Course syllabus

Welcome to COS30049: Computing Technology Innovation Project

Duration	One teaching period
Contact hours	Recommended 12 hours of study per week
Pre-requisites	Nil
Credit points	12.5

Aim

This is a project-based unit where students collaborate in teams to develop innovative solutions for industry challenges. The primary focus of this project is to apply a range of IT techniques and analysis methods to effectively address these challenges. Throughout the projects, student teams will be supported by a designated staff member acting as a facilitator. The aim is to guide the teams in creating automatic tools or platforms, providing instructions that cater to diverse ICT backgrounds. The students will learn how to complete a real-world project from zero background, just like what industrial professionals are doing everyday in their companies.

Unit learning outcomes (ULOs)

ULO1: Apply knowledge of innovation fundamentals to analyse and understand cyber security threats/risks;
ULO2: Apply a systematic approach to develop solutions to cyber security challenges;
ULO3: Develop digital solutions that are more secure;
ULO4: Understand the ethical, legal and commercial constraints to cyber security solutions;
ULO5: Communicate within team members and stakeholders with proper project management capability and using appropriate verbal, written and technological approaches;
ULO6: Critically evaluate the literature to identify gaps in knowledge generating innovation concepts, and write professional cyber security reports.

Graduate attributes

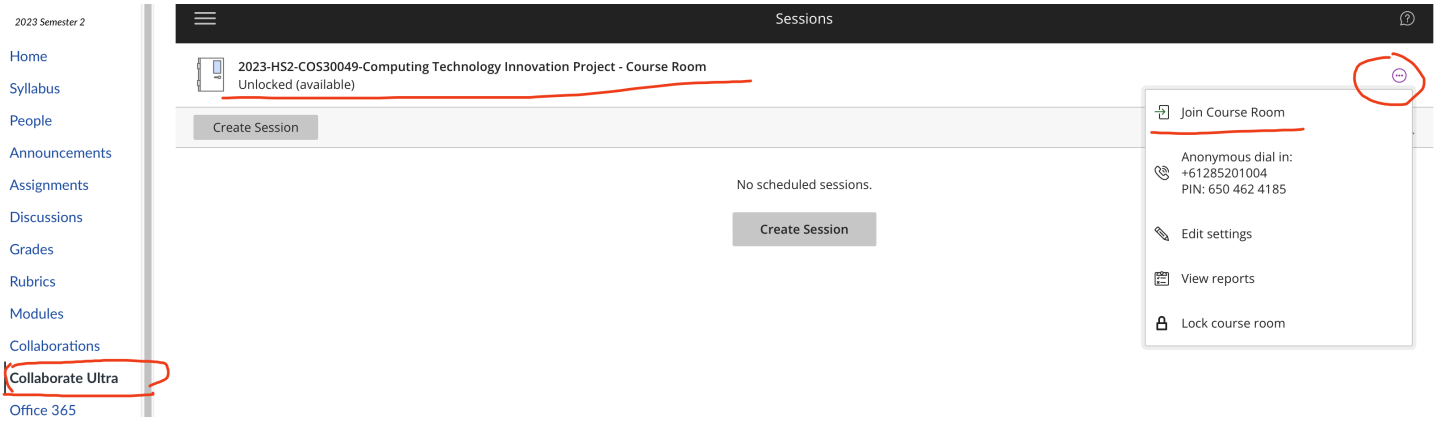
This unit may contribute to the development of the following Swinburne Graduate Attributes:

- GA1: Communication 1 - Verbal Communication.
- GA2: Communication 2 - Communicating using different media.
- GA3: Teamwork 1 - Collaboration and negotiation.
- GA4: Teamwork 2 - Teamwork roles and processes.
- GA5: Digital Literacies 1 - Information literacy.

- GA6: Digital Literacies 2 - Technical literacy.

Live Seminar

Here is the guideline to get access to the live seminar. We will use Collaborative Ultra.



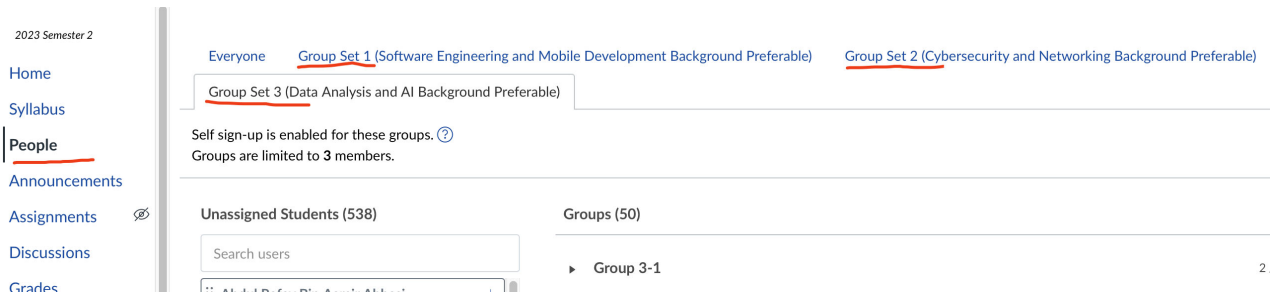
Team Setup

This unit is a large team-based course that brings together students with diverse backgrounds. To ensure an optimal learning experience, we have designed three distinct group sets for the students, each catering to specific preferences and expertise. They are as follows:

- **Group set 1** (Software Engineering and Mobile Development Background Preferable),
- **Group set 2** (Cybersecurity and Networking Background Preferable), and
- **Group set 3** (Data Analysis and AI Background Preferable).

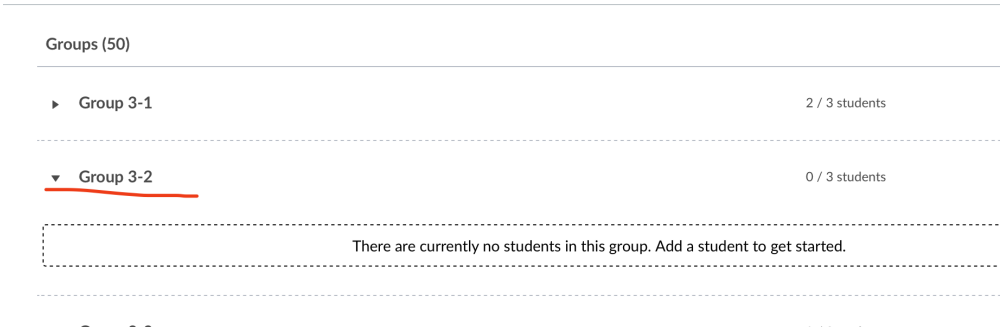
Every student is required to register for one group from a predefined set, with each group comprising **three** students. During the first week of this semester, students will have the opportunity to autonomously select the group they wish to join. However, if any student fails to join a group within this timeframe, we will step in and randomly assign them to a group during the weekend following the first week (Saturday and Sunday). To foster a cohesive team environment where each member is familiar with one another, we strongly encourage students to take the initiative to self-organize into teams of three and then join a group together. To facilitate this process, we have outlined the following steps:

Step 1: go to **People (https://swinburne.instructure.com/courses/56687/users)** section, and select a group set.



Step 2: To join a group from the list, simply select the one that best aligns with your preferences and click to confirm your choice. Feel free to switch between different groups until you find the right fit. However, please note that once you have submitted the first assignment, group changes will no

longer be allowed. Within each group, one student will be designated as the group leader, responsible for coordinating and leading the team's projects.



Content & Assignment

This year, we select web3 as the working platform to design/introduce real-world projects into this unit. It does not mean we take web3 technology as our major aim of the unit delivery. The students will learn how to complete a real-world project from zero background, just like what industrial professionals are doing everyday in their companies. There will be around **nine** different small projects tailored for students who may have different backgrounds. For each group set, the three consecutive projects are listed below:

- For group set 1, which prefers students that have software engineering background, we have
  - **Assignment 1-1**: Decentralised Trading Platform - Static Website (Front-end) (weight: 30%),
  - **Assignment 1-2**: Decentralised Trading Platform - Dynamic Website (Back-end) and Smart Contract Development (weight: 40%),
  - **Assignment 1-3**: Smart Contract Code Review and Illustration Report (weight: 30%).
- For group set 2, which prefers students that have cybersecurity background, we have
  - **Assignment 2-1**: Security Auditing Platform - Static Website (Front-end) (weight: 30%),
  - **Assignment 2-2**: Security Auditing Platform - Dynamic Website (Back-end integrated) and Application of Contract Audit Tools (weight: 40%),
  - **Assignment 2-3**: Security Case Study and Auditing Report (weight: 30%).
- For group set 3, which prefers students that have data analysis and AI background, we have
  - **Assignment 3-1**: Transaction Tracing Platform - Static Website (Front-end) (weight: 30%),
  - **Assignment 3-2**: Transaction Tracing Platform - Dynamic Website (Back-end integrated) (weight: 40%),
  - **Assignment 3-3**: Transaction Analysis and Tracing Report (weight: 30%).

By undertaking these projects, students will gain practical experience and develop a profound understanding of web3 technology, preparing them for real-world challenges in this dynamic field. The due dates for each group set are presented in the table below:

Assignment task	Time limit (+/- 10%)	Individual/team task	Weighting	Due date

Assignment 1	week2~4	Team work	30%	Due on Sunday Week 5: 23:59 04/01/2024.
Assignment 2	week5~9	Team work	40%	Due on Sunday Week 10: 23:59 24/03/2024.
Assignment 3	week10~12	Team work	30%	Due on Tuesday Week 13: 23:59 09/04/2024.

Minimum requirements to pass this unit of study

To pass this unit, you **must**:

(i) achieve an overall mark for the unit of 50% or more, and

(ii) complete each of the three projects to an acceptable standard (at least 40% of the each project).

A rubric will be used to determine if students have met the acceptable standard. Students do not successfully achieve hurdle requirements if one of the three projects is not completed.

Referencing

To avoid plagiarism, you are required to provide a reference whenever you include information from other sources in your work. You can check your assignments ahead of submission by using a program called Turnitin. The **Academic practice (https://studenthub.swinburneonline.edu.au/academic-practice)** page in the Student Hub has information on plagiarism, referencing and Turnitin.