

**WEST VIRGINIA UNIVERSITY AT PARKERSBURG**  
**UNIFORM COURSE SYLLABUS**

**Name of Course** File Processing **Course No.** CS 221

**Department** Computer Science **Division** Technology

**I. Course Objectives**

To be able to:

1. Identify the appropriate structure of the inputs and outputs needed in a typical problem.
2. Identify the data structures and algorithms needed to correctly transform the inputs into outputs.
3. Provide quantitative measures to guide your choices among alternative data structures and algorithms.
4. Apply structured design, development, implementation and testing techniques to the solution of complex programming problems.
5. Implement selected data structures and algorithms to solve problems on a computer.
6. Resolve technical problems using reference manuals.

**II. Topics to be Studied**

File Processing Concepts  
Basic Processing Sorts and Sorting Analysis  
Linked Lists in Secondary Storage  
Stacks, Queues  
External Sorts  
Types of Searching and Searching Analysis  
Single and Multi-Level Directives  
Inverted Files and Multilists  
Hashing  
Binary Trees in Secondary Storage  
Balancing and Traversing Tree Structures  
Heapsort  
B-Trees

**III. Special Projects to be Included in Course**

None

**V. Methods of Student Evaluation**

1. At least 3 tests, including Comprehensive Final
2. Programs (at least 4), quizzes, outside research

WEST VIRGINIA UNIVERSITY AT PARKERSBURG  
CS 221 (continued)

**V. Assessment of Outcomes**

75% of all students who complete the course will attain an evaluation of C or better. This evaluation will reflect the student's mastery of the course objectives.

**VI. Other Information**

Course Description:

Organization of external files including sequential, direct, and indexed file relationships in a database management system; creating, updating, searching and sorting under various file structures; applications using a high-level structured programming language.

Prerequisites: CS 122 and Math 115 or Consent

**Updated March 2004**