

## **COURSE OUTLINE XML Programming**

### **Course Description**

IN 116. XML Programming. 3 hours credit. Prerequisite: IN 112 with a C or better. This course will enable the student to create and use structured XML vocabularies to store data, exchange information and develop web applications. The student will learn both client and server-side techniques, as well as how to work with Cascading Style Sheets (CSS), XSLT, and be introduced to AJAX scripting.

### **Course Relevance**

The theories and applications learned in this course prepare the student to understand how XML can be used in business and industry to define and exchange data.

### **Required Materials**

Huner. (2007). *Beginning XML (P)*. (4th ed.). Wiley.

Jacobs, S. (2006). *Beginning XML with DOM and Ajax: From novice to professional*. Cambridge, MA: Ajax.

### **Supplemental Materials**

USB Flash Drive: 1 GB minimum

### **Learning Outcomes**

The intention is for the student to be able to

1. Create XML documents
2. Apply style sheets to XML documents

### **Primary Learning PACT Skills that will be DEVELOPED and/or documented in this course:**

Through the student's involvement in this course, he/she will develop his/her ability in the following primary PACT skill areas:

1. Field-Related Technology
  - By designing and creating examples of XML documents and schemas, the student will learn how XML can be used to format data.

Secondary skills (developed but not documented):

Critical Thinking  
Reading  
Problem Solving

## **Major Summative Assessment Task(s)**

These learning outcomes and the primary Learning PACT skills will be demonstrated by

1. Completing a project which demonstrates a fundamental understanding of XML document design

## **Course Content**

- I. Themes – Key recurring concepts that run throughout this course:
  - A. Configure data-driven Web applications
- II. Issues – Key issues that will be addressed in this course: areas of conflict that must be understood in order to achieve the intended outcome:
  - A. The identification of common standards for data exchange
- III. Concepts – Key concepts that must be understood to address the issues:
  - A. Basic problem solving
  - B. Web page design techniques
- IV. Skills / Competencies – Actions that are essential to achieve the course outcomes:
  - A. Creating an XML document
  - B. Creating a document type definition
  - C. Creating an XML Schema
  - D. Understanding the relationship of XML to XHTML
  - E. Creating Cascading Style Sheets
  - F. Understanding AJAX
  - G. Working with the Document Object Model

## **Learning Units**

- I. Working with namespaces
  - A. Adding a namespace to a style sheet
  - B. Combining XML and HTML
- II. Validating an XML document
  - A. Working with child elements
  - B. Working with mixed content
  - C. Working with attribute types
  - D. Working with namespaces and DTDs
- III. Working with schemas
  - A. Applying a schema
  - B. Working with XML schema data types
  - C. Working with named types
  - D. Structuring a schema
  - E. Placing a schema in a namespace
- IV. Working with Cascading Style Sheets
  - A. Working with selectors
  - B. Formatting lists
  - C. Working with borders, margins, and padding

- V. Working with XSLT and XPath
  - A. XPath
  - B. XSLT templates
  - C. Working with templates
  - D. Working with nodes
  
- VI. Creating a computational style sheet
  
- VII. The parser and document object model
  - A. Transforming a document
  - B. Working with the document object
  - C. Adding and removing nodes
  - D. Saving an XML document
  
- VIII. Working with AJAX
  - A. Creating interactive documents
  - B. JavaScript and XML

### **Learning Activities**

Learning activities will involve the student in examining various aspects of XML document creation through lectures, discussions, lab projects, readings, quizzes, and tests.

### **Grade Determination**

The student will be graded on assessment tasks, class participation and discussion, as well as other methods of evaluation determined at the discretion of the instructor.