

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: STRUCTURED ANALYSIS AND DATA MANAGEMENT  
Code No.: EDP 212-8  
Program: \_\_\_\_\_  
Semester: \_\_\_\_\_  
Date: SEPTEMBER 1983  
Author: J. DICKS

New: \_\_\_\_\_ Revision: X

APPROVED:

  
\_\_\_\_\_  
Chairperson

Sept '83  
\_\_\_\_\_  
Date

STRUCTURED ANALYSIS AND DATA MANAGEMENT  
Course Name

EDP 212-8  
Course Number

Course Overview and Objectives:

This course stresses that transaction processing requires that data transaction records be grouped into files, collections of data, for storage and processing. These data records may be organized differently depending on the way in which they are used. The hierarchical structure of files, data access, organization and access modes are studied in relation to use in a typical transaction processing system.

Basic concepts of file processing using the COBOL programming language are studied in depth. The development of problem-solving skills in this area is emphasized rather than the syntax of the COBOL language.

The systems analysis starts with an overview - a theoretical foundation and then bridges the gap between theory and practice by detailing the specific technical and organizational steps which must be taken to synthesize a comprehensive integrated systems plan for the management information function.

The analysis concludes with an overall system design and implementation incorporating system procedural phases and data management techniques.

Texts Required:

1. Information Systems: Theory and Practice

John G. Burch Jr.  
Felix R. Strater  
Gary Grudnitski

2. Structured COBOL

A. S. Philippahis and Leonard J. Kazmier  
McGraw-Hill Book Company

Student Performance Requirements:

1. Interspersed throughout the course will be assignments/exercises designed to implement the practical aspect. The student will be responsible for demonstrating that he/she has assimilated the techniques learned in a correct and timely fashion.
2. The complete implementation of a batch information system is to be completed following the theory and design of the system.

3. The student will submit a learning contract to completely design and implement an on-line interactive information system. The contract must be approved prior to commencement of the system and the student must abide by all terms of the contract in order to maintain the grade he/she indicates is justifiable upon completion of the system. Any deviation from the original contract necessarily results in re-contracting at a lower grade.

Evaluation:

Tests	30%
Batch System	25%
On-line system based on Malcolm's self-learning contract theory.	25%
Beer Barn system (programs written in Semester 3)	20%
	<u>100%</u>

Grading System:

85 - 100% .....	A
75 - 84% .....	B
60 - 74% .....	C
less than 60% .....	I or R

### Creating Sequential Files:

- concepts of creating sequential files
- utilities to create a sequential file
- changing record length during file creation
- adding a sort to the create process
- validating input data during the create process

### Merging Files:

- the basic concept of merging files
- sequence checking in the merge process
- processing of duplicate records in a merge
- adding a sort to the merge process
- utility merging
- assignment

### Sorting Files:

- concepts of sorting files
- software techniques of the tournament and collation sort phases
- the COBOL SORT verb
- sorting with utilities
- exercises

### Updating Sequential Files:

- the concept of updating a sequential file
- the change process
- the add process
- the drop process
- combining additions/changes/deletions
- changing keys of records in sequential files
- exercises

### Creating and Using ISAM Files:

- the concepts of an indexed sequential file
- the software process behind the ISAM file
- creating an ISAM file
- using ISAM files in a sequential manner
- using ISAM files in a random mode with batch processing
- using ISAM files in a random mode with ON-LINE
- assignment