



COMP249

Web Technology

S1 Day 2014

Computing

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General Information

Unit convenor and teaching staff

Unit Convenor

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Tuesday 4-5

Other Staff

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Credit points

3

Prerequisites

(COMP115(P) or COMP155(P)) and (ISYS114(P) or ISYS154(P))

Corequisites

Co-badged status

Unit description

This unit covers a range of techniques and concepts that are relevant to implementing systems on the world wide web. From web site development using HyperText Markup Language (HTML) and eXtensible Markup Language (XML), through to complete client–server applications, the unit explores the full spectrum of this technology, providing insight into the standards underlying the web and the programming techniques used to exploit these standards to build web applications.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

Explain what World Wide Web is and how it works.

Critique web design and apply good design principles.

Design and develop a database-backed web site using a modern scripting language.
Explain the legal and ethical issues relating to web applications.
Critically evaluate contemporary and emerging Web technologies.

Assessment Tasks

Name	Weighting	Due
Diagnostic Task	5%	Week 4
Portfolio Blog	15%	Every week and week 12
Web Application	20%	Week 8
Report	15%	Week 11
Exam	45%	TBA

Diagnostic Task

Due: **Week 4**

Weighting: **5%**

This is an early task to give students some feedback on their programming skills and knowledge of HTML relative to the requirements of COMP249. You will be asked to write some simple Python code that handles or generates HTML pages.

On successful completion you will be able to:

- Design and develop a database-backed web site using a modern scripting language.

Portfolio Blog

Due: **Every week and week 12**

Weighting: **15%**

Each week you will be given one or two problems in the workshops marked as 'portfolio questions'. You will post your answers to these questions along with a short comment on an iLearn blog; the blog will be visible only to you and the unit staff. You will receive one mark each week up to a maximum of 10 for posting reasonable attempts at a solution.

At the end of the semester, you will write up a portfolio presentation based on your blog posts. This will take some of the content from your blog and add new reflection and commentary. It should be a summary of the major aspects of the unit from your perspective. This will be marked out of 5.

On successful completion you will be able to:

- Explain what World Wide Web is and how it works.
- Critique web design and apply good design principles.

Web Application

Due: **Week 8**

Weighting: **20%**

This is the major programming task for this unit and you must pass this assignment to pass the unit. You will develop a web application that makes use of a database and allows users to login, carry out some transactions, and logout. You will be provided with a set of unit tests that your code must pass as well as a set of functional requirements for the application.

If you do not manage to pass this assignment on the first attempt, you will be given some guidance and be allowed to re-submit in order to gain a pass mark.

You will submit this task online via iLearn.

On successful completion you will be able to:

- Design and develop a database-backed web site using a modern scripting language.

Report

Due: **Week 11**

Weighting: **15%**

You will write a report on an aspect of web design and development. This will involve you researching the topic to find sources of information and developing your report. You will be provided with pointers to resources but will be expected to find more based on your own research.

You will submit this report online via iLearn.

On successful completion you will be able to:

- Explain what World Wide Web is and how it works.
- Critique web design and apply good design principles.
- Explain the legal and ethical issues relating to web applications.
- Critically evaluate contemporary and emerging Web technologies.

Exam

Due: **TBA**

Weighting: **45%**

The final exam will assess your ability to describe and explain the technologies we have covered in the unit. In particular we will ask about the special topics covered towards the end of the unit on advanced and emerging web technology topics.

On successful completion you will be able to:

- Explain what World Wide Web is and how it works.
- Critique web design and apply good design principles.
- Explain the legal and ethical issues relating to web applications.
- Critically evaluate contemporary and emerging Web technologies.

Delivery and Resources

Classes

COMP249 is taught through a mixture of traditional lectures and online video presentations.

Each week a number of video presentations will be made available on iLearn, you should watch these and follow up on the topics covered before the lecture on Wednesday. The lecture will recap some of the video content and provide a forum for discussion of the topics of the week. Some new material may be presented in the lecture if that format is more appropriate.

You will also have a two hour workshop each week in the computer laboratory. This will be used as a combined tutorial and practical class, with tasks each week to engage you in the topics we are discussing. It is important that you stay up to date on these tasks so that you will be better prepared for the major assessment in the unit. The workshops give you a chance to talk over any problems with your tutor.

You will submit five workshop tasks through the semester which will be work that comes out of the tasks that you carry out in the workshops.

Since your tutor will be keeping track of your marks, you should attend the workshop that you enroll in. If you do need to change, make sure your tutor and the tutor in the new class agree.

Required Texts

There is no required text for COMP249 this semester.

We have written a set of notes for the unit which will be added to through the semester. You can find them here:

- [Python Web Programming](#)

We will also provide notes, slides and links to other resources each week. It is important that you follow up links provided with the video presentations and in the notes on each topic.

Required Technology

You will be writing server side programs in [Python 3.3](#). We will use Eclipse as the recommended development environment although you are free to use your own favourite editor if you wish.

You will be making use of a number of different web browsers (Firefox, Internet Explorer, Chrome, Safari, Opera...) to test web pages. All of this software will run on Windows, Mac or Linux.

Changes for 2014

The main changes this year is the re-introduction of the portfolio assessment task. This has been used in previous years in a different form; the basic idea is to encourage you to collect together examples of your work through the semester and reflect on the things you've learned. This year we're trying out the iLearn Blog facility; you will write up your thoughts each week in a blog post and then draw a few of these together at the end of semester into a portfolio document.

The portfolio task replaces the Workshop Tasks we ran last year which were five small problems that were set through the semester. We hope the portfolio will allow us to give you better feedback through the semester and allow you to show us your progress.

We've also re-introduced an early diagnostic task which will ask you to do a bit of programming early in the semester. The goal of this is to alert you to the level of programming literacy you will need to get the most out of COMP249. This isn't a programming unit but we use programs to illustrate and understand the design of web applications.

The main programming assignment is similar in scope to previous years however we are presenting it a little differently this year. Last time there were two phases to the project, one where you wrote a backend database interface and another where you wrote the web application proper. This year we will build the web application in more stages, growing in complexity but at each point you will have a working application. In fact this is much more like a real agile development process and we hope that it will give you a good picture of how the whole application fits together. As in previous years, you will need to pass this assignment to pass the unit. We will make it clear which point you need to get to to achieve a pass.

Unit Schedule

The schedule below is the planned topic list for the unit but minor changes may be made in response to student feedback or other factors. See the iLearn unit page for the definitive and more detailed week by week breakdown.

1. Core Web Technology
2. HTML, CSS, Python
3. Web Servers, Python Web Scripting
4. Forms Processing, Databases
5. Cookies, Web Application Development
6. HTML, CSS, Web Design
7. Javascript, Security on the Web
8. Usability and Accessibility
9. Data on the Web
10. Advanced Javascript, AJAX
11. Special Topics
12. Special Topics

13. Review

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Special Consideration

Special Consideration is intended for a student who is prevented by serious and unavoidable disruption from completing any unit requirements in accordance with their ability. This application form needs to be filled and submitted to the Science centre along with some evidence to support your case. Depending on the circumstances presented, the convenor may choose to give you an alternate assessment, additional time for an assessment, make-up exam, etc.

If a Supplementary Examination is granted as a result of the Special Consideration process the examination will be scheduled after the conclusion of the official examination period. For details of the Special Consideration policy specific to the Department of Computing, see the [Department's policy page](#).

[University Special Consideration Policy](#)

Grade Appeal

In case of problems arising with your final grade, the first step is to organise a review. The Department recommends that you request an appointment with the convenor of the unit in order to review your grade. If the review does not solve the problem, a formal Grade Appeal can be

lodged.

See the [University Grade Appeal Policy](#).

Academic Honesty and Plagiarism

[University Academic Honesty Policy](#)

Plagiarism involves using the work of another person and presenting it as one's own. The Department, in line with University policy, treats all cases seriously. In particular, the Department, keeps a record of all plagiarism cases. This record is referred to so that an appropriate penalty can be applied to each case.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

The staff on the unit are here to help you succeed in your study. Please feel free to contact your tutor or your lecturer at any time if you are having trouble meeting any deadline or staying up to date with the work in the unit.

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Students with a disability are encouraged to contact the [Disability Support Unit](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

The Science Centre, ground floor in building E7A, is the first point of call for most enquiries relating to your program of study.

IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

In the first instance, students should contact their tutor if there is a problem with hardware or software during a workshop session. If they can't resolve the issue, or if the problem occurs outside of a class time, then contact the [ScienceIT](#) support desk on level 3 of E6A.

Graduate Capabilities

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Critique web design and apply good design principles.
- Critically evaluate contemporary and emerging Web technologies.

Assessment task

- Report

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Explain what World Wide Web is and how it works.
- Critique web design and apply good design principles.
- Design and develop a database-backed web site using a modern scripting language.
- Explain the legal and ethical issues relating to web applications.
- Critically evaluate contemporary and emerging Web technologies.

Assessment tasks

- Portfolio Blog
- Web Application
- Report
- Exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Critique web design and apply good design principles.
- Critically evaluate contemporary and emerging Web technologies.

Assessment task

- Report

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Design and develop a database-backed web site using a modern scripting language.
- Explain the legal and ethical issues relating to web applications.
- Critically evaluate contemporary and emerging Web technologies.

Assessment tasks

- Web Application
- Report

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be

imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Design and develop a database-backed web site using a modern scripting language.

Assessment task

- Report

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Explain what World Wide Web is and how it works.
- Explain the legal and ethical issues relating to web applications.
- Critically evaluate contemporary and emerging Web technologies.

Assessment tasks

- Portfolio Blog
- Report

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- Explain the legal and ethical issues relating to web applications.
- Critically evaluate contemporary and emerging Web technologies.

Assessment task

- Report

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcome

- Explain the legal and ethical issues relating to web applications.

Assessment task

- Report

Grading Standards

Your final grade depends on your performance in each part of the assessment. For each task, you receive a mark that reflects your standard of performance regarding each learning outcome assessed by this task. Then the different component marks are added up to determine your total mark out of 100. Your grade then depends on this total mark and your overall standard of performance.

Pass: in order to pass the unit you must at least:

- make at least five portfolio blog posts;
- achieve a pass in the Web Application assignment;
- achieve a pass in the final exam.

Credit: all of the above plus shows a sound understanding of web technology, able to provide full solutions to all set assignment work and demonstrate an appreciation of how everything works together on the web.

Distinction: all of the above plus a demonstrated ability to apply the technologies covered to new problems or in new ways. Assignment solutions are excellent and well presented, implementing extended features or displaying high quality work.

High Distinction: very exceptional students who show a complete mastery of web technologies and are able to demonstrate their thorough understanding of the web at large and the issues involved in building modern web applications.

Criteria for passing the different assessment tasks will be made clear in the guidelines distributed with the task descriptions. **Note that you will need to implement a minimum level of functionality in the Web Application to achieve a pass.** If you do not achieve at least a pass for the first submission of this assignment, then you can resubmit this assignment at a new due

date, but you are then additionally asked to meet with one of the teaching staff for an oral examination. However, if you take up this "second chance" you cannot get more than a pass grade for this assignment.

If you do not meet the above criteria ***you will fail the unit irrespective of the sum total of the marks you achieve in other assessment tasks.***

Your final grade will be derived by combining the marks from the in-term assessment and the final examination. You will be given a standard normalised grade (SNG) that reflects your achievement in the unit but this might not be a simple sum of the component marks.

Late Submission

Unless you have made prior arrangements for late submission due to unforeseeable circumstances, you will be penalised one mark for every day that you submit late. If you submit portfolio blog posts more than one week late, they will not attract any marks but will be counted towards the minimum five posts required to pass the unit. In the case of the Web Application assignment, if you submit late without prior arrangement you may still be able to pass the assignment (if you met the requirements) but your numerical mark will be reduced.