

COURSE OUTLINE PHP and Databases

Course Description

IN 118. PHP and Databases. 3 hours credit. Prerequisite: IN 112 with a C or better or instructor approval. This course will enable the student to create server-side Web applications using databases.

Course Relevance

Database enhanced web systems are a key component of internet architecture. This course provides the basic concepts to allow the student to develop the skills necessary to understand, create, and modify customized database application programs in a Web-based environment.

Required Materials

Gosselin, D. (2006). *PHP programming with MySQL*. Florence, KY: Cengage Learning

The student will need administrative privileges to a computer to install and run a Web server such as Apache and a RDBMS such as MySQL.

Supplemental Materials

USB Flash Drive: 1 GB minimum

Learning Outcomes

The intention is for the student to be able to

1. Demonstrate a basic understanding of the concepts of server-side Web application design
2. Demonstrate a basic understanding of the concepts of database applications

Learning PACT Skills that will be DEVELOPED and/or documented in this course:

Through the student's involvement in this course, he/she will develop his/her ability in the following PACT skill areas:

Technology Skills

1. Discipline-specific technology
 - By designing and writing Web-based software applications related to specific fields, the student will demonstrate the ability to interact with field specific server-based applications.

Major Summative Assessment Task(s)

These learning outcomes and the Learning PACT skills will be demonstrated by:

1. Completing a summative project to create a server-side Web application tied to a database.

Course Content

- I. Themes - Key recurring concepts that run throughout the course:
 - A. Configure data driven Web applications
 - B. Problem discovery, analysis and documentation process
- II. Issues - Key areas of conflict that must be understood in order to achieve the intended outcome:
 - A. Understanding the conflict between the ideal design and the development of a practical application
- III. Concepts - Key concepts that must be understood to address the issues:
 - A. The common techniques for translating a problem into Web-based database solutions
 - B. Importance of logic in the design of computer software
- IV. Skills/Competencies - Actions that are essential to achieve the course outcomes:
 - A. Design a Web-based database
 - B. Use Structured Query Language to extract data from a database
 - C. Describe the use of logic in the development process
 - D. Create a Web page using XHTML and a scripting language
 - E. Create a Web form and link it to a database
 - F. Access files and records using a server-side scripting language
 - G. Analyze and design a complete software application

Learning Units

- I. Design of relational databases
 - A. Main elements of a relational database
 - B. Create a relationship between databases
 - C. Understand the normalization rules
- II. Development of a simple database
 - A. Create a database
 - B. Create database tables
 - C. Create relationships between tables
- III. Interfacing to relational databases
 - A. Connecting with a server-side scripting language
 - B. Connecting with a RDBMS
- IV. Introduction to Structured Query Language
 - A. Single table queries
 - B. Multiple table queries
 - C. Joins and subqueries
- V. Analysis and design of applications
 - A. Conceptual explanation
 - B. Logical design
 - C. Physical design

VI. HTML and scripting

- A. Scripting with a server-side scripting language
- B. HTML and JavaScript
 - 1. Create Web forms
 - 2. Use regular expressions

Learning Activities

Independent and collaborative learning activities will be assigned to assist students in achieving the intended learning outcomes. Learning activities will involve the student in the creation and design of applications independently or in collaboration with others. This will include various aspects of design, technology, and project management. Homework, small group projects, readings, computer exercises, and research assignments will prepare the student to be equipped to successfully complete the major assessment tasks.

Grade Determination

The student will be graded on learning activities and assessment tasks. Grade determinants may include the following: daily work, quizzes, chapter or unit tests, comprehensive examinations, student projects, student presentations, class participation, and other methods of evaluation employed at the discretion of the instructor.