A POLYTECHNIC INSTITUTION

School of Computing and Academic Studies
Program: Computer Information Technology
Option: N/A

Course Outline

COMP4711
Internet Software Development

Start Date:	January 2009				**End Date:**	April 2009	
Total Hours:	45	**Total Weeks:**	15		**Term/Level:**	4	**Course Credits:** 3
Hours/Week:	3	**Lecture:**	1	**Lab:** 2			

Prerequisites

Course No.	**Course Name**
COMP2510 or COMP 2525	C Programming or Object Oriented Programming with Java

COMP4711 is a Prerequisite for:

Course No.	**Course Name**

■ Course Description (required)

This course provides the students with an opportunity to develop a software application that works across the internet. An overview of various internet software development technologies is provided. Students will learn how to build a web application using Apache Tomcat and JSPs; and how to use XML for data representation, structure and transport.

■ Evaluation

Assignments	30%	Comments:
Labs	40%	
Midterm Examination	%	
Final Examination	30%	
TOTAL	100%	

■ Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- Construct a Java web application
- Construct a valid and well-formed XML document
- Constrain XML data through a DTD or schema
- Transform XML data using XSL
- Process XML data using both DOM and SAX models
- Transport XML data reliably using common messaging protocols
- Exchange data between dissimilar data sources, using XML

Verification

I verify that the content of this course outline is current.

Jim Parry	*Nov 30, 2008*
Authoring Instructor	Date

I verify that this course outline has been reviewed.

Program Head/Chief Instructor	Date

I verify that this course outline complies with BCIT policy.

Dean/Associate Dean	Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

Instructor(s)

Jim Parry

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Learning Resources

Required Software:

- ***NetBeans*** development environment, version 6.5; free download from www.netbeans.org
- Java SDK v6, free download from java.sun.com

Required Text:

- ***None***

Supplementary Guides:

O'Reilly pocket guides for those technologies that you plan to use after the course would be very handy. Candidates include:

- XML Pocket Reference (3rd edition, ISBN 0-596-10050-7)
- XSLT 1.0 Pocket Reference (ISBN 0-596-10008-6)
- JavaServer Pages Pocket Reference (ISBN 0-596-00231-9)
- HTML and XHTML Pocket Reference (3rd edition, ISBN 0-596-52727-6)
- JavaScript Pocket Reference (2nd edition, ISBN 0-596-00411-7)
- CSS Pocket Reference (3rd edition, ISBN 0-596-51505-7)

■ Information for Students

(*Information below can be adapted and supplemented as necessary.*)

Assignments: Late assignments, lab reports or projects will **not** be accepted for marking. Assignments must be done on an individual basis unless otherwise specified by the instructor.

Makeup Tests, Exams or Quizzes: There will be **no** makeup tests, exams or quizzes. If you miss a test, exam or quiz, you will receive zero marks. Exceptions may be made for **documented** medical reasons or extenuating circumstances. In such a case, it is the responsibility of the student to inform the instructor **immediately**.

Ethics: BCIT assumes that all students attending the Institute will follow a high standard of ethics. Incidents of cheating or plagiarism may, therefore, result in a grade of zero for the assignment, quiz, test, exam, or project for all parties involved and/or expulsion from the course.

Attendance: The attendance policy as outlined in the current BCIT Calendar will be enforced. Attendance will be taken at the beginning of each session. Students not present at that time will be recorded as absent.

Illness: A doctor's note is required for any illness causing you to miss assignments, quizzes, tests, projects, or exam. At the discretion of the instructor, you may complete the work missed or have the work prorated.

Attempts: Students must successfully complete a course within a maximum of three attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon special written permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from the appropriate program.

Course Outline Changes: The material or schedule specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class.

■ Assignment Details

Planned out of class work hours: 1-2 hours for every timetabled hour
Assignments: Four, every three-four weeks, due on Sundays 11.59pm.
Lab Exercises: Weekly, due at the end of lab, with built in hours for working on assignments.

Assignment #1 – Base X schedule webapp; due end of week 3
- Produce a webapp, using JSPs, with a common website structure.
- Sample data will be provided in text form.

Assignment #2 – X database; due end of week 6
- Build well-formed XML documents to contain the X schedule and results.
- Use a DTD to constrain the basic team data.
- Use a schema to constrain the schedule data.
- Each student team will be assigned an X team to be responsible for.

Assignment #3 – X scores processing; due end of week 10
- Enhance the webapp to display team and standing information.
- Use SAX processing to extract new scores data.
- Use DOM processing to update the schedule history.
- Use XSL to present the team and standing information.

Assignment #4 –X schedule presentation; due end of week 14
- Refactor the webapp to display team and standing information using JSP tags.
- Use XSL to present the schedules flexibly.
- Use AJAX to retrieve selection criteria.

The intent of the group of assignments is to guide the student through "proper" design and implementation of a complete small application. All of the assignments will pertain to the same application, and the goal is to have a functional web application by the end of the course.

The mysterious "X" above will be a sport for which team and score information are available online or in a parsable format. This could be something like the CFL/AFL or CONCACAF soccer.

Many design decisions will have already been made, and these will be explained in the assignment handouts. The student(s) will have to complete the design, making low-level choices, and then implement the resulting completed design. Lab exercises will provide workshops to lead the student through the techniques needed to implement each assignment.

Assignment solutions will be posted the day after the due date for any given assignment, for the students to learn from and even perhaps adopt for their next assignment.

The assignments can be done individually or as a pair.

Schedule

Week of/ Number	Outcome/Material Covered	Reference/ Reading	Assignment	Due Date
1	Course introduction & JSP concepts			
2	XML concepts & DTDs		#1	End week 3
3	XML constraints using schemas			
4	XML processing & DOM		#2	End week 6
5	XML processing with SAX			
6	XML and JSPs		#3	End week 10
7	Stylesheets – XSL			
8	XPath			
9	Server-side transforms		#4	End week 14
10	Client-server (XML-RPC)			
11	Client-side manipulation (AJAX)			
12	Advanced XML			
13	Web services			
14	XML trends & course review			
15	Final exam week			

Note: The lecture schedule is a guideline only.