SUBJECT OUTLINE

UNIVERSITY OF TECHNOLOGY SYDNEY

31284 Web Services Development

Course area	UTS: Engineering and Information Technology
Delivery	Autumn 2012; City
Credit points	6cp
Requisite(s)	(31267 Programming Fundamentals OR 31465 Object-oriented Programming OR 48023 Programming Fundamentals) AND (31268 Web Systems OR 31466 Principles of Distributed Computing)
Result type	Grade and marks

Recommended studies: understanding of basic distributed computing concepts, an ability to create web pages, and good familiarity with the Java programming language

Subject coordinator

Dr Wayne Brookes
Room CB10.04.414
Email: wayne.brookes@uts.edu.au; Phone: 9514 1872

The subject coordinator may be contacted by email or phone if you have matters of a personal nature to discuss, e.g., illness, study problems, team problems, team re-assignment, or a request for an appointment outside the given consultation hours.

You **MUST** prefix the subject of the email with [31284], otherwise your email will be rejected by the spam filter e.g. "[31284] late assignment". Generally, questions regarding assessment and the subject should be raised in the lectures or tutorials or online. This ensures that all students get the benefit of the information given. Emails that are considered better answered in class may not receive a response.

Teaching staff

Lecturer: Wayne Brookes

Tutors: Ryan Heise, Kevin Lee

Subject description

Web-based applications play an important role in contemporary commercial software development. This subject introduces concepts and technologies related to the development of modern web applications.

Subject objectives

At the end of the subject, students will be able to:

1. Describe and evaluate typical application architectures and requirements for web-based applications
2. Discuss some of the issues of designing web-based applications in an e-business context
3. Describe the roles and uses of web-based applications in organisational contexts
4. Apply concepts of information representation and parsing, in the context of XML and other relevant standards for information interchange
5. Describe and evaluate different technology options available for the development of web-based applications
6. Develop a small, distributed web-based application based on existing software libraries

Contribution to course aims and graduate attributes

This subject introduces concepts and technologies relevant to the development of web applications. It expands students' prior knowledge of how the World-Wide Web operates by providing more detail on basic web application development. It prepares students for further study of enterprise-level web application development.

Teaching and learning strategies

1 hour of Lectures, 2 hours split between Tutorials and Lab work

Content

The major topics are:

1. Architectures and design patterns for web-based applications
    - Client/server, 3-tier and N-tier architectures
    - Service Oriented Architectures
    - Enterprise Service Bus
    - Representational State Transfer (REST)
    - Service brokers, application servers, middleware
    - Evaluation/comparison of options
2. Roles of web-based applications in organisations
    - E-Business models, including models for Business-to-Consumer (B2C) and Business-to-Business (B2B) e-business
    - Enterprise Application Integration
3. Information representation and parsing
    - XML and other information representation formats
    - The role of schemata in information representation, including XML Schema
    - Parsing, including DOM and SAX parsers
4. Technologies for web application development
    - Overview of J2EE and .NET architectures
    - HTML and Java Server Pages
    - Web Services and related standards, including SOAP, WSDL, UDDI
    - Software libraries for creating Web Services applications
5. Issues in web application development
    - Security, management, reliability, transactions
    - Quality of Service issues
    - Service composition and workflow

Program

Week/Session	Dates	Description
1	27 Feb	Lecture: Introduction, e-business **Notes:** No tutorial or lab
2	5 Mar	Lecture: Architecture Tutorial: E-business, architectures tutorial Labs: development environment
3	12 Mar	Lecture: Technologies Tutorial: Technologies Labs: HTML & JSP
4	19 Mar	Lecture: Design Tutorial: Design Labs: JSP

5	26 Mar	Lecture: Information representation Tutorial: XML Labs: XML
6	2 Apr	Lecture: Information representation Labs: XML **Notes:** **Assignment 1 (25%) due 5:00PM THURSDAY 5 APRIL 2012**
7	9 Apr	Easter Monday public holiday **(no class)**
8	16 Apr	Faculty Non-Teaching Week **(no class)**
-	23 Apr	Vice-Chancellor's Week **(no class)**
9	30 Apr	Lecture: Information representation Labs: XML
10	7 May	Lecture: Information representation Tutorial: XSL Labs: XSL
11	14 May	Lecture: Distributed Applications Labs: Distributed apps
12	21 May	Lecture: Distributed Applications Labs: Distributed apps
13	28 May	Lecture: Distributed Applications Tutorial: Assign 2 demonstrations **Notes:** **Assignment 2 (30%) due 8:00AM MONDAY 28 MAY 2012 (ONE HOUR BEFORE LECTURE)**
14	4 Jun	Lecture: Revision lecture Tutorial: Assign 2 demos (cont)

Additional information

There are no compulsory assessment items. The pass mark is 50%.

Special condition:
Your final mark will be capped at a maximum of 50% if the total of [Assignment 1 + final Exam + contributions] is less than 33%.

Assessment

Late assignments will be deducted three percent per day late (including weekends). If the assignment is submitted more than **seven** days late (including weekends), the assignment will receive zero. Special consideration, for late submission, must be arranged **beforehand** with the Subject Coordinator.

Assessment item 1: Assignment 1 (individual)

Objective(s): 1–5

Weighting: 25%

Due: Week 6, 5:00pm Thursday 5 April 2012

Task: This will be a written assignment on design issues.

Further information: This assignment will be submitted via UTS Online. We will use TurnItIn for plagarism detection

Assessment item 2: Assignment 2 (group)

Objective(s): 4, 5, 6

Weighting: 30%

Due: Week 13, 8:00am Monday 28 May 2012

Assignment must be demonstrated in labs in week 13 or 14.

Task: This will be a programming assignment where students develop a web based application using HTML, JSP, XML and Web Services.

This is a group assignment of 2 students. You can only do this individually with **written** permission from the subject coordinator.

The assignment is to be submitted electronically. Details of the submission process will be supplied in a separate assignment handout.

The assignment **MUST** be demonstrated during your tutorial by **both** team members. Failure to demonstrate will result in a 50% penalty of the marks awarded to the assignment to any team member (or both) who does not attend the demonstration.

Further information: For the group assignment students will be assessed as a team, which means each group member will normally receive the same mark. If you have trouble with the operation of your group, ask your tutor for advice (preferably ask as a group). If some of the group feel that other members are not contributing the tutor should be informed and a group meeting held to produce a solution. In extreme cases a group member may be asked by the tutor to withdraw from the Subject, do extra work or accept a lower mark. No complaints about group operation will be considered after the assignment has been handed in to the tutor.

Assessment item 3: Final Examination

Objective(s): 1-5

Weighting: 40%

Due: University examination period

Task: The final exam will be held during the formal examination period and will consist of multiple choice and short answer questions.

Assessment item 4: Contributions

Objective(s): 1-5

Weighting: 5%

Due: All teaching weeks, i.e. weeks 1-14

Task: This is a discretionary mark allocated by the tutors and lecturer for student contributions to the subject.

This includes student activities such as:

- Tutorial participation – such as answering the tutorial questions
- Answering questions and assisting others on UTS online
- Assisting in labs etc

Mere attendance in tutorials and labs is not considered a contribution. Similarly, merely posting questions on UTSOnline is not considered a contribution. Contribution is about what you give to others in the subject, not what they give to you.

It is your responsibility to ensure that the tutor and lecturer recognise your contribution – make sure they know your face and name. No complaints about the contribution mark will be considered after the final tutorial class for the subject.

Supplementary assessments

Under the university's assessment policy, **no supplementary examination** is required in this subject, and none shall be offered.

Recommended texts

Major Reference

Laudon, K.C. and Traver C.G., *E-Commerce 2011: business, technology, society (International Edition).* 7th edition. Pearson, 2011. ISBN: 0-273-75084-4. *(also used in 31254 e-Commerce). Other editions of the same book are also acceptable as a reference.*

Other refererences

Megginson, D., *Imperfect XML*, Addison-Wesley, 2005. ISBN 0131453491

Lawrence, E., et. al., *Technology of Internet Business*, John Wiley and Sons, 2002. ISBN: 0471421863

Barry, D., *Web Services and Service-Oriented Architecture,* Morgan Kaufmann, 2003. ISBN: 1558609067

Other resources

Materials for this subject will be available in UTSOnline: online.uts.edu.au

Academic liaison officer

Academic Liaison Officers (ALOs) are academic staff in each Faculty who assist three groups of students:

- students with disabilities and ongoing illnesses
- students who have difficulties in their studies because of their family commitments (e.g. being a primary carer for small children or a family member with a disability)
- students who gained entry through inpUTS Educational Access Scheme or Special Admissions.

ALOs are responsible for determining alternative assessment arrangements for students with disabilities. Students who are requesting adjustments to assessment arrangements because of their disability or illness are requested to see a Disability Services Officer in the Special Needs Service before they see their ALO.

The ALO for IT students is:

Dr Julia Prior
telephone: +61 2 9514 4480
email: Julia.Prior@uts.edu.au

Support

Students should email the Subject Coordinator as soon as possible (and prior to the assessment deadline) to make them aware of the impact on them meeting assessment component/requirements, and that they are seeking assistance through UTS Special Needs as detailed in Section 5.1.3 of Procedures.

Improve your academic and English language skills: HELPS (Higher Education Language and Presentation Support) Service provides assistance with English language proficiency and academic language. Students who need to develop their written and/or spoken English should make use of the free services offered by HELPS, including academic language workshops, vacation intensive courses, drop-in consultations, individual appointments and Conversations@UTS (www.ssu.uts.edu.au/helps). HELPS is located in Student Services, on level 3 building 1 at City campus and via the Student Services area at Kuring-gai campus. Phone 9514-2327 or 9514-2361.

The Faculty of Engineering and IT intranet (MyFEIT: http://my.feit.uts.edu.au/myfeit) and the Faculty Student Guide (http://my.feit.uts.edu.au/modules/myfeit/downloads/StudentGuide_Online.pdf) provide extensive information about the services and support available to students within the Faculty.

Disclaimer

This outline serves as a supplement to the Faculty of Engineering and Information Technology Student Guide. On all matters not specifically covered in this outline, the requirements specified in the Student Guide apply.