IT-2600: E-BUSINESS PROGRAMMING TECHNOLOGIES

Cuyahoga Community College

Viewing: IT-2600 : E-Business Programming Technologies

Board of Trustees:

May 2023

Academic Term:

Fall 2023

Subject Code

IT - Information Technology

Course Number:

2600

Title:

E-Business Programming Technologies

Catalog Description:

Exploration and implementation of web programming technologies to design, create, debug and test client/server applications. Technologies include, but are not limited to, PHP, SQL, and a server-side stack or framework.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

2

Requisites

Prerequisite and Corequisite

IT-2310 Web Programming, and IT-2351 Enterprise Database Systems; and IT-1050 Programming Logic; or IT-2650 Java Programming; or IT-2670 C/C++ Programming Language, or IT-2680 Visual C#.NET.

Outcomes

Course Outcome(s):

Utilize web programming technologies to design, create, debug and test client/server applications.

Objective(s):

a. Define and explain client/server terminology.
b. Demonstrate an understanding of PHP, HTML, and CSS through properly designed applications including MVC (Model View Controller).
c. Define concepts and terminology relating to PHP programming.
d. Demonstrate an understanding of server-side programming by creating properly constructed programs that demonstrate an understanding of objects and methods.

Course Outcome(s):

Create secure Web applications with database connections.

Objective(s):

a. Create, update and edit SQL databases.
b. Populate database tables.
c. Securely connect to a database from PHP.

d. Query data from a database using PHP.
e. Explain the fundamental principles of secure server-side programming.

Methods of Evaluation:
a. Class participation and discussion
b. Hands-on computer lab projects
c. Comprehensive project
d. Exams
e. Quizzes

Course Content Outline:
a. XAMPP (Cross-platform, Apache, MariaDB, PHP, Perl) or comparable stack
    i. Download and installation for Mac, Windows, or Linux
    ii. Configure XAMPP or use Tri-C virtual machine
b. Client-server architecture
    i. History of PHP
    ii. Interaction of PHP, HTML, and CSS
    iii. Edit, test, and deploy a PHP application
c. PHP Concepts
    i. Storing and retrieving data
    ii. PHP data types
    iii. GET and POST arrays
    iv. String and numeric expressions
    v. Decision statements
    vi. Using the PHP online documentation
    vii. Object-oriented PHP
    viii. Error and Exception Handling
d. Relational databases and MySQL
    i. Database normalization
    ii. phpMyAdmin or similar tool to create and edit MySQL databases
    iii. Connection strings
    iv. SELECT, INSERT, UPDATE and DELETE statements
e. Model View Controller (MVC)
    i. MVC pattern and files
    ii. Functions and redirect requests
f. PHP Programming
    i. Conditional expressions
    ii. Selection and iteration structures
    iii. Strings, dates, and arrays
    iv. Cookies and sessions
    v. Creating functions with parameters and libraries of functions
    vi. Create classes, constructors, destructors, methods, and objects
    vii. Working with forms
        1. Validation, required statements, URL/E-mail
        2. Includes
        3. JSON
g. E-Commerce and Security
    i. E-commerce security issues
    ii. Web application security
    iii. SSL, digital certificates, and certification authorities
    iv. Implementing authentication with PHP and MySQL
    v. Implementing secure transactions with PHP and MySQL
    vi. Cryptography libraries
h. PHP XML
    i. Parsers
    ii. DOM

  i. PHP AJAX
      i. Database
     ii. Live Search

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Resources

Duckett, Jon. *PHP & MySQL: Server-side Web Development*. 1st ed. Wiley, 2021.

Murach, Joel and Ray Harris. *Murach's PHP and MySQL*. 3rd ed. Mike Murach and Associates, 2017.

Weisfeld, Matt. *The Object Oriented Thought Process*. 5th ed. Indianapolis, Ind.:SAMS Pub, 2019.

Powers, David. *PHP 7 Solutions: Dynamic Web Design Made Easy*. 4th. 2019.

Resources Other

1. PHP at w3schools.com: https://www.w3schools.com/php/default.asp
2. PHP Documentation: https://www.php.net/docs.php
4. MySQL at w3schools.com: https://www.w3schools.com/mysql/default.asp

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