

WEST VIRGINIA UNIVERSITY AT PARKERSBURG  
UNIFORM COURSE SYLLABUS

Name of Course Database Theory and Design Course No. CS 301

Department Computer Science Division Technology

I. Course Objectives

Upon completion of the course, students should be able to:

1. Understand the role of a database in an information system.
2. Explain the difference in hierarchical, network and relational database designs.
3. Design a database using proper normalization techniques.
4. Determine the appropriate security needed in a database.
5. Identify the major file structures used in database design.
6. Understand the current trends in database theory and where the future in this area is heading.

II. Topics to be Studied

How will course objectives be met?

<u>Topic</u>	<u>Number of Weeks</u>
1. Overview of DBMS, DBMS Architecture	1
2. DBMS file structures	1
3. Relational Database Management	4
4. Hierarchical Database Management	2
5. Network Database Management	2
6. Database Design Using Normalization	3
7. Relational Algebra and Calculus	1
8. Security and Integrity of Database System	1
9. Distributing Systems and Future Trends	1

III. Special Projects to be Included in Course

Research papers	Reports
Surveys	Annotated bibliographies
Other	

Projects where databases will be designed and implemented.

## Uniform Course Syllabus CS 301

### IV. Methods of Student Evaluation

Tests (how many? how often? what type?)

Quizzes

Oral Presentations

Written Papers

Laboratory Activities

Clinical Experiences

3 tests will be given

2 tests during the semester and a comprehensive final

Type of tests – Short answer, problems, and essay

### V. Assessment of Outcomes

What measurements will be used to demonstrate that outcomes have been reached? (Refers to class as a whole, not individual students.)

95% of the students will be able to complete a major database project using proper normalization, security and file structure techniques.

### VI. Other Information

What additional information will help to clarify the course?

None.

6/92

Reviewed 5/5/03