School of Science, Computing and Engineering Technologies

SWINBURNE UNIVERSITY OF TECHNOLOGY

Unit Outline

COS30020

Advanced Web Development

Semester May, 2023

Please read this Unit Outline carefully. It includes:

PART A Unit summary

PART B Your Unit in more detail

PART C Further information

"Swinburne University of Technology recognises the historical and cultural significance of Australia's Indigenous history and the role it plays in contemporary education

Each day in Australia, we all walk on traditional Indigenous land

We therefore acknowledge the traditional custodians of the land that our Australian campuses currently occupy, the Wurundjeri people, and pay respect to Elders past and present, including those from other areas who now reside on Wurundjeri land"

PART A: Unit Summary

Unit Code		COS30020
Unit Title		Advanced Web Development
Duration		One Semester or equivalent
Total Contact Hours		48 hours - Blended
Delivery Locations		Ho Chi Minh City
Requisites:		
	Pre-requisites	COS10005 Web Development or COS10011 Creating Web Applications Plus COS10009 Introduction to Programming
	Co-requisites	Nil
	Concurrent pre-requisites	Nil
	Anti-requisites	Nil
	Assumed knowledge	Nil
Credit Points		12.5
Assessment		1. Assignment 85% 2. Tutorial Lab Exercises 15%

Aim

This unit is designed to introduce a variety of technologies and techniques typically used in development of contemporary web-based systems, and to enable students to achieve a level of fluency in using these in a thoughtful and considered manner. Two web programming techniques will be introduced. The first is to use web-based embedded scripting language (PHP) on a web server (Apache) and a server-side database (MySQL).The aim is to help you gain a solid applied skills and knowledge in these server-side Web Technologies.

Unit Learning Outcomes

Students who successfully complete this Unit should be able to:

1. Describe, identify and debug issues related to the development of web applications.
2. Design and develop interactive web applications using embedded server-side scripting language PHP.
3. Use MySQL for data management and manipulate MySQL with PHP. 4. Write PHP scripts to manage server-side operations

Key Generic Skills

You will be provided with feedback on your progress in attaining the following generic skills:

- analysis skills,
- problem solving skills,
- ability to tackle unfamiliar problems, and
- ability to work independently

Content

- Formation of web pages
- Server-side scripting language PHP: variables, data types, operations, strings, functions, control statements, arrays, files and directory access, maintaining state
- Functions and control statements
- Access and manipulation of MySQL
- Maintaining state
- Object Oriented Programming
- Error resolution techniques

PART B: Your Unit in more details

Feedback provided by previous students through the Student Survey has resulted in improvements that have been made to this unit. Recent improvements include:

Assessment instructions have been rewritten to provide more clarity about the assessment requirements.

Unit Teaching Staff

Name	Role	Email	Consultation Times
Mr Eric LE	Lecturer	hieule@swin.edu.au	By appointment via email

Learning and Teaching Structure

Activity	Total Hours	Hours per Week	Teaching Period Weeks
Lectures	24 hours	02 hours	Weeks 01 to 12
Tutorials	24 hours	02 hours	Weeks 01 to 12

In a Semester, you should normally expect to spend, on average, twelve and a half hours of total time (formal contact time plus independent study time) a week on a 12.5 credit point unit of study.

Week by Week Schedule

Week	Week Beginning	Teaching and Learning Activity	Student Task or Assessment
1	May 08	**Lecture:** An Overview and Introduction to Web Application Development; Getting started with PHP Tutorial **Lab:** Lab 1 - Introduction to Web Application Development and getting started with PHP	Tutorial Lab 1 exercises and Lab 1 completion in-lab check
2	May 15	**Lecture:** PHP1 - data types and operators **Tutorial:** Lab 2 – PHP – data types and operators	Tutorial Lab 2 exercises and Lab 1/Lab 2 completion in-lab check
3	May 22	**Lecture:** PHP2 - functions and control structures **Tutorial:** Lab 3 – PHP functions and control structures	Tutorial Lab 3 exercises and Lab 2/Lab 3 completion in-lab check **Assignment 1 released** (on Canvas)
4	May 29	**Lecture:** PHP strings **Tutorial:** Lab 4 – PHP strings	Tutorial Lab 4 exercises and Lab 3/Lab 4 completion in-lab check

5	June 05	**Lecture:** PHP files and directories **Tutorial:** Lab 5 – PHP file I/O	Tutorial Lab 5 exercises and Lab 4/Lab 5 completion in-lab check
6	June 12	**Lecture:** PHP arrays **Tutorial:** Lab 6 – PHP arrays	Tutorial Lab 6 exercises and Lab 5/Lab 6 completion in-lab check **Assignment 1 (ESP) is due this week, Sun 18 June 2023 @23:59 (VN Time).** (ESP) **Assignment 2 released** (on Canvas)
7	June 19	**Lecture:** Working with database and MySQL **Tutorial:** Lab 7 – Working with Databases and MySQL	Tutorial Lab 7 exercises and Lab 6/Lab 7 completion in-lab check
8	June 26	**Lecture:** Manipulating MySQL databases with PHP **Tutorial:** Lab 8 – Manipulating MySQL databases with PHP	Tutorial Lab 8 exercises and Lab 7/Lab 8 completion in-lab check
Mid Semester Break. No classes from Mon, 03rd to Sat, 08th of July			
9	July 10	**Lecture:** Managing state information Security **Tutorial:** Lab 9 - Managing State Information	Tutorial Lab 9 exercises and Lab 8/Lab 9 completion in-lab check
10	July 17	**Lecture:** Developing objected oriented PHP **Tutorial:** Lab 10 – Classes and Object - Oriented Programming with PHP	Tutorial Lab 10 exercises and Lab 9/Lab 10 completion in-lab check
11	July 24	**Lecture:** Special Topics **Tutorial:** Lab 11 – Special Topics	Tutorial Lab 11 exercises and Lab 10/Lab 11 completion in-lab check **Assignment 2 (ESP) is due this week, Sun 30 July 2023 @23:59 (VN Time)**
12	July 31	**Lecture:** Unit Review **Tutorial:** None	Lab 11 completion in-lab check

Assessment

a) Assessment Overview

Tasks and Details	Individual or Group	Weighting	Unit Learning Outcomes that this assessment task relates to	Assessment Due Date
Tutorial (Laboratory) Exercises	Individual	15% (1.5% for each lab exercise; total marks capped at 15%)	1,2,3,4	**One week after each lab (except Lab 11)**
Assignment 1 (system development task)	Individual	40%	1,2	**Week 6 (due on Sunday, 18 June at 23:59 – VN Time)**
Assignment 2 (system development task)	Individual	45%	1, 3, 4	**Week 11 (due on Sunday, 30 July at 23:59 – VN Time)**

Tutorial lab exercises: in the tutorial lab your tutor will check the completion of your completed lab exercises. If you do not manage to complete the exercises during or prior to the lab, they may be assessed by you tutor in the tutorial of the following week but no later.

Assignments 1 and 2: In Assignment 1 and 2 you will demonstrate your ability to develop web applications using PHP and MySQL.

b) Minimum requirements to pass this Unit

As the minimum requirements of assessment to pass a unit and meet all ULOs to a minimum standard, an undergraduate student must have achieved:

- an **aggregate mark** for the unit of **50% or more**, including

c) Examinations

The unit you are enrolled in has an official examination, you will be expected to be available for the entire examination period including any Special Exam period.

d) Submission Requirements

Assignments must be submitted through the ESP system (https://esp.ict.swin.edu.au).

Please ensure you keep a copy of all assessments that are submitted.

Detailed submission instructions will be stated in the assignment specifications.

e) Extensions and Late Submission

- Extensions will only be granted in exceptional circumstances on medical or compassionate grounds.
  Extensions MUST be applied for in advance of the assignment's due date.
- **Late Submissions** - Unless an extension has been approved from the Unit Convenor, late submissions will result in a penalty. You will be penalised 10% of your achieved mark for each working day the task is late, up to a maximum of 5 working days. After 5 working days, a zero result will be recorded.

For example, if a student achieves 90/100 on an assessment task but the task was submitted two days late.A late penalty of 20% (of that 90/100 mark) will be applied and the student's final mark will be recorded
as 72/100 (being 90 less 09marks/1st day and another 09 mark/2nd day).

- Feedback or comments from the marker will generally not be available on assignments which are submitted after five working days past the published deadline.

f) Referencing

To avoid plagiarism, you are required to provide a reference whenever you include information from other sources in your work. Further details regarding plagiarism are available in Section C of this document.

Helpful information on referencing can be found at the link below:

http://www.swinburne.edu.au/lib/studyhelp/harvard-quick-guide.pdf

g) Groupwork Guidelines

Not applicable. All assessments in this unit are individual.

Recommended Reading Materials

There is no prescribed text for this subject. There will be many links provided to online resource in the lectures and on Canvas Printed Resources:

Don Gosselin, Diana Kokoska and Robert Easterbrooks, *PHP Programming with MySQL, 2nd Edition,* Course Technology, 2011.

On-line books / eBooks / hard copies:

- There are many good books on-line, as eBooks, available through the Library. http://www.swinburne.edu.au/lib/
- Hard copies of the textbook are also reserved in the library.

On-line References:

- Primary references about the Web, Web Servers, PHP, and MySQL are online: see "Canvas" resources for some useful links.

PART C: FUTHER INFORMATION

For further information on any of the below topics, refer to Swinburne's Current Students web page http://www.swinburne.edu.au/student/.

Student Charter

Please familiarise yourself with Swinburne's Student Charter. The charter describes what students can reasonably expect from Swinburne in order to enjoy a quality learning experience. As students contribute to their own learning experience and to that of their fellow students, the charter also defines the University's expectations of students.

Student behaviour and wellbeing

Swinburne has a range of policies and procedures that govern how students are expected to conduct themselves throughout the course of their relationship with the University. These include policies on expected standards of behaviour and conduct which cover interaction with fellow students, staff and the wider University community, in addition to following the health and safety requirements in the course of their studies and whilst using University facilities.

All students are expected to familiarise themselves with University regulations, policies and procedures and have an obligation to abide by the expected guidelines. Any student found to be in breach may be subject to relevant disciplinary processes. Some examples of relevant expected behaviours are:

- Not engaging in student misconduct
- Ensuring compliance with the University's Anti-Discrimination, Bullying and Violence and Sexual Harassment requirements
- Complying with all Swinburne occupational health and safety requirements, including following emergency and evacuation procedures and following instructions given by staff/wardens or emergency response.

In teaching areas, it is expected that students conduct themselves in a manner that is professional and not disruptive to others. In all Swinburne laboratories, there are specific safety procedures which must be followed, such as wearing appropriate footwear and safety equipment, not acting in a manner which is dangerous or disruptive (e.g. playing computer games), and not bringing in food or drink.

Canvas

You should regularly access the Swinburne Course Management System (Canvas). Canvas is regularly updated with important Unit information and communications.

Communication

All communication will be via your Swinburne email address. If you access your email through a provider other than Swinburne, then it is your responsibility to ensure that your Swinburne email is redirected to your private email address.

Plagiarism

Plagiarism is the action or practice of taking and submitting or presenting the thoughts, writings or other work of someone else as though it is your own work. Plagiarism includes any of the following, without full and appropriate acknowledgment to the original source(s):

- The use of the whole or part of a computer program written by another person;
- the use, in essays or other assessable work, of the whole or part of a written work from any source including but not limited to a book, journal, newspaper article, set of lecture notes, current or past student's work, any other person's work, a website or database;
- The paraphrasing of another's work;
- The use of musical composition, audio, visual, graphic and photographic models,
- The use of realia that is objects, artefacts, costumes, models and the like.

Plagiarism also includes the preparation or production and submission or presentation of assignments or other work in conjunction with another person or other people when that work should be your own independent work. This remains plagiarism whether or not it is with the knowledge or consent of the other person or people. It should be noted that Swinburne encourages its students to talk to staff, fellow students

and other people who may be able to contribute to a student's academic work but that where independent assignment is required, submitted or presented work must be the student's own.

Enabling plagiarism contributes to plagiarism and therefore will be treated as a form of plagiarism by the University. Enabling plagiarism means allowing or otherwise assisting another student to copy or otherwise plagiarise work by, for example, allowing access to a draft or completed assignment or other work. Swinburne University uses plagiarism detection software (such as Turnitin) for assignments submitted electronically via Canvas. Your Convenor will provide further details.

The penalties for plagiarism can be severe ranging from a zero grade for an assessment task through to expulsion from the unit and in the extreme, exclusion from Swinburne. Consequently you need to avoid plagiarism by providing a reference whenever you include information from other sources in your work.

Student support

You should talk to your Unit Convenor or Student Services, for information on academic support services available for Swinburne students.

Special consideration

If your studies have been adversely affected due to serious and unavoidable circumstances outside of your control (e.g. severe illness or unavoidable obligation) you may be able to apply for special consideration (SPC).

Applications for Special Consideration will be submitted via the SPC online tool normally no later than 5.00pm on the third working day after the submission/sitting date for the relevant assessment component.

Special needs

Sometimes students with a disability, a mental health or medical condition or significant carer responsibilities require reasonable adjustments to enable full access to and participation in education. Your special needs can be addressed by Swinburne's Disability Services, who can negotiate and distribute an 'Education Access Plan' that outlines recommendations for university teaching and examination staff. You must notify the University Disability Liaison Officer of your disability or condition within one week after the commencement of a unit of study to allow the University to make reasonable adjustments.

Review of marks

An independent marker reviews all fail grades for major assessment tasks. In addition, a review of assessment is undertaken if your final result is a marginal fail (45-49) or within 2 marks of a grade threshold.

If you are not satisfied with the result of an assessment you can ask the Unit Convenor to review the result. Your request must be made in writing within 10 working days of receiving the result. The Unit Convenor will review your result against the marking guide to determine if your result is appropriate.

If you are dissatisfied with the outcomes of the review you can lodge a formal complaint.

Feedback, complaints and suggestions

In the first instance you may discuss any issues with your Unit Convenor.

If you are dissatisfied with the outcome of the discussions with the Unit Convenor or would prefer not to deal with your Unit Convenor, then you can complete a feedback form.

Advocacy

Should you require assistance with any academic issues, University statutes, regulations, policies and procedures, you are advised to seek advice from an Independent Advocacy Officer at Swinburne Student Life. For an appointment, please call 03 9214 5445 or email advocacy@swin.edu.au

For more information, please see https://www.swinburne.edu.au/current-students/student-services-support/advocacy/