COM506 Professional Web Services Development

Summary of Content 2018/19

	Tuesday 9:15	Thursday 9:15
Week 1	**A1.** Introduction, what is XML?, a first XML document, examples of XML , using namespaces, DTD Validation	**A2.** Better Validation - XML Schema, benefits of schema over DTDs
Week 2	**A3.** Client-side programming: XML and JavaScript - Reading, manipulating and writing XML data	**A4.** Server side programming: Using XML; parsing XML in PHP; providing database functionality
Week 3	**A5.** Transformations: XSL and XSLT/XPath; Dynamic loading of XSL stylesheets **ASSESSMENT 1** Released	**A6 (BONUS CONTENT).** Specifying services using WSDL**;** RSS**;** Live XML feeds
ASSIGNMENT 1	**XML Development**	
Week 4	**B1.** Introduction to Python – variables and expressions; find and extract sub-strings; language constructs, procedures	**B2**. Python string and text processing; files and file handling; Case Study: a text-based game
Week 5	**B3.** Web programming in Python, the UrlLib library, extracting elements from an HTML stream, building a basic Web crawler	**B4.** More complex data structures; complex list types; multi-dimension arrays; dictionaries; efficiency
Week 6	**B5.** Using files and databases; building a screen-scraping application using Python **ASSESSMENT 2**: Released	**B6 (BONUS CONTENT).** Object-oriented Python; classes & methods.
ASSIGNMENT 2	**Python Development**	
Week 7	**C1.** Web application frameworks; introducing Bottle; multi-route web server apps; templates; maintaining state	**C2.** Database-driven Web applications, introducing SQLite; basic CRUD operations; a sample application
Week 8	**C3.** Using an API; Case Study – using the OpenWeather API; building a basic web-based OpenWeather client	**C4.** Asynchronous Web applications; integrating AJAX-driven functionality; passing data structures to templates;
Week 9	**C5.** Client-side API development; integrating web services and bespoke functionality into a single application **ASSESSMENT 3:** Released	**C6 (BONUS CONTENT).** The YouTube API – searching and playing videos from our own applications
ASSIGNMENT 3	**Web Services Development using APIs**	
Week 10	**D1.** Introducing Rails; the Model-View-Controller application architecture; scaffolding; a first Rails application	**D2.** Programming in Ruby; basic data and language constructs; using the class library
Week 11	**D3.** Database manipulation: using Active Record; specifying relationships; the CRUD database operations; advanced queries	**D4.** Rails Action Pack – controllers and views; tracing the Action Pack request cycle.
Week 12	**D5.** Delivering a RoR application; user auth; session management; custom helpers **ASSESSMENT 4** Released	
ASSIGNMENT 4	**Ruby On Rails Application Development**	