Java Programming 3 – Java Web Development

(48 hours)

ITSE 2073

COURSE SYLLABUS

Course Description: This course is a hands-on, practical look at creating basic Java Web Apps using Servlets and JSP's. The class covers the basics of the HTTP protocol, GET and POST handling, Request and Response handlers, generation of the response HTML to send back to the client, request and response headers and Session variables. The class also covers a web framework to interact with and style the web apps you create.
Prerequisites: ITSE 1071 Java Programming: Part II and ITNW 1059 Introduction to WWW Authoring, HTML, and CSS (offered in Webmaster Certificate Program) or comparable knowledge and experience.

Required books: The Java Tutorial: A Short Course on the Basics, Sharon Zakhour, Sowmya Kannan, Raymond Gallardo, 5th edition, ISBN 978-0132761697. Murach's Java Servlets and JSP, Joel Murach, 3rd Edition, ISBN 978-1890774783.

Objectives: Every student will be able to:

- Create and deploy a Java Web Application
- Incorporate static content into an application
- Use Servlets and JSPs to create dynamic content
- Use the HTTP Session to preserve user state between requests
- Use HTML forms to create user interactivity

Evaluation: Students will be evaluated on their competency in performing a variety of hands-on exercises created to insure the student has achieved all course objectives throughout the course, and class participation. In order to grant CEU credit for a course, the students must be able to complete assignment exercises for each part of the course given by the instructor. The instructor will evaluate each participant's achievement of the course objectives by signing and awarding individual certificates of completion.

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Course Outline:

I.   How a web server works
    A.   Servers, IP addresses and ports
    B.   The HTTP protocol

II. Getting started
    A. Configuring a web container
    B. Setting up a web application
    C. Deploying a web application
    D. Context URL
    E. Working with static resources
    F. Just enough @Annotations

II. JSPs
    A.   Dynamic vs. static content
    B.   Creating and accessing raw JSPs

III. Standard tag library
    A.   Declaring taglibs in a page
    B.   JSTL basic taglibs - core, format and functions taglibs
    C.   Using EL

IV. Servlets
    A.   Servlet mapping via annotations
    B.   HTTP GET and doGET
    C.   RequestDispatcher and JSP hiding
    D.   Request attributes
    E.   Servlet lifecycle

V.   HTTP Session
    A.   Understanding the session
    B.   Accessing and updating session state

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VI.   Forms and POST
      A.   Creating HTML forms
      B.   doPost
      C.   Validation and handling errors
      D.   Redirect after success pattern

VII. Polishing up a web application
      A.   Error pages
      B.   Creating a layout
      C.   Preventing HTML injection

VIII. Final Project