

Revised Spring 2016

ITP225

Web Scripting Languages

COURSE OUTLINE

Prerequisites:

ITD110 and ITP140 or instructor's permission.

Course Description:

ITP 225 Web Scripting Languages (3 CR) Prerequisite: ITD 110, ITP 100 and ITP 140 or divisional approval. Introduces students to the principles, systems, and tools used to implement Web applications. Provides students with a comprehensive introduction to the programming tools and skills required to build and maintain interactive Web sites. Students will develop Web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. Lecture 3 hours per week.

ITP 225 is the complementary tool to ITP140 with 225 covering the server-side of the applications and ITP140 covering the client side. Auxiliary tools include MySQL database access, jQuery and Ajax frameworks, among others.

Semester Credits: 3 Lecture Hours: 3 Lab/Recitation Hours: 0

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Course Outcomes

At the completion of this course, the student should be able to:

1. Be able to review and program using the introductory topics from ITD110 and ITP140
2. Be able to create simple PHP programs
3. Understand constructs of the PHP language
4. Understand how to debug PHP applications
5. Be able to work with arrays (associative and indexed)
6. Be able to create HTML forms, and respond to the forms with PHP
7. Understand how to make PHP forms sticky
8. Be able to create a MySQL driven web site
9. Understand common programming techniques for adding, deleting, editing, and sorting database output
10. Understand how to use cookies and sessions
11. Be able to code to prevent XSS and SQL Injection attacks
12. Describe XML applications and analyze their strengths and weaknesses, relative to other technologies.
13. Develop DTD's and XML Schema's for XML languages.
14. Build applications that utilize custom XML languages and XSLT programming
15. Be able to code applications that combine, jQuery, Ajax, and PHP
16. Understand web security topics
17. Be able to work with PHP classes and objects and understand the singleton design pattern.

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Required Materials:

NetBeans Software (free download from the Internet)

Textbook:

Required: **PHP and MySQL for Dynamic Web Sites, 4th edition** by Larry Ullman,
ISBN 978-0-321-78407-0

The following supplementary materials are available:

1. Safari Online is available for students to view other Java books online for free
2. Internet searches are a fundamental source for auxiliary materials on Java
3. Video movies provided by the instructor.

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Topical Description: (Outline chapters and sections to be covered in the book – may include timeline)

Daily or Weekly Schedule (NOTE: Modules are two weeks in length):

EACH MODULE REQUIRES A LABORATORY TO BE SUBMITTED IN BLACKBOARD

Module 1: Review of XHTML, Forms, CSS, JavaScript, and an Intro to PHP

Learning objectives:

1. Remember how to write XHTML and CSS, XHTML forms, and form validation
2. Understand how to create and run PHP programs
3. Understand PHP variables, Strings, and numbers
4. Understand how to use PHP decision constructs
5. Understand how to use PHP loop constructs
6. Understand PHP array usage

Reading Assignment:

Review material from ITD110 and ITP140
PHP text – Chapter 1 and parts of Chapter 2

Laboratory Assignment

Module 1 Lab – Introduction to PHP constructs and variables

Module 2: Forms and form validation

Learning objectives:

1. Understand how to break your PHP scripts into multiple files
2. Be able to understand handling HTML forms
3. Understand what a sticky form is and why you want to use them
4. Understand how to use sticky forms
5. Be able to create your own PHP functions
6. Be able to implement and use your own PHP functions
7. Review JavaScript data validation
8. Be able to use simple PHP form data validation

Reading Assignment:

PHP text – Chapters 2 (finish) -3

Laboratory Assignment:

Module 2 Lab – Form and form validation

Module 3: MySQL Database Review, Error Handling, and Intro to PHP Database

Learning objectives:

1. Review MySQL and how to create tables and how to run queries on the tables
2. Understand how to determine whether the errors are in JavaScript, PHP, or MySQL.



3. Be able to understand and debug PHP errors
4. Understand how to test your database queries
5. Be able to connect to MySQL through PHP code
6. Be able to implement simple queries from MySQL with PHP code
7. Understand how to retrieve database data with PHP
8. Understand inserting, deleting, altering and selecting data from a MySQL database through PHP applications

Reading Assignment:

PHP text – Chapters 4-9. NOTE: Chapters 4-7 are a review of MySQL – probably in more detail than we need but good material. **Use these chapters as references during the class. You do not have to be an expert on all of these topics.**

Laboratory Assignment:

Module 3 Lab – Introductory PHP Database project

Module 4: Creating Dynamic Web Sites with MySQL

Learning objectives:

1. Understand how to send values to a script
2. Be able to write code to edit existing records
3. Understand how and when to use hidden form inputs
4. Understand how to paginate your query results
5. Be able to sort your displays

Reading Assignment:

PHP text –Chapter 10

Laboratory Assignment:

Module 4 Lab – Dynamic Web Application Driven by MySQL

Module 5: Cookies and Sessions

Learning objectives:

1. Understand the concept of cookies
2. Understand the concept of sessions
3. Describe how Cookies are used and implemented in PHP
4. Describe how Sessions are used and implemented in PHP
5. Be able to describe the advantages of sessions over cookies

Reading Assignment:

PHP text – Chapters 12

Laboratory Assignment:

Laboratory 5 – Sessions

Module 6: File Uploads, JavaScript, Headers, Securitysions

Learning objectives:



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1. Understand how PHP works with JavaScript
2. Understand HTTP Headers
3. Understand how to do file uploads with PHP
4. Understand how to prevent Spam
5. Be able to code to prevent XSS and SQLInjection attacks
6. Validate files by type

Reading Assignment:

PHP text – Chapters 11 and 13

Laboratory Assignment:

Laboratory 6 – Misc topics

Module 7: XML - DTD's & Schemas, XPath Expressions, XSLT Transformations, Namespaces, and XML Integration

Learning objectives:

1. Describe XML applications and analyze their strengths and weaknesses, relative to other technologies.
2. Develop DTD's and XML Schema's for XML languages.
3. Build applications that utilize custom XML languages and XSLT programming.

Reading Assignment:

TBA

Laboratory Assignment:

TBA

Module 8: Ajax, jQuery and DOM integrated into an E-Commerce application

Learning objectives:

1. Review the DOM and how to interact with it
2. Be able to utilize the DOM to change a page structure
3. Be able to handle events asynchronously
4. Use request objects to fetch details from the server
5. Begin integrating jQuery into a full application
6. Understand and end-to-end e-commerce application (both shopping and administrative side)

Reading Assignment:

PHP text – Chapter 15, 17, 19

Laboratory Assignment:

Get the Chapter 19 application running

Project: Complete the Wishlist application (alteration of the application found at <https://netbeans.org/kb/docs/php/wish-list-tutorial-main-page.html>).

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Learning objectives:

1. Review the DOM and how to interact with it
2. Review database connectivity
3. Learn how to use classes and objects in PHP
4. Add security and avoid SQL injection for the application
5. Deploy the application

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Notes to Instructors

(List information about optional topics, departmental exams, etc)

1. Each module is two weeks long and requires both a quiz and a laboratory assignment submitted through Blackboard
2. A midterm exam is optional
3. A semester long project is required
4. A comprehensive final may be used in lieu of the project

