail S. Sechrist_	4/15/03

* where applicable

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LIBERAL STUDIES

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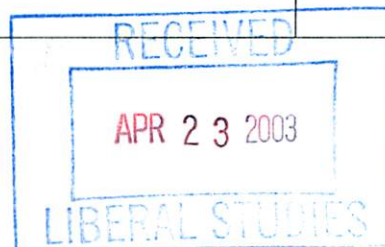
Syllabus of Record

I. Catalog Description

IFMG 460 Analysis and Logical Design   3 class hours

        0 lab hours

Prerequisites: IFMG 352 and 450   3 credit hours

        (3c-0l-3cr)

Involves teaching the tools and techniques required for the analysis and design of a business system. Along with in class discussions of the principles and techniques for analyzing, designing, and constructing the system, the students will also formulate system teams in order to analyze the problems of an existing business information system, to design an improved system, and to control the implementation of the new system.

II. Course Objectives

Students will be able to:

1. Identify methods by which systems may be analyzed and developed.
2. Explain the functional subsystems of a firm together with detailed procedures for designing and controlling the implementation of such systems.
3. Analyze the problems of a real business information system and to design an improved system.

III. Detailed Course Outline

1. Systems Planning   (3 hours)
   a. Preliminary Investigation

2. Systems Analysis   (3 hours)
   a. Determining requirements
   b. Analyzing requirements
   c. Evaluating alternatives and strategies

3. Midterm I and Evaluation Testing   (2 hours)

4. System Design   (6 hours)
   a. General System Design
   b. Output Design, Forms Control
   c. Input Design
   d. File Design
   e. Design Phase Report and Review

5. System Implementation Preparation   (6 hours)
   a. Preparing for Implementation
   b. Computer Program Development
   c. Development Phase Report and Review

6. System Operation and Control   (10 hours)
   a. Operation Phase Overview
   b. Changeover and Routine Operation
   c. Performance Evaluation and Control

7.   Midterm II and Evaluation Testing   (2 hours)

8.   System Analysis and Design Project Implementation   (10 hours)
      a.   The students will formulate system teams.
      b.   The students will analyze the problems of a business information
            system of their choice or one assigned by the instructor.
      c.   The student will prepare progress reports of their analysis of the
            existing system and submit to the professor for review.
      d.   The final report of the systems analysis project will be prepared and
            submitted to students' professor and project leader.
      e.   The student will design an improved system based on the
            recommendations and guidelines presented in the approved analysis
            project report.
      f.   The complete results of the new system design will be documented and
            a design phase report will be prepared.

9.   Final examination   (2 hours)

IV.   Evaluation Methods

20%   Homework assignments and research paper. These will be based on material discussed in
       class and on aspects of the project.

45%   Examinations. Two in-class exams and a final exam all of which count equally.
       Examinations consist of short-answer, analysis, and what-if questions.

35%   Project. The project is to analyze and design a business information system of their
       choice or one assigned by the instructor. The student will have to demonstrate that the
       completed project is functional.

       1.   It is essential that students formulate the system teams to simulate a real world
             situation. Therefore, an organizational meeting has to be held prior to conducting
             any analysis activities. The role and responsibilities of the individual team
             member must be initially identified.

       2.   Students will research the library and Internet for a parallel system.

       3.   Students may visit other companies with the intent of analyzing systems with
             similar design considerations.

Grading Scale: A: $\geq$90% B: 80-89% C: 70-79% D: 60-69% F: <60%

V.   Course Attendance Policy

In accordance with University policy, individual faculty will denote an attendance policy on
specific course syllabi.

VI.   Required Textbook(s), Supplemental Books and Readings

Kendall, K., & Kendall, J. E. Systems Analysis and Design, 5th Edition, Prentice Hall, Upper
Saddle River, NJ 2002.

VII.   Special Resources

No special resource requirements.

VIII.   Bibliography

Fertuck, L. Systems Analysis and Design with Modern Methods, B&E Tech, Dubuque, IA, 2000.

Hoffer, J. et. al. Modern Systems Analysis and Design, 3rd Edition, Prentice Hall, Upper Saddle River, NJ, 2002.

Marakas, G.M. Systems Analysis and Design: An Active Approach, Prentice Hall, Upper Saddle River, NJ, 2001.

Martin, M. P. Analysis and Design of Business Information Systems, 2nd Edition, Prentice Hall, Upper Saddle River, NJ, 1995.

McLeod, R. Systems Analysis and Design: An Organizational Approach, Dryden Press, Orlando, FL, 2000.

Schmidt, A. Working with Visible Analyst for Windows, Prentice Hall, Upper Saddle River, NJ, 1996.

Valacich, J.S. et. al. Essentials of Systems Analysis and Design, Prentice Hall, Upper Saddle River, NJ, 2001.

COURSE ANALYSIS QUESTIONNAIRE

Section A: Details of the Course

A1   How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course.

System analysis and design principles are necessary for students to grasp fundamental and advanced concepts of requirement determinations as well as procedures for using the information collected to accomplish the logical design and user interface of the information system. An introduction is provided to introduce the knowledge tools needed to develop data flow diagrams, Entity-Relationship (ER) diagrams, unified Modeling Language (UML) documentation and a data dictionary. Most of our students go to companies that will require them to function in these areas. Also, the department Corporate Advisory Board has suggested the need for extensive exposure of the students to these areas. This course will fit into the programs of the department by meeting this need. The course is designed with MIS majors in mind, but any student with the necessary background will be accepted.

A2   Does this course require changes in the content of existing courses or requirements for a program? If catalog descriptions of other courses or department programs must be changed as a result of the adoption of this course, please submit as separate proposals all other changes in courses and/or program requirements.

The course does require the major change of collapsing the present two Analysis and Design courses into one integrated course. It will serve as a requirement for MIS majors.

A3   Has this course ever been offered at IUP on a trial basis (e.g. as a special topic)? If so, explain the details of the offering (semester/year and number of students).

This is a revision that collapses the content of two existing courses into one.

A4   Is this course to be a dual-level course? If so, please note that the graduate approval occurs after the undergraduate.

The course is not intended to be listed as dual level.

A5   If this course may be taken for variable credit, what criteria will be used to relate the credits to the learning experience of each student? Who will make this determination and by what procedures?

The course may not be taken for variable credit.

A6   Do other higher education institutions currently offer this course? If so, please list examples (institution, course title).

Quite a number of universities and colleges offer this integrated course in various forms and modifications. For example, the School of Library and Information Science of the University of Pittsburgh and Kent State University offer versions of this course.

University of Pittsburgh: INFSCI 1024 Information Systems Analysis and Design
Analysis, design, implementation, and evaluation of information systems. Emphasis on analysis of user information needs, system design methodologies, system development, life cycle, and evaluation techniques. Focus is on the integration of technology, procedures, and people. (Prerequisites: INFSCI 1004 or INFSCI 1022)

Penn State: M I S 432 Information Systems Analysis, Design, and Implementation (3)
The analysis, design, and development of business information systems through traditional and modern methods. Prerequisite: M I S 431

Marshall University: MIS 310 Business Systems Analysis and Design. 3 hrs., I, II
This course covers business application systems development, behavioral considerations in the development process, feasibility assessment, requirement analysis, and communication skills. Emphasis on prototyping and fourth generation languages. (PR. ACC 216, MGT 218, MTH 203).

Marshall University: MIS 411 Applied Business Systems Analysis and Design, 3 hrs., I, II. This course extends the concepts and techniques in MIS 310 to enable students to design and implement systems in a business environment. The implementation of a computer application will be required (PR. MIS 310).

A7   Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency? If so, please provide documentation.

The Association for Computing Machinery (ACM), the Association for Information Systems (AIS) and the Association for Information Technology Professionals (AITP) all recommend this course.

Section B: Interdisciplinary Implications

B1   Will this course be taught by instructors from more than one department? If so, explain the teaching plan, its rationale, and how the team will adhere to the syllabus of record.

The course is designed to be taught by one MIS instructor per semester.

B2   What is the relationship between the content of this course and the content of courses offered by other departments? Summarize your discussions (with other departments) concerning the proposed changes and indicate how any conflicts have been resolved. Please attach relevant memoranda from these departments that clarify their attitudes toward the proposed change(s).

The course does not overlap with any other courses at this University. Although other departments may offer courses with similar topics, this course is specifically designed for the needs, interests, and context required for our MIS majors. This course already exists. The update of the syllabus of record is mostly an updating of the tools and methods used to implement the content of the course. The basic nature and purpose of this course has not been changed.

B3   Will this course be cross-listed with other departments? If so, please summarize the department representatives' discussions concerning the course and indicate how consistency will be maintained across departments.

This course will not be cross listed.

B4   Will seats in this course be made available to students in the School of Continuing Education?

Seats will be made available to Continuing Education students meeting the prerequisites.

Section C: Implementation

C1   Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty.

What will be taught less frequently or in fewer sections to make this possible? Please specify how preparation and equated workload will be assigned for this course.

Faculty resources are currently adequate.

C2　What other resources will be needed to teach this course and how adequate are the current resources? If not adequate, what plans exist for achieving adequacy? Reply in terms of the following:

Space: 　Classroom space is adequate. The ECB lab 111 is adequately equipped for this course.

Equipment: 　The Eberly laboratory is adequately equipped for this course; however, software for UML, and object-oriented languages may need to be purchased.

Laboratory Supplies and other Consumable Goods: The MIS-DS Department has licensed copies of COBOL and Visual Basic.net and other application software for projects. However, periodic updates will be required to keep up with the technology.

Library Materials: There is an adequate source of reading material in Stapleton Library.

Travel Funds: No travel funds are needed.

C3　Are any of the resources for this course funded by a grant? If so, what provisions have been made to continue support for this course once the grant has expired? (Attach letters of support from Dean, Provost, etc.)

No resource for this course is funded by a grant.

C4　How frequently do you expect this course to be offered? Is this course particularly designed for or restricted to certain seasonal semesters?

Once a semester.

C5　How many sections of this course do you anticipate offering in any single semester?

At least one section.

C6　How many students do you plan to accommodate in a section of this course? What is the justification for this planned number of students?

Approximately 30 students will be accommodated in a section of the course.

C7　Does any professional society recommend enrollment limits or parameters for a course of this nature? If they do, please quote from the appropriate documents.

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

C8　If this course is a distance education course, see the Implementation of Distance Education Agreement and the Undergraduate Distance Education Review Form in Appendix D and respond to the questions listed.

Presently, this course is not a distance education course.

Section D: Miscellaneous

1.　**Summary of Proposed Change**

This course, IFMG 460, involves a combination of both system analysis and design teaching the tools and techniques. It is designed to replace IFMG 451 under the new streamlined 120 credit

program. The analysis and design of a business system is a necessary prerequisite to system implementation. Along with in class discussions of the principles and techniques for analyzing, designing, and constructing the system, the students will also formulate system teams in order to analyze the problems of an existing business information system, to design an improved system, and to control the implementation of the new system.

2.   **Justification/Rationale for the Change**

System analysis and design provides an introduction to the knowledge of the principles and techniques involved in conceptualizing a business information system. The system can be implemented utilizing a variety of methodologies including COBOL, Visual Basic, and Object-Oriented languages. Documentation will utilize UML, Pseudocode, Flow Charts, and other relevant methodologies. Our students go to companies that require them to be proficient in one of these methodologies. The department Corporate Advisory Board has suggested the need for extensive exposure of the students to these areas. This course will fit into the programs of the department by meeting this need.

3.   The current syllabus for IFMG 451 is attached for reference.

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MIS & DECISION SCIENCES DEPARTMENT
Spring 2003
IFMG 451 SYSTEMS ANALYSIS

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Instructor:	Dr. James Solak
Office:	207-A Eberly College of Business
Phone:	724-357-7780
E-mail:	jsolak@iup.edu
Office Hours:	11:30 - 1:00 M-W-F and 7:30 – 8:00 W
Prerequisites:	IFMG 255 or COSC 220 and IFMG 350

Beginning with the Summer 2000 term, there will be absolute enforcement of every prerequisite requirement for the course-work offered by the Eberly College of Business & Information Technology. This means that students cannot postpone prerequisites and take them after the course in question.

The dean's office is responsible for monitoring course prerequisites. Students who manage to register for coursework in spite of the fact that they do not have the appropriate prerequisites will be subject to unilateral withdrawal after the course has commenced. At that time, no appeal will be accepted and adding a class after the official registration period will not be approved.

Beginning Spring Semester 2003, the university individual course withdrawal deadline date of Tuesday, March 25, 2003, will be enforced. A request for a deadline waiver must be sought through the Assistant Dean for Academic Services in Room 208. Requests will only be granted: 1)contingent upon documentation of catastrophic circumstances as stated in the IUP Undergraduate Catalog; and/or 2) through written feedback from the instructor noting advisement to the student to postpone withdrawing pending an additional test or assignment.

Course Description: Develops an understanding of concepts and techniques involving conventional and structured approaches to analyzing problems of business information systems and systems definition feasibility, as well as quantitative and valuative techniques of business information systems analysis.

Writing for Communication: IFMG 451 has been approved as the MIS Department's writing-intensive course. When a business is analyzed, it is of utmost importance that there is a clear understanding between the systems analyst, the user of the system, and management. One way to obtain this understanding is to require and provide written communication in the form of technical reports.

In order to partially complete the writing-intensive requirements, each student must analyze an individual system and produce technical reports. As well, a writing-intensive research paper is required.

Textbook: <u>Systems Analysis and Design</u>, 5th Edition, by Kendall and Kendall.

Course Outline:

Chapter

PART 1 SYSTEMS ANALYSIS FUNDAMENTALS

1	Assuming the role of the systems analyst
2	Understanding organizational style and its impact on information systems
3	Determining feasibility and managing analysis and design activities

PART 2 INFORMATION REQUIREMENTS ANALYSIS

4	Sampling and investigating hard data
5	Interviewing
6	Using questionnaires
7	Observing decision-making behavior and office environment
8	Prototyping

PART 3 THE ANALYSIS PROCESS

9	Using data flow diagrams
10	Analyzing systems using data dictionaries
11	Describing process specifications and structured decisions
12	Analyzing semistructured decision support systems
13	Preparing the systems proposal
14	Writing and presenting the systems proposal

GRADING PROCEDURES

The student's grade in Systems Analysis is based on the following:

1.	Test 1 (evening test) CHAP 1-3, DFD'S, & HANDOUTS	50 PTS
2.	Test 2 (evening test) CHAP 4-8, DD'S, Mini Specs, & HANDOUTS	50 PTS
3.	Final exam CHAP 12-14 & HANDOUTS	50 PTS
4.	Writing-intensive technical reports	72 PTS
5.	Group Project	100 PTS

Description of group project:

Students will complete a team project composed of various parts. In completing these segments, individual students will be required to complete assignments which will not be graded separately. All assignments, plus graphs, tables, charts, etc. will be combined to form one completed group project. All students in the team will receive the same grade provided each student completes his part of the project.

6.   Classroom Participation

Student attendance is mandatory for each class period. Three absences are permitted. Each absence above three will result in a reduction of 3 points.

7.   Grading Scale: 90-100=A; 80-89=B; 70-79=C; 60-69=D; below 60=F

In order for the student to receive a grade for this course each student must take the midterm, final exam, and complete their part in the group project, including participation in the oral presentation of the group project. Otherwise, the student will receive an incomplete grade (I), and will be required to make up the work the next term that the course is offered.

Supplemental Readings (Optional):

Systems Analysis and Design, 4th Edition, Gary Shelly, Thomas Cashman, and Harry Rosenblatt. Course Technology, 2001.

Systems Analysis and Design, George M. Marakas, Prentice Hall, 2001.

Systems Analysis and Design Methods, 5th edition, Jeffrey L. Whitten, Lonnie D. Bentley, and Kevin C. Dittman. McGraw-Hill, 2000.

Systems Analysis and Design, Kendall and Kendall. Prentice Hall, 4th ed., 1999.

System Analysis & Design, Len Fertuck. William C. Brown Publishers, 1995.

Structured Analysis and System Specification, Tom Demarco. Prentice Hall, 1978.

Systems Analysis and Design in a Changing World, 4th Edition by Satzinger, Jackson, & Burd. Course Technology, 2000.