MURDOCH UNIVERSITY
PERTH, WESTERN AUSTRALIA

School of Information Technology

Semester 1, 2003

Unit Outline and Reader

B336
Internet Systems Programming

Unit Outline
Semester 1 2003

Unit Coordinator
H.L. Hiew
h.hiew@murdoch.edu.au

Unit Web-Site
http://www.it.murdoch.edu.au/units/b336

Very Important !

All students enrolled in this unit are required to have Internet access to obtain material such as lecture notes from the unit web site. Students are also required to refer regularly to the Announcements group in the discussion forum on the web site for important announcements such as changes to assignment requirements.

School of Information Technology

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UNIT READER (green covers with white pages)

ONE
Introduction

Unit Overview

The focus of this unit is to expand on your technical understanding and proficiency in developing Internet and World Wide Web software. The unit will build on the materials you have learnt in B108 Introduction to Multimedia and the Internet. Students who have completed B211 Internet Computing will find the material in B211 useful as well.

Students should start the semester already having a basic understanding of how the Internet and the WWW works. In this unit, students will be given the chance to explore the detailed nuts and bolts of key technologies, by having hands on experience in writing and managing the software that forms the basis of these technologies.

Students enrolled in this unit should expect very heavy programming work. Students are expected to have good fundamental programming skills.

Learning Objectives

Your learning objectives for this unit are:

1. To understand in detail the technical workings of key Internet and web technologies, specifically web communications (HTTP clients and servers), web application programming, and XML technologies.
2. Be able to write software that drives the technologies in (1).
3. Understand the basic requirements needed to construct Internet solutions for organisations and enterprises.
4. Develop skills in self-learning, communications, research, trial-and-error, etc to derive Internet solutions.

To allow students to achieve these objectives, the content of this unit can be broadly seen in two respects:

a) Material given to you in lectures, study guide, and laboratories to give you the foundations for objectives 1, 2 and 3 above. All assignments and the end-of-semester examinations will assess your progress in achieving these objectives.

b) Information and skills you pick up yourself, while completing assignments, reading extra references given in the lectures and labs, and participating in the discussion forum. This will help you achieve objective 4.

It is a fundamental requirement for anyone to be proficient in the ever-changing world of the Internet that the person has capabilities to independently upgrade their skills and expand their knowledge base. It is for that reason that objective 4 is such a critical part of this unit. For that reason, part of your assessment will be on evidence that you are able to do so. Assessment components where you are expected to gather material OUTSIDE of the course content or more in depth than that which is presented in the lectures and labs[1] will be stated in the assessment description.

See section four of this unit outline for details of the assessments.

Prerequisites

Students are expected to have completed
- B102 Introduction to Computer Science, and
- B108 Introduction to Multimedia and the Internet.

Unit Coordinator

Your coordinator for this unit is **H.L. Hiew**, in the School of Information Technology.

Contact Details:

Unit Coordinator H.L. Hiew

Email: h.hiew@murdoch.edu.au
Phone: (08) 9360 6058

[1] However, this does NOT mean students cannot make use of unit resources such as fellow students, the unit's online discussion forum, or actively approaching the unit coordinator, other lecturers and tutors. You are strongly encouraged to do so. What the condition means is that you will not find solutions if you only passively assimilate the material given to you in the unit. You have to go out and LOOK!

Administration **(South St campus)**	Secretary, School of Information Technology Phone: (08) 9360 6120 Fax: (08) 9360 2941 Room: BITL 1.02 BITL Division Office Phone: (08) 9360 6093 Room: ECL 3.037
Administration **(Rockingham campus)**	Ms Merrylyn Braden Phone: (08) 9360 7017 Room: Arts and Commerce 2.017
Computer Technical Support	BITL Helpdesk Phone: (08) 9360 6700 Room: ECL 1.015

Withdrawal Dates

Students who enrol in this unit and subsequently withdraw will have different status appearing on your academic records depending on the withdrawal date. The following are withdrawal dates and their corresponding academic statuses.

Before the end of Week 3:	Does not appear on academic record
Week 4 - end of Week 10:	Appears as "Withdrawn" on academic record
After Week 10:	Appears as "Fail" on academic record
31st March 2003	HECS census date. Withdrawals after this date incur HECS liability

Unit Timetable

The following timetable will help you to plan your study over the semester.

This schedule for the lecture topics and lab exercises **is subject to change** during the semester. Up-to-date timetables can be found on the unit web-site:

http://www.it.murdoch.edu.au/units/b336/lectures

http://www.it.murdoch.edu.au/units/b336/labs

Please note that the assignment due dates below are all on Tuesdays, as oppose to the normal Friday due dates for most units.

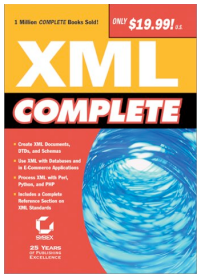
Week	Lecture Topics	Lab Exercises (assessed)	Assignments Due
One 17/2 – 21/2	Lect 1: Unit Introduction Lect 2: Web server configuration and administration		
Two 24/2 – 28/2	Lect 1: Web server configuration and administration (cont'd) Lect 2: Introduction to Perl programming	Lab Introduction	
Three 3/3 – 7/3	Lect 1 & 2: Implementing a web client	Apache installation and configuration	
Four 10/3 – 14/3	Lect 1 & 2: Implementing a web server	Implementing a web client	
Five 17/3 – 21/3	Lect 1: Introduction to XML Lect 2: The XML Document and the DTD	Implementing a web server	Plans for Assignment 1 due
One-week Semester Break			
Six 31/3 – 4/4	Lect 1: XML Schema Lect 2: XSLT	Writing and validating XML documents	
Seven 7/4 – 11/4	Lect 1 & 2: XML parsing and processing with DOM and SAX	Writing XSLT style sheets	Assignment 1 (due 12noon Tue 8th April 2002)
Eight 14/4 – 18/4	Lect 1: Designing XML Solutions Lect 2: More XML parsing and processing	Implementing XML parsers and processors with Perl	
Nine 21/4 – 25/4	Lect 1 & 2: XHTML and other example XML applications	Implementing XML parsers and processors with Perl (cont'd)	
One-week Semester Break			
Ten 5/5 – 9/5	Lect 1 & 2: SOAP and Web Services	Implementing XML parsers and processors	Plans for assignment 2 due
Eleven 12/5 – 16/5	Lect 1 & 2: Advanced Web Server Scripting	SOAP programming	
Twelve 19/5 – 23/5	Lect 1: Advanced PHP with XML Lect 2: ASP.NET	XML in PHP	
Thirteen 26/5 – 30/5	Lect 1 & 2: Exam Revision	Demonstration: ASP.NET in action	Assignment 2 (due 12noon Tue 27th May 2002) Assignment 3 (for external students only)
One-week Study Break			
Examinations Period			

TWO
Resources for the Unit

Unit Materials

Essential Textbooks

- XML Complete, Sybex Inc, 2001.



- B336 Unit Outline and Reader, Semester 1 2003, Murdoch University.

Unit Web-Site

The unit web-site is at:

http://www.it.murdoch.edu.au/units/b336

All students enrolled in this unit are required to have Internet access and refer to this web site regularly, especially to the section containing unit announcements: The announcements will be made in the online discussion forum under the topic "Announcements":

http://www.it.murdoch.edu.au/units/b336/discus

Students are required to refer to the announcements **at least once a week**.

Computing Facilities

Internal Students

The laboratory used for this unit will be announced in lectures during the first week of the semester, and is available during normal opening hours of 9am to 5pm. Arrangements to use laboratories outside these

hours can be made by seeing the Secretary, ECL Building, room BITL1.02. You will need your Student identity card and a special pass to use the laboratory.

External Students

External students must arrange their own access to a computer. The computer must have Internet access. Besides accessing the on-line unit materials, external students will also need to use the computer for programming exercises in assignments.

External students are not required to purchase any software of their own. All software required for this unit is either on a server, or is in the public domain. Further instructions on accessing the server will be given as the semester progresses. Instructions on software to download for home use is available at:

http://www.it.murdoch.edu.au/units/b336/downloads

There are various ways of getting Internet access. Refer to the following page for advice on how to gain Internet access:

http://www.murdoch.edu.au/cns/internet/internet.html

THREE
Lectures and Laboratories

Lectures

There will be 3 hours of lectures every week, for the duration of the 13 weeks of the semester. Attendance in the lectures is not compulsory, but is highly recommended for internal students. Instructions relevant for internal students may be given in the lectures. The timetable for the lectures can be found at:

http://www.murdoch.edu.au/oss/legacy_pages/timetable_enquiry.html

The overheads used in the lectures will be put up on the unit web-site after the relevant lectures. These overheads only contain points used in the lecture presentation. They are not substitutes for lecture attendance and the prescribed reading. The lecture overheads will be available at:
http://www.it.murdoch.edu.au/units/b336/lectures

The online lecture overheads are password protected. The username and password required to access the overheads will be made available in the first lecture. External students should consult your tutors to get the username and password.

Laboratory Session

Lab sessions will be run from week 2 to week 13 of the semester. The lab exercises will involve programming work related to material given in the lectures. More specific information about using the relevant software will be supplied. The lab exercises are critical to your understanding of the Internet. You will not be able to complete (or even start) the assignments without doing the exercises.

You will be allocated a tutor responsible for:
1. assisting you in the lab exercises every week,
2. assessing your laboratory exercise work,
3. marking all your assignments
4. answering any queries related to the unit material.

Every internal student at the South St campus will be required to sign up for a two-hour lab session every week. Note that for all labs, the tutor will only

be available for the first hour of the session. The online sign-up form for the lab sessions is at:

http://www.it.murdoch.edu.au/units/b336/labs/sign-up.shtml

Links to the lab exercises every week will be put in the following page as the semester progresses:

http://www.it.murdoch.edu.au/units/b336/labs

The online lab exercise sheets are password protected. The username and password required to access the exercises will be made available in the first lecture. External students should consult your tutors to get the username and password.

FOUR
Assessments

Assessment components

You will be assessed on the basis of two assignments, your weekly lab exercises, and the examination.

Assessments	Description	Value	Due Date
Assignment 1	Apache installation and management Implementing a web server and client	30%	Tuesday of week 7
Assignment 2	XML solutions	30%	Tuesday of week 13
Lab Exercises (Assignment 3 for external students)	Assessable components of lab exercises	10%	Internal students demonstrate to tutor every week; External students submit on disk before Friday of week 13
Examination	Questions on materials from lectures and labs.	30%	Examination period

Assignments

The questions and descriptions of the assignments may be found at on the unit web site.

http://www.it.murdoch.edu.au/units/b336/assignments

Important Note

Please read the section regarding *Dishonesty in Assessments* and *Plagiarism and Collusion* below. The unit coordinator and the University views issues of plagiarism very seriously. You may from time to time come across programs and scripts on the web that may be appropriate as solutions for the assignments. Students may not submit such downloaded material for assessment, **UNLESS**:

1. The student enhances the downloaded material significantly, in line with the unit's objectives (see section 1 of this Unit Outline).
2. The student notifies the unit coordinator BEFORE submitting the work, and fully documents the parts of the work that is theirs.

The reason for allowing students to enhance downloaded work is because most work in Internet development is about building on other people work and components to make better products. What is **NOT** acceptable is when developers pass work other people work off as their own.

Do not test the unit coordinator's ability to detect plagiarised work when you do not include appropriate acknowledgements. It takes quite considerable effort to modify someone else' work to pass off as your own. All unacknowledged plagiarised work will be passed on to the Head of School for disciplinary action.

Late submissions

Late assignments will have **10% of the student's final mark** deducted per day.

Assignment submission

For internal students, assignments should be placed in the B336 assignment box outside the School of IT corridor in level 2, north wing of ECL building, by 12noon on the due date. The cover sheet with the declaration completed must be attached. Cover sheets for each assignment will be available from the page:
http://www.it.murdoch.edu.au/units/b336/assignments

External students should mail assignments to the External Studies Office, ECL Building, Murdoch University, Murdoch WA 6150 using the address labels that have been supplied. The cover sheet with the declaration completed must be attached. Other methods of submitting assignments can be found on the page:
http://wwwtlc1.murdoch.edu.au/teach/disted/support/assignments.html

Assignments are occasionally lost in the system, so **all students are required to keep copies of their assignments** until the end of the appeals period after the semester.

Extensions for assignments will be granted only in exceptional circumstances. If something exceptional arises that requires an extension you should contact the unit coordinator *before* the deadline expires. Only the unit coordinator can grant extensions.

Important Note

Reasons which are **not** sufficient to warrant an extension include computer failures; car failures or other transportation difficulties; work conflicts, other study commitments, and dog eating your assignments. 'Losing' work through "computer failure" is not accepted as a reason for late submission of an assignment; students using a computer should know to frequently save and backup your work. Also, you should identify conflicts with other work and study commitments at the beginning of semester and schedule your time accordingly. If you are unable to do so, contact the unit coordinator for advice and special arrangements.

Assignment submissions cannot be accepted after the examination has commenced unless deferred assessment on the unit as a whole has been approved. Deferred assessment may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Applications for deferred assessment must be submitted by the end of week 13 of the semester or, in the event of circumstances arising after that date, before the examination. Refer to the current University Handbook for details or

http://www.murdoch.edu.au/admin/legsln/regs/bachelor.html#deferred

Lab Exercises

The lab exercises from week 3 to week 12 will include sections that are assessed. The requirements for the assessment will be described in the lab exercises each week, given at:

http://www.it.murdoch.edu.au/units/b336/labs

Internal students should demonstrate to their tutors that they have completed the lab exercises in the week they are given, or the week after. No marks will be given if the student does not demonstrate they have completed their work within that time.

External students should submit answers and programs required for assessment from the lab exercises before the end of week 13 (Friday 30th May 2003). Please submit to External Studies Office as normal, and mark the submission as "Assignment 3".

Examination

The final examination will be of 3 hours duration and held during the examination period at the end of the semester. It will be closed book exam. The questions in the exam will assess your understanding of the materials in the lectures and labs.

Further guidelines to the examinations, as well as sample examinations will be available on the unit web-site reaching the end of the semester.

The University Examinations Officer will contact external students about the time and venue for the final examination. Metropolitan external students are expected to take the examination on campus, while arrangements will be made for non-metropolitan external students to take the final examination locally.

The University requires that all students sitting end-of-semester examinations (including those held off-campus) must show their 2003 Murdoch University Student Card to facilitate photographic identification. **No other form of identification will be accepted.**

Students may inspect their marked examination scripts and discuss the marking with the unit coordinator within 14 days of the posting of results (Degree Regulation 43).

Determination of the final grade

In order to pass this unit you must:
— achieve a satisfactory performance (normally 50%) in the final examination, and
— achieve a satisfactory performance (normally 50%) in the assignment component.

Your final grade for the unit will be based on your combined aggregate score for the assignment and examination components. Your final grade will be reported by a letter grade according to the following percentage ranges.

Notation	Grade	Percentage Range
HD	High Distinction	80 – 100
D	Distinction	70 – 80
C	Credit	60 – 70
P	Pass	50 – 60
CP	Conceded Pass	40 – 49
S	Supplementary Assessment	40 – 49*
N	Fail	Below 50

* Students who achieve more than 50% overall but fail the final examination will receive supplementary assessment similar in kind to the final examination. Those who achieve more than 50% overall but fail the combined assignment/ practical components will receive supplementary assessment related to those parts. After supplementary assessment a student may be awarded a Pass (P), a Conceded Pass (CP) or a Fail (N).

The cut-off points of marks denoting the grades (HD, D, C, P, N, S) vary between units, and, from year to year, within a unit. cut-off points are determined by the unit coordinators after marking, and are based on the standard of work, which, in their opinion, is reflected by a particular range of marks. Coordinators use their professional judgement in the allotment of grades at the margin between successive grades, based on students' overall performance in relation to the objectives of the unit.

The Unit coordinator may re-scale marks across assessment tasks, some of which may prove to be easier than others, or across tutors, some of whom mark more or less highly than others. Also, because we have the right to scale overall marks, the grade cut-offs given above are notional and may be changed if we consider the overall results for the unit too far from the standard norms of the University.

University policy on assessment

Assessment for the unit as a whole is in accordance with the provisions of Degree Regulations 40-48. Check these in the current Murdoch University Handbook and Calendar and at

http://www.murdoch.edu.au/vco/secretariat/admin/codes/assessapp2.html

Your attention is particularly drawn to the **University policy regarding assessment roles and responsibilities** which lists your responsibilities as a student (as well of those of unit coordinators and others).

Plagiarism and collusion

Plagiarism constitutes using the work of another without indicating by referencing that the ideas expressed are not your own. Collusion (or unauthorised collaboration) constitutes joint effort between students or others, in preparing material submitted for assessment, except where this has been approved by the unit coordinator. The University regards most seriously any acts of dishonesty in assessment such as plagiarism, collusion, re-submission of previously marked work in different units, examination misconduct and theft of other students' work. These acts could result in penalties including failure in the unit and possible exclusion from the University. For further details please refer to the section on 'Dishonesty in Assessment' in the current Murdoch Handbook Section 1, Assessment and Academic Progress and

http://www.murdoch.edu.au/vco/secretariat/admin/codes/assessapp2.html#dishonesty

Non-discriminatory language

Murdoch University is committed to the use of non-discriminatory language in all forms of communication. Students and staff should avoid the use of discriminatory language in units and in all other activities within the University. This applies to both oral and written communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are therefore requested to check your work for this, and to ensure it is non-discriminatory in all respects.

Conscientious objection

Any student with a conscientious belief which is in conflict with teaching and/or assessment practices in this unit, is advised to contact the unit coordinator prior to the start of the unit or in the first three weeks of semester. Early notice increases the chances that alternative arrangements can be made. Further details about what

constitutes a conscientious belief and how these claims are assessed can be found in the University's Guidelines on Conscientious Objection in Teaching and Assessment, at:

http://www.murdoch.edu.au/vco/secretariat/admin/gdelines/consciobj.html

Deferred assessment and special consideration

Deferred assessment may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Special consideration in the awarding of grades is also possible in some circumstances. Refer to the current University Handbook for details or

http://www.murdoch.edu.au/vco/secretariat/admin/codes/assessapp2.html#deferred

Explanation of grades and appeals

Students have the right to appeal their assessment in this unit. First, you should approach your tutor for a review of an assignment. If you are not satisfied with this process, then take your case to the unit co-ordinator. Students who feel they have grounds for appealing against their final grade in this unit should consult the procedures outlined in the Handbook under Degree Regulation 49. See also

http://www.murdoch.edu.au/admin/legsln/regs/bachelor.html#appeals

or the Office of Student Services Appeals Procedure

http://www.murdoch.edu.au/oss/legacy_pages/appeals.html

Dishonesty In Assessment

The University regards most seriously any acts of dishonesty relating to assessment. Cheating includes plagiarism, unauthorised collaboration, examination misconduct and theft of other students' work. Plagiarism and collusion are defined as including any of the following five types of behaviour, and apply to work in any medium (for example, written or audio text, film production, computer programs):

- Inappropriate/ inadequate acknowledgement - material copied word for word which is acknowledged as paraphrased but should have been in quotation marks, or material paraphrased without appropriate acknowledgement of its source.
- Collusion - material copied from another student's assignment with her or his knowledge.
- Verbatim copying - material copied word for word or exactly duplicated without any acknowledgement of the source.
- Ghost writing - assignment written by third party and represented by student as her or his own work.

- Purloining - material copied from another student's assignment or work without that person's knowledge.

Acting dishonestly in assessment is defined as misconduct under the Student Discipline Statute. Depending on the seriousness of the case, it can lead to a requirement to undertake additional work, failure in a unit or in a part of it, suspension from the University or even permanent expulsion from the University. The University regards any form of cheating as a serious matter of academic dishonesty which threatens the integrity of the assessment processes and awards of the University, to the detriment of all other students and graduates of the University. If you are unsure as to what constitutes plagiarism or collusion, please check with your tutor.

Guidance about how to avoid plagiarism and collusion, plus further information about University policies on dishonesty in assessment, are available at the following URL:

http://www.murdoch.edu.au/admin/discipline/