TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

School of Information Management

ELCM 351 ADVANCED INTERNET DESIGN AND DEVELOPMENT

Trimester One 2011

COURSE OUTLINE

Names and Contact Details

Role	Name	Room	Phone	E-Mail
Course Coordinator	A/Prof Sebastian Link	RH 524	463 6813	Sebastian.Link@vuw.ac.nz
Senior Tutor	Ms Xiaoyi Guan	RH 502	463 6998	Xiaoyi.Guan@vuw.ac.nz

Sebastian is the Associate Professor of e-Commerce at the School of Information Management and also a member of the Centre for Logic, Language and Computation. His main research interests focus on conceptual modelling, database design and theory, XML, and their applications to e-Commerce. All questions related to the content of this course should be directed to Sebastian. He is happy to answer relevant questions during or after lectures, via e-mail or in face-to-face meetings. Please contact Xiaoyi Guan if you have any enquiries regarding administration of the course. She is responsible for the day-to-day administration of the course, including:
- record keeping and administrative queries
- assessment queries
- workshop attendance, illness, due dates, etc.

All queries related to assignment submissions, extensions, assignment/test remarking, and lab and workshop allocations should be directed to Xiaoyi Guan in the first instance. Questions about software applications and the practical techniques of building pages should be directed to the lab instructors/tutors of the course, during the workshop.

Trimester Dates

Monday 28 February – Friday 3 June

Class Times and Room Numbers

- LECTURES: Thursdays, 10:30-12:20pm, Government buildings LT3
- WORKSHOPS: 1 hour/week, students will sign up for one slot
  - o The individual slot times and venues will be announced on Blackboard.
  - o Sign-up for your workshop slot will be available on
    https://signups.victoria.ac.nz

Course Content

A tentative schedule of lectures and workshops is illustrated in the following table. Note that the course coordinator reserves the right to make changes during the trimester.

Week/ Lecture on:	Topics and Readings	Complete project thread of
1 3rd March	Introduction to the course Architecture of e-commerce applications Reminder: Mark-up on the front-end *Chapters 1 and 2*	Chapter 1
2 10th March	Processing of client data on the front-end JavaScript *Chapter 3*	Chapter 2
3 17th March	Interfaces between the front- and back-end *Chapter 4*	Chapter 3
4 24th March	Dynamic Website development *Chapter 5*	Chapter 4
5 31st March	Processing of client side data on the back-end *Chapter 6*	Chapter 5
6 7th April	**Test 1** Transactional Website development *Chapter 7*	Chapter 6 Submission for feedback
7 14th April	Cookies and online marketing Site preferences and security concerns *Chapter 8*	Chapter 7
2 weeks mid-trimester break		
8 5th May	Utilities for tailoring e-commerce applications *Chapter 9*	Chapter 8
9 12th May	Back-end database support Database-driven e-commerce applications *Chapter 10*	Chapter 9
10 19th May	Further functionality by regular expressions *Chapter 11*	Chapter 10
11 26th May	Searching in e-commerce applications *Chapter 12*	Revision and final checks
12 2nd June	**Test 2** Summary *Chapter 13*	No workshop
Final web site project due date: Friday 3rd June, 3pm		

Course Learning Objectives

E-commerce is aimed at enhancing the competitiveness of an organisation by deploying innovative information and communication technology throughout an organisation and beyond, through links to partners and customers. This course builds on ELCM 251 - Introduction to Internet Design and Development – and continues to teach the technical and practical skills required for designing, programming and administering dynamic e-commerce enabled websites. In this rapidly evolving field both e-commerce developers and managers must have an in-depth understanding of current web development languages and the latest database techniques. The

main objective of this course is to convey the core theoretical concepts central to e-commerce applications. This approach facilitates the students' understanding of how HTML, JavaScript, a server-side programming language, and databases work together to enable three-tier e-commerce applications. It further demonstrates that the core concepts do not rely upon a particular development language or environment. A solid foundation in the core fundamentals leaves the successful student armed to apply that knowledge easily in diverse environments. It is not the aim of this course to teach you how to use a certain tool since this will only adept you with that tool. Instead, you will be taught a craft such that you can adeptly apply whatever your future tool will be. More specifically, the learning objectives of ELCM 351 are related to the FCA graduate attributes and ELCM Major attributes as follows:

Learning Objective	On completion of this course, students will be able to:	Graduate Attributes	Major Attributes
LO1	describe the concepts of Web architecture and design	LG2	MA4, MA5
LO2	use the technologies required to design and develop Web-based applications	LG1	MA2, MA3
LO3	develop, test and deploy Web applications with multimedia content, including the required forms to allow user interaction with the data objects	LG1, LG4	MA2, MA3
LO4	explain how server-side script and components allow flexible production of web pages on demand to suit user requests	LG2	MA2, MA3, MA4
LO5	connect Web pages to a database file or server in order to allow the user to view and update data	LG1	MA3
LO6	apply the concepts of Internet security and multimedia in e-business applications	LG1, LG2	MA6
LO7	summarise and discuss the future trends in modern e-business application development	LG2, LG4	MA4, MA5

Course Delivery

The delivery style of this course allows you to put into practice in the workshops the skills you are learning during the lectures and from the textbook. Two class tests (conducted during lectures L6 and L12) will evaluate your understanding of the core principles that underly modern e-commerce applications. The project thread will test your ability to implement e-commerce applications in a real environment. At the end of the course you should have the skills required of a professional Website developer, and the confidence to put your skills into practice in the workplace. There is no final exam for this paper.

Expected Workload

You are expected to devote a minimum of 12 hours a week to this course. This is an average, and the workload is likely to vary from week to week during the trimester. As a guide you may choose to spend the following time on the following course components:

Lectures	2 hours
Workshops	1 hour
Reading & Understanding Course Notes and Material	4 hours
Exercises and Project Thread	5 hours
	12 hours

Note that students are expected to attend all lectures. Failure to do so will, most likely, limit your ability to perform well in any of the assessment components. It is strongly recommended to work on the project thread continuously. A timely completion of your work on the project, as outlined in the course content table, will allow you to focus on the preparation for the class tests.

Group Work

There is no group work and all assessments are based on individual work. However, students are encouraged to form study groups to exchange their understanding of the course contents and to provide feedback to the website projects.

Readings

The following textbook is mandatory to buy (available at Vicbooks www.vicbooks.co.nz):
Craig Knuckles, David Yuen (2005). Web applications - Concepts & Real World Design. John Wiley. ISBN: 0-471-20458-7.

The following book covers all the material required for a successful start of ELCM351.
Terry Felke-Morris (2011). *Web Development and Design Foundations with XHTML: International Version*. Edition 5. Pearson. ISBN-13: 9780137052752. ISBN-10: 0137052758.

Materials and Equipment

Lectures:
Students are expected to prepare for lectures by reading the relevant book chapters in advance. The chapters must be reviewed again after the lectures. Each chapter of the textbook contains exercise questions that help to validate and deepen your knowledge of the subject. It is recommended to attempt answers to all these questions. This will result in an excellent preparation for the class tests and the project thread.

Workshops and Project Thread:
The time in the workshops is mainly used to make progress on your project thread as described in the textbook. You are expected to have read the relevant chapter and the instructions for the project thread prior to the allocated workshop time so that work can start as soon as you arrive. Please double-check that you do have a valid computer account. You must use the ELCM351 Virtual PC environment to work on your project. This environment can be accessed in any SIM Lab. Your project will be marked after the due date based on the content you provide in this environment. *Apart from the feedback during the workshop hours you will also have the opportunity to ask for feedback on the work you have done prior to Week 7*. The software required for the project thread is provided within the ELCM351 Virtual PC environment. Note the **Reset button** which will delete all your work in case you confirm to reset your ELCM351 Virtual PC environment. It is your responsibility to use this button with caution. Claims that you have accidentally pressed the reset button will not be considered. You can also install the software on your own computer by following the guides that are made available to you. However, no technical support will be provided for issues that relate to your own computer.

Assessment Requirements

The assessment is based on the on the following individual components:

Assessment component	Date due	Learning objectives	Contribution to final grade
Class Test 1	Thu, 7th April, 10:30am-11:30am	LO1, LO2, LO3, LO4	30%
Class Test 2	Thu, 2nd June, 10:30am-11:30am	LO4, LO5, LO6, LO7	30%
Project thread	by Fri, 3rd June, 3pm	LO2, LO3, LO5, LO6	40%

The *two class tests* will be conducted during the first hour of lectures in week 6 and week 12, respectively. Unless otherwise stated, all material covered up to the week prior to the class test can potentially be assessed. Details will be advised closer to the date. For *the project thread* you will work on constructing a Web site where a description of, and link to, all applications created are collectively added to a homework page within your ELCM351 Virtual PC environment. The project thread runs throughout the course. At the end of each textbook chapter you will find detailed instructions about the project thread. You are expected to complete all the instructions for the project thread described in Chapter 1 through to and inclusive of Chapter 10. After the due date, the contents of your ELCM351 Virtual PC environment will be marked for the quality of the functionality, code and documentation that you provide. A detailed marking sheet will be made available to you at the beginning of the course. Below you can find the guidance rubrics associated with each assessment component.

Class Test 1 Rubric – 30% contribution towards overall assessment			
Aspect/Weight	*Exemplary*	*Satisfactory*	*Unsatisfactory*
Architecture of e-commerce applications **LO1, LO2** 20% weight	Full abilities to recall and comprehend, and good ability to apply the notion of the Five Layer Model of the Internet, the conceptual anatomy of e-commerce apps and the technologies to design and to develop e-commerce apps	Sufficient abilities to recall and comprehend, and basic ability to apply the notion of the Five Layer Model of the Internet, the conceptual anatomy of e-commerce apps and technologies to design and to develop e-commerce apps	Insufficient abilities to recall, comprehend or apply the notion of the Five Layer Model of the Internet, the conceptual anatomy of e-commerce apps and the technologies to design and to develop e-commerce apps
Front-end processing of client-side data **LO2, LO3** 20% weight	Full abilities to recall and comprehend, and good ability to apply the JavaScript language, the manipulation of browser objects and client-side validation	Sufficient abilities to recall and comprehend, and basic ability to apply the JavaScript language, the manipulation of browser objects and client-side validation	Insufficient abilities to recall, comprehend or apply the JavaScript language, manipulation of browser objects and client-side validation
Interfacing between front-end and back-end **LO2, LO3** 20% weight	Full abilities to recall and comprehend, and good ability to apply the basics of CGI programming, e.g. variables, operations and functions	Sufficient abilities to recall and comprehend, and basic ability to apply the basics of CGI programming, such as variables, operations and functions	Insufficient abilities to recall, comprehend or apply the basics of CGI programming, such as variables, operations and functions
Dynamic Website Development **LO3, LO4**	Full abilities to recall and comprehend, and good ability to apply advanced CGI concepts such as	Sufficient abilities to recall and comprehend, and basic ability to apply advanced CGI concepts	Insufficient abilities to recall, comprehend apply advanced CGI concepts such as loops,

20% weight	loops, arrays, hashes and file operations	such as loops, arrays, hashes and file operations	arrays, hashes and file operations
Back-end Processing Of Client data **LO3, LO4** 20% weight	Full abilities to recall and comprehend, and good ability to apply processing of form data, and strategies to decode query strings with GET and POST methods	Full abilities to recall and comprehend, and good ability to apply the processing of form data, and strategies to decode query strings with GET and POST methods	Insufficient abilities to recall, comprehend or apply the processing of form data, and strategies to decode query strings with GET and POST methods

Class Test 2 Rubric – 30% towards overall assessment			
Aspect/Weight	*Exemplary*	*Satisfactory*	*Unsatisfactory*
Transactional Website Development **LO4** 20% weight	Full abilities to recall and comprehend, and good ability to apply the concepts of hidden form elements, session states and caching	Sufficient abilities to recall and comprehend, and basic ability to apply the concepts of hidden form elements, session states and caching	Insufficient abilities to recall, comprehend or apply the concepts of hidden form elements, session states and caching
Cookies and Online-Marketing **LO6, LO7** 20% weight	Full abilities to recall and comprehend, and good ability to apply the notions of cookies, third party cookies and ad servers	Sufficient abilities to recall and comprehend, and basic ability to apply the notions of cookies, third party cookies and ad servers	Insufficient abilities to recall, comprehend or apply the notions of cookies, third party cookies and ad servers
Site Preferences and Security Concerns **LO4, LO6** 20% weight	Full abilities to recall and comprehend, and good ability to apply the concepts of persistent cookies, password protection and logged-on security	Sufficient abilities to recall and comprehend, and basic ability to apply the concepts of persistent cookies, password protection and logged-on security	Insufficient abilities to recall, comprehend or apply the concepts of persistent cookies, password protection and logged-on security
Utilities to tailor e-commerce applications **LO4, LO5** 20% weight	Full abilities to recall and comprehend, and good ability to apply CGI modules for processing client data, printing form data and e-mail utilities	Sufficient abilities to recall and comprehend, and basic ability to apply CGI modules for processing client data, printing form data and e-mail utilities	Insufficient abilities to recall, comprehend or apply CGI modules for processing client data, printing form data and e-mail utilities
Database-Driven e-commerce Applications **LO5, LO7** 20% weight	Full abilities to recall and comprehend, and good ability to apply the Three-Tier Model for e-commerce apps, database interfacing with CGI modules and state tables	Sufficient abilities to recall and comprehend, and basic ability to apply the Three-Tier Model for e-commerce applications, database interfacing with CGI modules and state tables	Insufficient abilities to recall, comprehend or apply the Three-Tier Model for e-commerce applications, database interfacing with CGI modules and state tables

Project Thread Rubric – 40% towards overall assessment

Aspect/Weight	Exemplary	Satisfactory	Unsatisfactory
Mark-up On the Front-end **LO2, LO3** 6% weight	Ability to soundly and creatively apply HTML and CSS techniques required	Ability to soundly apply HTML and CSS techniques required	Inability to soundly apply HTML and CSS techniques required
Validation of client data on the front end **LO2, LO3** 10% weight	Ability to soundly and creatively apply JavaScript techniques required	Ability to soundly apply JavaScript techniques required	Inability to soundly apply JavaScript techniques required
Basic Interfaces between front- and back-end **LO2, LO3** 4% weight	Ability to soundly and creatively apply basic CGI techniques required	Ability to soundly apply basic CGI techniques required	Inability to soundly apply basic CGI techniques required
CGI processing of client data **LO2, LO3** 12% weight	Ability to soundly and creatively apply CGI techniques required to process form data	Ability to soundly apply CGI techniques required to process form data	Inability to soundly apply CGI techniques required to process form data
Dynamic Generation of Websites **LO2, LO3** 14% weight	Ability to soundly and creatively apply CGI structures such as arrays and hashes required to dynamically customize Websites	Ability to soundly apply CGI structures such as arrays and hashes required to dynamically customize Websites	Inability to soundly apply CGI structures such as arrays and hashes required to dynamically customize Websites
Enabling Transactional Websites **LO2, LO3** 16% weight	Ability to soundly and creatively apply advanced CGI concepts such as state files required to maintain state among e-commerce transactions	Ability to soundly apply advanced CGI concepts such as state files required to maintain state among e-commerce transactions	Inability to soundly apply advanced CGI concepts such as state files required to maintain state among e-commerce transactions
Implementing Site Preferences and Security **LO2, LO3, LO6** 10% weight	Ability to soundly and creatively apply cookies and state files to required to select preferences and guarantee logged-on state	Ability to soundly apply cookies and state files to required to select preferences and guarantee logged-on state	Inability to soundly apply cookies and state files to required to select preferences and guarantee logged-on state
Utilizing email functionality **LO2, LO3, LO6** 2.4% weight	Ability to soundly and creatively apply CGI modules required to implement email functionality	Ability to soundly apply CGI modules required to implement email functionality	Inability to soundly apply CGI modules required to implement email functionality
Database-driven e-commerce applications **LO2, LO3, LO5** 5.6% weight	Ability to soundly and creatively apply state tables required for database-driven apps	Ability to soundly apply state tables required for database-driven apps	Inability to soundly apply state tables required for database-driven apps

Quality of Programming Code **LO3** 10% weight	All code is sound, complete and non-redundant	Most code is sound and complete, and shows few redundancy	Much code is incorrect or incomplete, or shows a lot of redundancy
Quality of Documentation **LO3** 10% weight	Adequate documentation offered that is original and creative	Adequate documentation offered for most tasks required	Inadequate documentation offered for most tasks required

Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and audit purposes. The findings may be used to inform changes aimed at improving the quality of FCA programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.

Examinations

There is no final exam.

Penalties

Access to the ELCM351 Virtual PC environment will only be granted until the deadline of the project thread. In fairness to other students, project threads submitted outside your ELCM351 Virtual PC environment will not be accepted. It is your responsibility to complete the project thread in time within your ELCM351 Virtual PC environment. For the same reason, failure to sit the class tests will automatically result in zero marks for the test. In the event of bereavement or prolonged illness affecting your ability to meet the project deadline or sit the class tests, discuss your situation with the course coordinator as soon as you are able to. You must verify your claim, e.g., produce a medical certificate. By doing so, you agree to the course coordinator seeking verification of your documentation. Extensions to the project thread or alternative arrangements for a test will only be granted under these conditions.

Practicum Arrangements

Workshop Allocation Procedure
Sign-up to your workshop slot will be available on the sign-up system:
https://signups.victoria.ac.nz

You must sign up for the workshop sessions yourself in the first week. Please contact Xiaoyi if you have not signed up at that time. You must select a time slot that fits your timetable and enter your name on only one of the lists provided. Once you have been allocated to a workshop, it is your responsibility to know where and when your workshop is scheduled.

Hints
- Make sure you consult your personal timetable, so that your selected workshop time does not clash with other classes. It will not be easy to change your selection once accepted.
- If your name appears on more than one workshop list, the senior tutor reserves the right to put you in the workshop of her choice.

- Each workshop slot can take up to 28 students. When a list is full, it is removed from circulation. As the names are entered on a first-come-first-served basis, it is strongly recommended that you attend to this early, otherwise you may be allocated to a less desirable time slot.
- If you have any serious problems about the allocations, see the senior tutor.

Lab Access

Information Systems and Electronic Commerce students have access to a range of computer lab facilities. This means that you can still undertake this course even if you do not have a computer at home. Like all university students you are able to use any SCS computer lab throughout the University (this includes labs in the Murphy building, the Library and in the Law School) as long as you have a current SCS account. If you do not have a current SCS account, contact the SCS helpdesk in either the library or the Murphy building. However, the ELCM351 Virtual PC environment is not accessible from the SCS labs. In addition, INFO and ELCM students have access to the purpose built school lab MY-201. This lab is located on the second floor of the Murphy building. Please note that specialist software found in the SIM labs is not available in all the SCS labs. There are two kinds of lab access provided for this course:

- Scheduled workshop sessions: Workshop supervisors will be in attendance and available to assist you and to answer questions. This is your main opportunity to obtain technical help. Your workshop supervisors are not obliged to assist you if you have not attended your scheduled sessions. Workshop attendance is not compulsory but will be monitored.
- Ad-hoc access: The lab offers 24-hour access via student ID cards unless booked for another class. Students should check the booking schedules on the lab doors before entering a laboratory to ensure they are not interrupting a class and they can finish their work before the next scheduled class. You may be asked to leave by the lab supervisor if the machine you are using is required for a scheduled class.

Mandatory Course Requirements

While attendance of the lectures and workshops is not a mandatory requirement, it will largely facilitate your learning process and help you to perform well in the tests and web site project.

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before 11 March 2011.

2. The standard last date for withdrawal from this course is 14 May. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an '*Application for Associate Dean's Permission to Withdraw Late*' including supporting documentation.

The application form is available from either of the Faculty's Student Customer Service Desks.

Class Representative

A class representative will be elected in the first class, and that person's name and contact details made available to VUWSA, the Course Coordinator and the class. The class representative provides a communication channel to liaise with the Course Coordinator on behalf of students.

Communication of Additional Information

All formal notices relating to this course will be posted on the Blackboard system
http://blackboard.vuw.ac.nz
You are expected to check for announcements on Blackboard on a regular basis. Please contact the Senior Tutor in order to have a user ID and a password to log in.

Use of Turnitin (if applicable)

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine http://www.turnitin.com Turnitin is an on-line plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and subject to checking by Turnitin. Turnitin will retain a copy of submitted materials on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

For the following important information follow the links provided:

Academic Integrity and Plagiarism
http://www.victoria.ac.nz/home/study/plagiarism.aspx

General University Policies and Statutes
Find key dates, explanations of grades and other useful information at
www.victoria.ac.nz/home/study.
Find out about academic progress and restricted enrolment at
www.victoria.ac.nz/home/study/academic-progress.
The University's statutes and policies are available at www.victoria.ac.nz/home/about/policy,
except qualification statutes, which are available via the Calendar webpage at
www.victoria.ac.nz/home/study/calendar (See Section C).
Further information about the University's academic processes can be found on the website of the Assistant Vice-Chancellor (Academic) at
www.victoria.ac.nz/home/about_victoria/avcacademic/default.aspx

AVC (Academic) Website: information including: Conduct, Academic Grievances, Students with Impairments, Student Support
http://www.victoria.ac.nz/home/about_victoria/avcacademic/Publications.aspx

Faculty of Commerce and Administration Offices
http://www.victoria.ac.nz/fca/studenthelp/

Manaaki Pihipihinga Programme
http://www.victoria.ac.nz/st_services/mentoring/