

## **178375 XML and Web Services, Semester II/2549**

### **Course Description**

As XML and Web Services are the core technologies of modern software development, the knowledge about this technology certainly will prepare students well in working in software industry.

This course teaches you about XML and the important technologies related to XML. These technologies include DTD and XML Schema for defining the schema of XML documents; XPath, XSL, and XSLT for formatting data in XML. In addition, it will teach you about three alternative XML parser APIs which include DOM, SAX, and StAX for parsing XML documents. It also teaches you how to build, deploy, and call Web Services using Java, PHP, and C#.NET

### **Prerequisites**

- 178230 Advanced Computer Programming
- 178231 Data Structures and Algorithms
- 178370 Database Systems

### **Course Type**

- Elective

### **Recommended Textbooks and Web Pages**

- Charles F. Goldfarb and Paul Prescod, "XML Handbook", 5<sup>th</sup> Edition, Prentice Hall
- Sang Shin XML Course Page <http://www.javapassion.com/xml/>
- Sang Shin Web Services Course Page <http://www.javapassion.com/webservices/>

### **Course Objectives**

- Be able to understand and write well-formed XML documents
- Be able to write the schema for the given XML documents in both DTD and XML Schema languages
- Be able to format XML data to the desired format
- Be able to parse XML documents by using DOM, SAX, and StAX
- Be able to create, deploy, and call Web services using Java, PHP, C#.NET

## Teacher

- Instructor: Asst. Prof. Dr. Kanda Runapongsa ([krunapon@kku.ac.th](mailto:krunapon@kku.ac.th))
- Schedule and appointment:  
<http://www.google.com/calendar/embed?src=kanda.runapongsa%40gmail.com>
- Office location: EN4203D or the ESOSS center at the 7<sup>th</sup> floor of Pienvijit Building

## Lecture Time and Place

- Lectures: **Tuesday and Thursday: 10:30-12:00**
- Place: Computer Engineering Building, Room EN4303

## Course Websites

- <http://gear.kku.ac.th/~krunapon/xmlws>
- <http://e-learning.en.kku.ac.th/course/enrol.php?id=31>
- <http://campus.en.kku.ac.th/campusboard>

## Evaluation and Grading

<b>Exam 1: Midterm exam - 3 hours</b>	<b>20%</b>
<b>Exam 2: Final exam - 3 hours</b>	<b>25%</b>
<b>Assignments &amp; Quizzes</b>	<b>20%</b>
<b>Group Project: The group project involves developing a Web service Each group has 2-3 members</b>	<b>25%</b>
<b>Class attendance and participation</b>	<b>10%</b>

### Assignments & Quizzes (20%)

- XML and its XML Schema (3%)
- XML Parsers (5%)
- XML Transformers (5%)
- Basic Web Services
- Advanced Web Services (5%)

### Group Project (25%)

- Project reports (10%)
- Project presentations (5%)
- Work result (10%)

### Class Attendance and Participation

- You are required to attend the class at least 80% to be able to take exams
- You are strongly encouraged to answer and ask questions in class. The teacher can only guide your learning, but it's you who need to learn.

<b>Topics</b>	<b>Number of Hours</b>
<b>Topic 1: SOA, Web 2.0, Web Services</b>	<b>3</b>
<b>Topic 2: Introduction to XML</b>	<b>3</b>
<b>Topic 3: Document Type Definition (DTD)</b>	<b>2</b>
<b>Topic 4: XML Schema</b>	<b>4</b>
<b>Topic 5: XML Parsers</b>	<b>1</b>
<b>Topic 6: Document Object Model (DOM)</b>	<b>2</b>
<b>Topic 7: Simple API for XML (SAX)</b>	<b>2</b>
<b>Topic 8: Streaming API for XML (StAX)</b>	<b>2</b>
<b>Topic 9: Asynchronous JavaScript and XML (AJAX) , Representational State Transfer (REST), RSS (Really Simple Syndication), ATOM</b>	<b>3</b>
<b>Topic 10: XPath</b>	<b>2</b>
<b>Topic 11: Extensible Markup Stylesheet Transformations (XSLT)</b>	<b>2</b>
<b>Topic 12: Simple Object Access Protocol (SOAP)</b>	<b>2</b>
<b>Topic 13: Web Services Description Language (WSDL)</b>	<b>2</b>
<b>Topic 14: Universal Description, Discovery and Integration (UDDI)</b>	<b>1</b>
<b>Topic 15: Web Services Development using Java</b>	<b>4</b>
<b>Topic 16: Web Services Development using PHP NuSOAP</b>	<b>3</b>
<b>Topic 17: Web Services Development using Microsoft C#.NET</b>	<b>3</b>
<b>Topic 18: Web Services Best Practices and Quality of Service (Security and Web Service Style)</b>	<b>2</b>
<b>Topic 19: Business Process Execution Language (BPEL)</b>	<b>2</b>