CONESTOGA

COURSE OUTLINE

Course Programming: JAVA Web Technologies (2014-2015)

Code / Version PROG2240 (102)

Total Hours 45

Credits 3

PreRequisite(s) PROG2370 (100) Object Oriented Game Prog
and PROG1800 (103) Programming Dynamic Websites
or PROG1800 (102) Programming: Web Fundamentals

CoRequisite(s)

Course Description

This course teaches the student to build Web applications using the Java development environment. The student will learn server side development including session management, database access, testing, debugging and exception handling.

PLAR Eligible: Yes

Course Outcomes

Successful completion of this course will enable the student to:

1. Identify the three common approaches for developing Java web applications.
2. Use a Servlet/JSP editor and debugging tool such as NetBeans.
3. Use a Java Web container such as Apache Tomcat.
4. Develop Java web applications using Servlets and JavaServer Pages (JSPs).
5. Incorporate sessions and cookies to temporarily store user preferences and information.
6. Incorporate Expression Language (EL) and JSP Standard Tag Library (JSTL) into an application to create JSP pages without relying on scripting elements.
7. Write unit tests using the JUnit framework.
8. Use JDBC to store and access data from a relational database such as MySQL.
9. Incorporate listeners and filters using the servlet 2.3 specification.

Unit Outcomes

Successful completion of the following units will enable the student to:

1.0 Explore Web Programming in Java

- 1.1 Describe the different approaches for developing Java web apps.
- 1.2 Distinguish between static web pages and dynamic web pages.
- 1.3 Distinguish between servlets and JSPs.
- 1.4 Describe the steps in servlet/JSP development.

2.0 Code and Test Servlets

- 2.1 Describe servlets and their use of request and response objects.
- 2.2 Describe servlet mapping.
- 2.3 Describe the use of the init, doGet, doPost, and destroy methods in a servlet.
- 2.4 Incorporate initialization parameters for servlets and for the entire application.
- 2.5 Write debugging data for a servlet to either the console or a log file.
- 2.6 Use the MVC pattern to develop web applications so servlets control the processing and JSPs handle the presentation.

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3.0 Code and Test JavaServer Pages

- 3.1 Describe the characteristics of a JavaBean.
- 3.2 Code and test a JavaBean.
- 3.3 Describe JSP tags including JSP directive, JSP scriptlet, JSP expression and JSP comment to maintain older web applications.
- 3.4 Describe the role of the session object for retaining information.
- 3.5 Describe the use of request object and session object in JSPs.
- 3.6 Incorporate the use of standard JSP tags with JavaBeans (i.e., useBean, getProperty, setProperty tags), and JSP includes.
- 3.7 Test and deploy a Web application to a Java Web container such as Apache Tomcat.

4.0 Use JSP's Expression Language (EL)

- 4.1 Describe the role of EL in JSP.
- 4.2 Incorporate the use of EL for JSP development.

5.0 Use JSP Standard Tag Library (JSTL)

- 5.1 Describe the role of tag libraries and their importance for JSP development.
- 5.2 Incorporate the use of JSTL for JSP development.
- 5.3 Use taglib directives to determine what tag libraries are used in a JSP page.

6.0 Describe and Use Custom Error-Handling Mechanisms

- 6.1 Describe the various sources of errors such as JSP coding errors, logical errors, and user data-entry errors.
- 6.2 Code and test custom error handling with web.xml configuration file and JSP custom error pages.

7.0 Describe and Use Database Access Techniques

- 7.1 Describe Java Database Connectivity (JDBC).
- 7.2 Write data classes that provide Create, Read, Update and Delete (CRUD) methods to a relational database.
- 7.3 Describe and use connection pooling to manage persistent data.

8.0 Use listeners and filters

- 8.1 Describe HTTP request and response
- 8.2 Code a class for the listener.
- 8.3 Code and configure a filter.

9.0 Write Unit Tests

- 9.1 Write and test Java methods using JUnit.
- 9.2 Build and run a test suite using NetBeans.

Required Student Resources

Joel Murach and Michael Urban. Murach's Java Servlets and JSP (3rd). Mike Murach & Associates.

Optional Student Resources

Evaluation

The minimum passing grade for this course is 55 (D).

In order to successfully complete this course, the student is required to meet the following evaluation criteria:

Assignments	40.00

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Test 1	30.00
Test 2	30.00
	100.00 %

Other

Conestoga College is committed to providing academic accommodations for students with documented disabilities. Please contact the Accessibility Services Office.

The policies and procedures in the Conestoga College Student Guide apply to this course.

Prepared By Meyer Tanuan

School Information Technology

Date 2014-11-11