

## COURSE DESCRIPTION

**Department and Course Number** CMPS 353      **Course Coordinator** Nona Etheredge

**Course Title** Principles of File Organization & Processing      **Total Credits** 3  
**URL** <http://www.ucs.louisiana.edu/~dls1115/cmcs353/cmcs353.htm>      **Semester hours** 3

### Current Bulletin Description

File structures - their manipulation and management, application to commercial systems, techniques for data storage and retrieval. Sp. Prereq: CMPS 260 with a minimum grade of C.

### Textbook

COBOL for the 21<sup>st</sup> Century, 11<sup>th</sup> Edition, Nancy Stern, Robert A. Stern, and James P. Ley  
ISBN: 0-471-72261-8, Paperback, 832 pages, August 2005.

### References

Class notes

### Course Goals

- Obtain experience in the manipulation of data structures that are relevant to a commercial based COBOL system
- Develop a working knowledge of a practical business model
- Identify the relevant COBOL syntax and associated data structures to implement a practical business system
- Understand and apply the software development life cycle

### Course Outcomes

- Students implement the business model using the COBOL programming language
- Students have a working knowledge of a transaction based business system
- Students have practical hands on experience in implementing as well as maintaining a software based system that has been developed with the aid of proven software engineering practices

### Prerequisites by Topic

1. Experience in developing and applying data structures to solve a computing problem

### Major Topics Covered in the Course

- COBOL program structure ( 4 hours)
- Record structures using the Cobol programming languages (2 hours)
- File Organization and processing (5 hours)
- Sequential and indexed files (3 hours)
- Random and direct file access organization (2 hours)
- Applied software engineering techniques to a business based software system (20 hours)

- Interactive and batch programs (3 hours)
- Control break processing (2 hours)
- Various data validation techniques and the respective applications (10 hours)
- Sorting and merging data (1 hour)
- Software documentation (8 hours)

#### **Laboratory projects (specify number of weeks on each)**

- Preliminary Cobol syntax, file execution, and program submission techniques (1 week)
- Editing features in Cobol, record moves, and screen design (1 week)
- Techniques to develop a single level control break program (1 week)
- Concepts and techniques to load and display tables (1 week)
- Build a new master file from an existing master file via a transaction file (1 week)
- Use the Cobol merge statement to join 2 files together for sequential processing (1 week)

#### **Oral and Written Communications**

Every student is required to submit at least   0   written reports (not including exams, tests, quizzes, or commented programs) of typically   0   pages and to make   0   oral presentations of typically   0   minutes duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

#### **Social and Ethical Issues**

Please list the topics that address the social and ethical implications of computing covered in all course sections. Estimate the class time spent on each topic. In what ways are the students in this course graded on their understanding of these topics (e.g., test questions, essays, oral presentations, and so forth)?

Emphasis is placed on the course content as each course topic relates to developing, implementing, and maintaining a commercially based Cobol system.

#### **Theoretical Content**

- Program correctness, pre and post conditional testing of data extraction techniques (15 hours)
- Program execution environment (10 hours)

**Problem Analysis**

After each lab, students are given a typical problem scenario from an actual business application that has previously been implemented in a production environment. The problem includes the user based requirements, such as, screen and report layouts, and other system features. The student is then expected to implement the user request to achieve the desired results.

**Solution Design**

Each student is responsible for his/her own design as well as implementation of the proposed business problem.