

COMPUTER SCIENCE 158

DATA ANALYSIS, MANAGEMENT & PRESENTATION

I. Introduction

A. Catalog Description

This course is an introduction to the use of desktop computers as tools for data analysis, data management and data presentation. Applications software, including spreadsheets, database management, and presentation software, is used to solve problems in business and other fields. The software is also used to publish data on the Web. Students planning to take further courses in computer science should register for CSCI 161. CSCI 158 cannot be used as a prerequisite course for CSCI 250 or CSCI 261. *Prerequisites: two years of high school algebra, MATH 110, or equivalent.*

B. Objectives

CS 158 is designed to acquaint students with the underlying concepts of computer software used for manipulating data. This course will give students the ability to choose the appropriate computer applications tool to solve problems in business and other fields. The course also will introduce students to advanced features of spreadsheet software, database management systems, data presentation software and to the principles of spreadsheet and database design. By the end of the course, students will:

- understand the basic design of a microcomputer
- understand and be able to use computer terminology
- know the functions of an operating system
- understand the purpose and power of a computer spreadsheet
- be able to use a spreadsheet to build models
- understand the purpose and power of a database management system
- be able to design and use a database
- understand the purpose and power of data presentation software
- be able to use data presentation software
- integrate applications with each other and the Web

C. Prerequisites

Two years high school algebra or Math 110, or equivalent.

II. Required Topics

A. Computers and Computer Organization

1. Computer Architecture
2. Computer Operating Systems
3. Disk & File Organization
4. Data Representation

B. Spreadsheets

1. Design and Documentation
2. Basic Spreadsheet Manipulation
3. Formulas and Functions
4. Graphs
5. Look-up Tables
6. Web Pages with a spreadsheet application
7. Macros

C. Database Management Systems

1. Design of Databases
2. Queries
3. Forms
4. Reports
5. Macros
6. User Interface

D. Data Presentation Software

1. Planning a Presentation
2. Creating and Formatting Presentations
3. Sharing and Connecting Data and Presentations

III. Optional Topics

A. Spreadsheet Templates

B. Visual Basic for Applications (VBA)

C. HTML/XHTML

D. Advanced Features of DBMS

IV. Bibliography

Parsons and Oja. New Perspectives on Computer Concepts, Cambridge, MA: Course Technology, Inc., 1998.

Parsons, June Jamrich, et al. Microsoft Excel2002, Cambridge, MA: Course Technology, Inc.,2004.

Adamski, Joe, et al. Microsoft Access2002, Cambridge, MA: Course Technology, Inc.,2002.

Carey, Patrick. HTML and XHTML. Cambridge, MA: Course Technology, Inc.,2005.

Rutkosky, Rita. Microsoft PowerPoint 2003, St. Paul, MN: Paradigm Publishing, 2004.

V. Assessment Tools.

Assessment of the extent to which a student meets the course objectives will be measured with homework assignments, quizzes, computer case studies and projects.