

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
		02-801	App 4/15/03	App 4/29/03

**Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee**

Contact Person Kustim Wibowo	Email Address kwibowo@iup.edu
Proposing Department/Unit MIS and Decision Sciences	Phone 357-2931

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)**

New Course                       Course Prefix Change                       Course Deletion

Course Revision                       Course Number and/or Title Change                       Catalog Description Change

IFMG 230 Introduction to Back End Business Application

<i>Current Course prefix, number and full title</i>	<i>Proposed course prefix, number and full title, if changing</i>

**2. Additional Course Designations: check if appropriate**

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

This course is also proposed as an Honors College Course.

**3. Program Proposals**

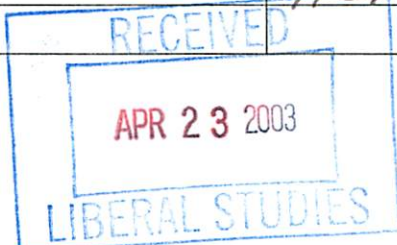
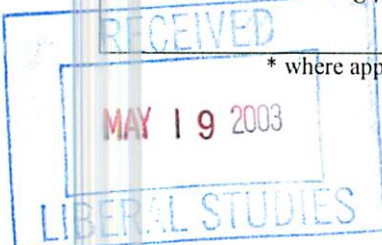
New Degree Program                       Program Title Change                       Program Revision

New Minor Program                       New Track                       Other

<i>Current program name</i>	<i>Proposed program name, if changing</i>

4. Approvals	Date
Department Curriculum Committee Chair(s) <i>KMP...</i>	4/8/03
Department Chair(s) <i>Elizabeth M. Peice</i> <i>Leanne B. Beverly</i>	4/8/03 4/8/03
College Curriculum Committee Chair <i>[Signature]</i>	9/6/03
College Dean <i>[Signature]</i>	4/9/03
Director of Liberal Studies *	
Director of Honors College *	
Provost *	
Additional signatures as appropriate: (include title)	
UWUCC Co-Chairs <i>Gail Schuist</i>	4/15/03

\* where applicable



## Syllabus of Record

### I. Catalog Description

IFMG 230 Introduction to Back-End Business Applications	3 class hours 0 lab hours 3 credit hours
Prerequisites: ACCT 201 and IFMG 210	
	(3c-0l-3cr)

Introduces the student to the Back-End Business programming language as it applies to business organizations and their applications. Structured Back-End Business concepts and methods are taught as the student learns how to solve business problems using computers. The student will be involved using files, reports, and tables to produce a variety of outputs utilized in operating and managing business activities.

### II. Course Objectives

Students will be able to:

1. Obtain the knowledge of good problem solving techniques that can be used with any programming language.
2. Understand the fundamental organization of a Back-End Business programming language.
3. Become acquainted with the proper procedures to design and write high quality Back-End Business programs.
4. Use practical applications to illustrate the use of Back-End Business programs.
5. Accelerate the learning of Back-End Business programming using the assignments and programming exercises.

### III. Detailed Course Outline

1. Introduction to Back-End Business and Program Development (2 hours)  
Explain the advantages and disadvantages of Back-End Business programming languages. Introduce the information processing, stream of input/output, and steps in the programming process. (Back-end Business applications refer to software applications, typically resident on both the client and the server, that assist in the production data extract process for a business system.)
2. A Complete Back-End Business Program Overview (2 hours)  
Introduce a complete Back-End Business programming set including how to manipulate data input/output, data manipulation, data storage, develop procedures, and how to write a functional output.
3. Program Environments, Data Types, and Data Storage (2 hours)  
Examine system and program requirement considerations. Explore data categories, data types, user data types, data edit patterns, and other data symbols.

4. **Data Validation, Conditional, and Selections** (3 hours)  
Implement class, sign, value test, range, presence and absence tests. Study the conditional program execution using simple, nested, combined, and complex if-statements, implied subjects and implied operators, and evaluate and move statements.
5. **Arithmetic, Branching, and Simple Reports** (4 hours)  
Distinguishing several mathematical calculations such as add, subtract, multiply, divide, and compute statements. Study the branching techniques such as simple perform, perform until, in-line perform, perform times, perform varying, go to, and go to depending on statements. Introduce report writing.
6. **Midterm I and Evaluation Testing** (2 hours)
7. **Sort and Record Selection Processing** (2 hours)  
Defining and implementing sorting and record selection processing to write more complex reports.
8. **Table and Table Processing** (2 hours)  
Define a dimensional embedded table, non-embedded table. Load a non-embedded table and define multi-dimensional table. Differentiate between a subscript and an index. Code a search statement for tables.
9. **Data Manipulation and Control Breaks** (2 hours)  
Explain all inspect statement possibilities to make a better report using several control break methodologies.
10. **File Maintenance**
  - a. **Sequential File Maintenance** (3 hours)
  - b. **Indexed and Relative Files** (3 hours)
11. **Midterm II and Evaluation Testing** (2 hours)
12. **The Report Writer and Debugging** (3 hours)  
Describe the features of the report writer feature. Explain the use of a control field and any options of an entry field. Explain the debugging feature and finding logic errors.
13. **Object-Oriented Programming** (4 hours)  
Explain the nature of O-O programming. Describe the use of classes, encapsulation, inheritance, and polymorphism. Explain the use of methods. Describe the difference between a factory method and an instance method.
14. **The World Wide Web, CGI program, and Hyperlink** (2 hours)  
Introduce the WWW, generate web applications, building the input and output pages, generate CGI programs, execution from the CGI program, and accessing data from files.
15. **File and Database Processing** (4 hours)

Accessing a relational database. Introduce SQL. Create simple and complex queries. Linking tables and accessing multiple rows.

16. Final Examination (2 hours)

**IV. Evaluation Methods.**

1. 20% Homework assignment, class-work, and quizzes. These will be based on material discussed in class.
2. 40% Programming projects. About three to four projects of varying complexity based on material discussed during the semester.
3. 40% Examination. The examinations consist of what-if questions, short-essays, analysis, and explanations. Three exams (10%, 10%, and 20%) will be administered during the semester.

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

**V. Undergraduate 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.**

1. Stern & Stern, Structured COBOL programming for the year 2000 and beyond, 9<sup>th</sup> Edition, John Wiley, 2000.
2. Shelly, Cashman, and Foreman, Structured COBOL programming, 2<sup>nd</sup> Edition, Course Technology, 2000.

**VII. Special Resource Requirements.**

No special resource requirements.

**VIII. Bibliography.**

1. Collopy, Introduction to COBOL, A Guide to Modular Structured Programming, Prentice Hall, 2000.
2. Murach, Prince, & Menendez, Structured COBOL, Mike Murach & Associates, 2000.
3. Price, Elements of COBOL Web Programming with Micro Focus Net Express, Norcal Printing, 1999.
4. Reeves, COBOL Programming using the .NET Framework, Prentice Hall, 2002
5. Welburn & Price, Structured COBOL Fundamentals and Style, 4<sup>th</sup> Edition, McGraw-Hill, 1995.

## 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.

This course will replace IFMG 255 Business Applications in COBOL and IFMG370 Advanced COBOL. The IFMG 230 Introduction to Back-End Business Application will introduce students to the business file processing including file recording, storage, back-up, report creation and display. This course is required for students majoring in MIS. Other students in the Eberly College of Business and IT may take this course as an elective.

- 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.

This course will not require changes in the content of existing courses.

- 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 course has never been offered as a special topic.

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

This course is not intended to be 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?

This course is not intended to be taken for variable credit.

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

A number of institutions offer similar Back-End Business programming for MIS students. For example:

University of Houston: 3371: Transaction Processing Systems I Cr. 3. (3-0).

Prerequisites: junior standing, DISC 2373 or COSC 2410, DISC 3370 with at least a "C+", and ACCT 2332 and MIS major or MIS minor in Computer Science (Business Option).

Transaction driven information systems, including system design, file design, program structure, and internal control.

University of Texas, Austin: 333. COBOL with Business Applications.  
Prerequisite: Computer Sciences 304P or Management Information Systems 304.  
Beginning, intermediate, and advanced topics in COBOL programming with business systems applications; file processing, simulation.

University of Connecticut: 203C. Business Information Systems. Either semester. Three credits.  
Prerequisite: ACCT 131.  
Open only to School of Business students; others with the consent of the Operations and Information Management Department Head. Information needs of managers, the structure of the information systems required to fill these needs, systems development, business computing technology, and management applications within major business functional subsystems.

- 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.

This course will not be team-taught.

- 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).

This 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 is proposed by the MIS-DS Department and 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 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 - The Eberly classrooms are adequate for this course.

\*Equipment - The Eberly computer labs are adequate for this course

\*Laboratory Supplies and other Consumable Goods - The MIS-DS Department has enough software and computer supplies to support this course. However, the computer hardware and software will require periodic update to meet the technological advancements and requirements.

\*Library Materials - The Stapleton Library has enough reading material for this course.

\*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 will be 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**

Include any additional information valuable to those reviewing this new course proposal.

1. **Summary of the proposed change.**  
The new course, IFMG 230, is a combination of the IFMG 255 and IFMG 370 courses. The number of credit hours will remain 3 cr.
2. **Justification for the change.**  
Due to the increase of topics and subject areas in the management information systems discipline, we have found it necessary to combine most of the contents of IFMG 255 and IFMG 370 to enable us address the important topics that students need without extending the total number of credits required. IFMG 370 will be replaced as well.
3. The current syllabus for IFMG 255 is attached for reference.

**INDIANA UNIVERSITY OF PENNSYLVANIA  
EBERLY COLLEGE OF BUSINESS & INFORMATION TECHNOLOGY  
MIS & DECISION SCIENCES DEPARTMENT  
Spring 2003**

**IFMG 255 BUSINESS APPLICATIONS IN COBOL**

**Instructor:** Dr. James A. 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:** ACCT 201 Principles of Accounting &  
IFMG 205 Foundations of MIS

Beginning with the Summer 2000 term, there will be absolute enforcement of every prerequisite requirement for the coursework 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:** Introduces the student to the COBOL programming language as it applies to business organizations and their applications. Structured COBOL concepts and methods are taught as the student learns how to solve business problems using computers. The student will be involved using files, reports, and tables to produce a variety of outputs utilized in operating and managing business activities.

**Textbook:** Structured COBOL Programming, 2nd Ed., by Shelly, Cashman, & Foreman, 2000.

<b>Course Outline:</b>	Chapter	
	1	Introduction to COBOL & Program Development
	2	A Complete COBOL program
	3	Environment Division & Data Division
	4	IF, MOVE, & Data Validation
	5	Arithmetic & Branching Statements, and Writing to a Report
	6	The COBOL Sort Statement
	8	Data Manipulation & Control Breaks

**Grading Procedures:** The student's grade in IFMG 255 is based on the following:

1. 3 Programs at 75 points each 225 pts  
Completing each program involves:  
A. documenting, B. coding and C. generating correct output.
2. Test 1 (evening test) on program 1 concepts 50 pts
3. Test 2 (evening test) on program 1 and 2 concepts 50 pts
4. Final exam on program 1, 2, and 3 concepts 50 pts
5. 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.
6. Grading Scale: 90-100=A; 80-89=B; 70-79=C; 60-69=D; below 60=F

**Supplemental Readings (Optional):**

COBOL From Micro to Mainframe, 3<sup>rd</sup> Edition, Robert T. Grauer, Carol Vazquez Villar, and Arthur R. Buss. Prentice Hall, 2000.

Structured COBOL Programming, 9<sup>th</sup> Edition, Nancy and Robert A. Stern. John Wiley & Sons, Inc., 2000.

COBOL: Structured Programming Techniques for Solving Problems, 2<sup>nd</sup> Edition, R. Fowler. Course Technology, 1996.