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# SISAT

School of Information Systems & Technology  
Faculty of Informatics

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## ISIT451 Web Services and Service Oriented Architecture Subject Outline Spring Session 2009

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Head of School –Associate Professor Peter Hyland, Student Resource Centre, Tel: (02) 4221 3606

### GENERAL INFORMATION

#### Subject Coordinator

Telephone Number:

Email:

Location:

Dr Jun Shen

4221 3873

[jshen@uow.edu.au](mailto:jshen@uow.edu.au)

39.211

Dr Shens's consultation times during session:

Day

Wednesday

Thursday

Time

13:30-15:30pm

13:30-15:30pm

#### Subject Organisation

Session:

Credit Points

Contact hours per week:

Lecture Times & Location:

Tutorial Day, Time and Location can be found at:

Spring Session, Wollongong Campus

6 credit points

1 hr lecture, 2 hrs tut

Wed 9:30 AM – 10:30PM 35-G45

<http://www.uow.edu.au/student/timetables/index.html>

Students should check the subject's web site regularly as important information, including details of unavoidable changes in assessment requirements will be posted from time to time via e-Learning space <http://www.uow.edu.au/student/>. Any information posted to the web site is deemed to have been notified to all students.

#### Subject Description

Web Services are at the core of what is being termed the next generation of eBusiness. The term 'Web Services' refers to the set of standard protocols and associated technologies that enable software applications to communicate with each other across the Internet. To effectively exploit the potential of Web Services requires appropriate effort in the proper design of business processes and service architectures.

#### Subject Objectives

On successful completion of this subject, students should be able to:

1. Describe and discuss the perceived expectations and anticipated impact of Web Services on the next generation of eBusiness;
  2. Describe each of the basic standard components from which Web Services are constructed, i.e., XML, SOAP, UDDI, WSDL, and describe how these components combine to enable the publishing and exploitation of Web Services;
  3. Build simple examples of distributed applications constructed using Web Services;
  4. Exploit a high-level Web Services Development Toolkit to implement and deploy Web Services.
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## Graduate Qualities

This subject will continue to the following graduate qualities:

- Informed
- Independent learners
- Problem Solvers
- Effective Communicators
- Team work
- Innovation and Design

Further information can be found at:

<http://www.uow.edu.au/informatics/sisat/current/SubjectInformation/UOW051055.html>

## Attendance Requirements:

It is the responsibility of students to attend all lectures/tutorials/labs/seminars/ practical work for subjects for which you are enrolled. It should be noted that the amount of time spent on each 6 credit point subject should be at least 12 hours per week, which includes lectures/tutorials/labs etc.

Satisfactory attendance is deemed by the University, to be attendance at approximately 80% of the allocated contact hours.

Attendance rolls will be kept for laboratories. If you are present for less than 80% and would have otherwise passed you need to apply for student academic consideration, otherwise a TF (technical fail) grade will be recorded.

## Method of Presentation:

In order to maximize learning outcomes, it is strongly recommended that students attend all lectures.

This is a 6 credit point single-session subject offered in the spring session. From week 2 to week 11, the lab sessions will be utilised to expand or reflect knowledge within or beyond lecture contents. Tutors will assist students to go through lab tasks within the guideline frameworks which are posted on e-Learning. Students will be required to participate in labs to perform tasks specified in the lab materials. Labs are also platforms for team members to meet regularly when working together towards the assignment. Note: attendance of labs will be recorded. Lab contents will become core parts of assignments.

The System Lab (room 3.230) and most of the other labs like rooms 3.124 or 3.126 (Macro and Micro Lab) in building 3 have been installed with .Net Visual Studio, while the Mega Lab (room 3.127) is installed with IBM's WebSphere ADIE (a J2EE development platform). Note most of the Web services theoretical investigation remains platform neutral and the practical lab sessions have time to focus only on one platform. In this subject, the chosen platform, which will be accompanied with learning materials for the supervised practical lab work, is .Net. Interested students may choose to learn the J2EE platform on their own (for example through samples downloadable from Informatics server through \\Visor\infopub\Windows\Apps\websphere\ds-resources). Both labs are accessible with authorised accounts.

**Lecture Schedule:** A proposed Lecture schedule for the subject is as follows:

Week	Topic	Labs	Reading
1	Introduction to Web services	n/a	Online and/or textbook Chapter 2
2	(Week 1 cont'd) XML for Web services	Introduction to VS.Net environment	XML and/or textbook Chapter 3
3	Dynamic e-Business and Web services	ADO.Net	IBM Redbooks
4	Service-Oriented Architecture (SOA)	XML data	Textbook Chapter 1 and 8
5	SOAP	Basic Web services	Textbook Chapter 4 on SOAP
6	WSDL	Web service applications	Textbook Chapter 5 on WSDL
7	UDDI	SOAP	Textbook Chapter 6 on UDDI
8	WS-BPEL/Service composition	WSDL	Textbook Chapter 9 on BPEL
9	Web service lifecycle and	Advanced Web services	Textbook Chapter 15 on lifecycle

	enterprise platforms	including deployment	
10	WS-Coordination, WS-Transaction	Case study (Amazon)	Textbook Chapter 10 on WS-C/T
11	WS-Interoperability	Wrap up, project presentations	WS-I.org
12	Advanced topics and future trends (extensions, Grid etc.)	Project presentations	Online or Chapter 17
13	Subject review	Project presentations	n/a

Changes to the above schedule will be posted via e-Learning space <http://www.uow.edu.au/student/>. Any information posted to the web site is deemed to have been notified to all students.

### Subject Materials:

Any readings/references are recommended only and are not intended to be an exhaustive list. Students are encouraged to use the library catalogue and databases to locate additional readings

### Textbook(s):

The text book for this subject is:

**Web Services: Principles and Technology**, by Michael Papazoglou, (Prentice Hall PTR 2008), ISBN: 9780321155559

### Other Resources:

An extensive collection of legitimately free and up-to-date resources is also available on the Web and a collection of highly relevant resources has been compiled in the lab. But students need to be careful when selecting relevant materials from different sources as Web services technologies are developing very quickly. Please note: in industry, the two main platforms on which Web services are being built are J2EE platforms from Sun, IBM, (and many other vendors) and .NET platforms from Microsoft; in public domain, there are also many open source software.

The following books are selected by the subject coordinator from large amount of available texts as highly recommended, but they are not mandatory. If you feel necessary to investigate further on specific perspectives in this subject, you can purchase some of them from UniShop.

- Web Services Platform Architecture: SOAP, WSDL, WS-Policy, WS-Addressing, WS-BPEL, WS-Reliable Messaging, and More, by Weerawarana, S., Curbera, F., Leymann, F., Storey, T., and Ferguson, D.F., (Prentice Hall PTR 2005) ISBN: 0-131-48874-0
- Service-Oriented Architecture (SOA): Concepts, Technology, and Design by Erl, T., (Prentice Hall PTR 2005) ISBN: 0-131-85858-0
- Web Services: Concepts, Architectures and Applications, by Alonso, G., Casati, F., Kuno, H. and Machiraju, V., (Springer 2004) ISBN 3-540-44008-9
- Web Services: A Manager's Guide, by Manes, A.T., (Addison Wesley 2003) ISBN: 0-321-18577-3

### Assessment:

This subject has the following assessment components.

ASSESSMENT ITEMS & FORMAT	% OF FINAL MARK	Minimum % required to pass	GROUP/ INDIVIDUAL	DUE DATE
Practical Lab Sessions	15%		Individual	Weekly (week 2-week 11), attend labs and perform task satisfactorily, a minimum of 80% attendance is required unless academic consideration is approved
Team Assignment Report	25%		Group	Submit digital copy onto e-Learning by 13:30pm Oct 16 <sup>th</sup> (Friday of week 11) submit hardcopy in week 12 classes/labs
Assignment Presentation	10%		Individual	Weeks 11-13, present in labs individually in a team context
Final Examination	50%	40%	Individual	Examination period per ARD schedule

**Notes on Assessment:**

All assignments are expected to be completed independently. Plagiarism may result in a FAIL grade being recorded for that assignment.

**Electronic Submission of Assessment Items:**

Unless otherwise notified by the subject coordinator, all written assignments must be submitted electronically.

Submission of assessment items via email will not be accepted.

The criteria specification for the major piece of submitted work, Team Assignment Report, will be issued on e-Learning space in week 2. The completed assignment should be submitted in week 11. Note the weekly lab contents may contribute to the report. All students are required to attend lab sessions where a record of attendance will be kept. Tutors will also examine whether the attendee can perform the lab tasks satisfactorily on site.

The Team Assignment Report needs to be submitted **BOTH** as a printed version and in digital form. The printed hardcopy must include a completed School Cover Sheet. Members of each team should reach agreement on contribution balances among them and indicate this issue clearly with signature in their hardcopy submission. Each member will be marked individually if there is no such agreement on their fairly even contributions. Students must also retain a copy of their work in case assignments go missing. Students must also retain their own copies of all materials that are posted to the e-Learning space and may be required to repost those materials at any time during the subject. All assignments will be returned within 2 weeks of their submission. All teams are formed with the agreement of the tutor in week 2 and the tutor reserves the right to change team membership at any time. Each team generally has 4 or 5 members. Team allocations and submissions will be managed and undertaken with the cooperation between tutors and students through e-Learning space.

**Other Procedures for the submission of assessment items:**

For the group assignments, in addition to electronic submission students are required to submit assignments in hard copy to their tutor.

All assignments will be returned within 2 weeks of their submission.

**To be eligible for a Pass in this subject a student must achieve a mark of at least 40% in the Final Exam. Students who fail to achieve this minimum mark & would have otherwise passed will be given a TF (Technical Fail) for this subject.**

**Procedures for the return of assessment items:**

Marked assignments may be collected from the subject coordinator during consultation hours after week 13.

**Penalties for late submission of assessment items:**

Penalties apply to all late work, except if student academic consideration has been granted. Late submissions will attract a penalty of 25% of the assessment mark. This amount is per day including weekends.

Work more than four (4) days late will be awarded a mark of zero.

Requests for extensions should be lodged as a student academic consideration request (on-line via SOLS) with administration prior to the due date. Documentation (e.g., medical certificates) to support student academic consideration requests should be lodged to administration as well. In case occasional e-Learning space system failure when submitting materials, please notify tutor/lecturer immediately through email to avoid penalties for late submissions.

**Tutorial/Lab Closure Policy**

If for any reason, the number of students in a tutorial or lab falls below a sustainable enrolment level, as determined by the Head of School, tutorials/labs offered for that subject may be collapsed or

deleted.

You will have to attend the new tutorials/lab if this closure affects the one you are attending.

We will endeavour to make this decision no later than Week 4 of session.

### **Supplementary Exams**

Supplementary Exams will be dealt with in accordance with student academic consideration policy (<http://www.uow.edu.au/about/policy/studentacademicconsiderationpolicy.pdf>) 9.2 Timing of Supplementary Exams.

While the School normally grants supplementary exams when the student does not sit the standard exam for an acceptable reason, each case will be assessed on its own merit and there is no guarantee a supplementary exam will be granted. If a supplementary exam is granted, you will normally be notified via SOLS Mail the time and date of this supplementary exam. You must follow the instructions given in the email message.

**Please note that if this is your last session and you are granted a supplementary exam, be aware that your results will not be processed in time to meet the graduation deadline.**

### **Student Academic Consideration Policy**

The School recognises that it has a responsibility to ensure equity and consistency across its subjects for all students. Sometimes, in exceptional circumstances, students need to apply for student academic consideration in order to complete all assessable work.

The University applies strict criteria to the granting of student academic consideration. Before applying for student academic consideration, students should carefully read the University's policy which can be found at: <http://www.uow.edu.au/about/policy/studentacademicconsiderationpolicy.pdf>.

### **Plagiarism**

**When you submit an assessment task, you are declaring the following**

1. It is your own work and you did not collaborate with or copy from others.
2. You have read and understand your responsibilities under the University of Wollongong's policy on plagiarism.
3. You have not plagiarised from published work (including the internet). Where you have used the work from others, you have referenced it in the text and provided a reference list at the end of the assignment.

Students must remember that:

Plagiarism will not be tolerated.

Students are responsible for submitting original work for assessment, without plagiarising or cheating, abiding by the University's policies on Plagiarism as set out in the University Handbook under University Policy Directory and in Faculty handbooks and subject guides. Plagiarism has led to the expulsion from the University.

### **Student Academic Grievance Policy**

The School aims to provide a fair, equitable and productive learning environment for all its students. The Student Academic Grievance Policy seeks to support the achievement of this goal by providing a transparent and consistent process for resolving student academic grievances.

Any student who has a grievance over a result should obtain a Faculty of Informatics Appeal Against Decision or Action Affecting Academic Experience form from the Informatics Student Enquiry Centre. (<http://www.uow.edu.au/content/groups/public/@web/@inf/@faculty/documents/doc/uow017433.pdf>) The student should firstly take the form to the marker/lecturer to discuss the matter and, if the student is still not satisfied, s/he should take the next step as outlined on the form.

Once the grievance has been considered by the Faculty, if the student still feels the situation has not been fully resolved s/he may consult the Dean of Students. However, the Dean of Students can have no input into the academic judgment of the lecturer and can only review the grievance to ensure proper procedure has been followed.

### Relevant University Policies, procedures and students services:

For more information students must refer to the Faculty handbook, online references or consult the UOW policy in full at <http://www.uow.edu.au/handbook/courserules/studacgrievpol.html> which contains a range of policies on educational issues and student matters.

This outline should be read in conjunction with the following documents:

Code of Practice - Teaching and Assessment <a href="http://www.uow.edu.au/handbook/codesofprac/teaching_code.pdf">http://www.uow.edu.au/handbook/codesofprac/teaching_code.pdf</a>	Code of Practice - Students <a href="http://www.uow.edu.au/handbook/codesofprac/cop_students.html">http://www.uow.edu.au/handbook/codesofprac/cop_students.html</a>
Code of Practice-Honours <a href="http://www.uow.edu.au/handbook/CodeofPractice-Honours.pdf">http://www.uow.edu.au/handbook/CodeofPractice-Honours.pdf</a>	Acknowledgement Practice <b>Plagiarism will not be tolerated:</b> <a href="http://www.uow.edu.au/handbook/courserules/plagiarism.html">http://www.uow.edu.au/handbook/courserules/plagiarism.html</a>
Key Dates <a href="http://www.uow.edu.au/student/dates.html">http://www.uow.edu.au/student/dates.html</a>	Student Academic Consideration Policy: <a href="http://www.uow.edu.au/about/policy/studentacademicconsideration_policy.pdf">http://www.uow.edu.au/about/policy/studentacademicconsideration_policy.pdf</a>
Course Progress Requirements: <a href="http://www.uow.edu.au/student/mrp/index.html">http://www.uow.edu.au/student/mrp/index.html</a>	Graduate Qualities Policy: <a href="http://www.uow.edu.au/about/teaching/qualities/index.html#_The_new_UOW">http://www.uow.edu.au/about/teaching/qualities/index.html#_The_new_UOW</a>
Academic Grievance Policy (Coursework and Honours students) <a href="http://www.uow.edu.au/handbook/courserules/studacgrievpol.html">http://www.uow.edu.au/handbook/courserules/studacgrievpol.html</a>	Non-Discriminatory Language Practice and Presentation <a href="http://staff.uow.edu.au/eed/nondiscrimlanguage.html">http://staff.uow.edu.au/eed/nondiscrimlanguage.html</a>
Occupational Health and Safety <a href="http://www.uow.edu.au/about/policy/ohs.html">http://www.uow.edu.au/about/policy/ohs.html</a>	Ownership of Work & Intellectual Property Policy: <a href="http://www.uow.edu.au/handbook/generalcourserules/UOW028651.html">http://www.uow.edu.au/handbook/generalcourserules/UOW028651.html</a>
Human Research Ethics Committee: <a href="http://www.uow.edu.au/research/rso/ethics/human/">http://www.uow.edu.au/research/rso/ethics/human/</a>	Rules for student conduct: <a href="http://www.uow.edu.au/handbook/generalrules/StudentConductRules.pdf">http://www.uow.edu.au/handbook/generalrules/StudentConductRules.pdf</a>
Independent Learners' Introductory Program <a href="http://www.uow.edu.au/student/attributes/ilip/">http://www.uow.edu.au/student/attributes/ilip/</a>	Informatics Faculty Librarian, Ms Annette Meldrum, phone: 4221 4637, email: <a href="mailto:ameldrum@uow.edu.au">ameldrum@uow.edu.au</a>
Student Support Services: <a href="http://www.uow.edu.au/student/services/">http://www.uow.edu.au/student/services/</a> Informatics Faculty SEDLO ( <b>Student Equity and Diversity Liaison Officers</b> ) Virginie Schmelitschek, phone 4221 3833, <a href="mailto:virginie@uow.edu.au">virginie@uow.edu.au</a>	SISAT Internet Access & Student Resource Centre <a href="http://www.uow.edu.au/informatics/sisat/current/uow024466.html">http://www.uow.edu.au/informatics/sisat/current/uow024466.html</a>
SISAT Computer Usage Rules <a href="http://www.uow.edu.au/informatics/sisat/current/uow024457.html">http://www.uow.edu.au/informatics/sisat/current/uow024457.html</a>	SISAT Subject Outlines <a href="http://www.uow.edu.au/informatics/sisat/current/UOW055502.html">http://www.uow.edu.au/informatics/sisat/current/UOW055502.html</a>