UNIVERSITE LIBRE DE BRUXELLES
Ecole Polytechnique de Bruxelles

February 2014

INFO-H-509 : XML and Web Technologies
Course Plan

The objectives in brief

The advent of the World Wide Web has given rise to a myriad of technologies and techniques for exchanging Data on the Web, including technologies like XML, DTD, XML Schema, XPath, XSLT, DOM, SAX, RDF, OWL, ... In this course we untangle and study this spaghetti of Web Technologies. Our first objective in this respect is to obtain a foundational and formal understanding of the theory underlying these technologies. Our second objective is to understand in what scenarios a certain technology is applicable, and how they should be applied in that case.

Course responsibles

- Lecturer : Stijn Vansummeren (S.UB4.125, `stijn.vansummeren@ulb.ac.be`)
- Assistant : Michael Waumans (`mwaumans@ulb.ac.be`)
- Course web page : `http://cs.ulb.ac.be/public/teaching/infoh509`

Schedule

See the on-line calendar available at the course webpage. Be sure to check regularly for modifications.

The course objectives

At the end of the course the students should master the following notions :

1. Construction of HTML pages and simple CSS stylesheets.
2. Construction of well-formed XML documents.
3. Use of XML namespaces.
4. Querying XML documents with XPath.
5. Construction of DTDs and XML Schema's ; validating an XML document with respect to a schema.
6. Logical characterisations of DTDs and XML Schemas.
7. Transforming XML documents with XSLT.
8. Querying XML documents with XQuery.
9. Construction of RDF data ; querying RDF with SPARQL.
10. Formal semantics of RDF.
11. Construction of ontologies : RDF Schema and OWL.
12. Use of RDF in practice : linked data.

Organisation and evaluation

The course comprises 5 ECTS credits (24h theory - 12h exercises - 2 ECTS of project work).

Evaluation is based on a written exam (closed) book and project work.