

School of Engineering and Computer Science

Te Kura Mātai Pūkaha, Pūrورohiko



Prescription

This course addresses the concepts, techniques, and tools required for developing applications within software frameworks for mobile platforms. Topics include the concepts and principles underlying software frameworks, the design and implementation of client-server applications, principles of user experience design for frameworks, the design and implementation of client-server applications, principles of user experience design for mobile applications, and key concepts in reliability, privacy, security and safety critical systems. Practical work will involve the design, implementation and testing of a range of mobile applications.

Course learning objectives

Students who pass this course should be able to:

1. Construct software applications within large software frameworks.
2. Independently learn and use new software frameworks.
3. Design, implement, and test applications for a mobile platform.
4. Apply user experience principles to the design, implementation, and evaluation of user interfaces for mobile applications.
5. Articulate and apply the key principles of privacy, security and safety critical systems in the context of mobile applications.

Course content

2022: The course is primarily offered in-person, and there are components such as labs, tutorials, and marking sessions which require in-person attendance. There will be remote alternatives for all the components of the course, but these are only available to students studying from outside the Wellington region. The remote option for tests will use a Zoom-based system for online supervision of the tests.

Students taking this course remotely must have access to a computer with camera and microphone and a reliable high speed internet connection that will support real-time video plus audio connections and screen sharing. Students must be able to use Zoom; other communication applications may also be used. A mobile phone connection only is not considered sufficient. The computer must be adequate to support the programming required by the course: almost any modern windows, macintosh, or unix laptop or desktop computer will be sufficient, but an Android or IOS tablet will not.

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This course involves learning and using at least two different major frameworks used in software development for mobile platforms, writing reports on the mobile UX, and learning about and developing Internet of Things technologies. The course is internally assessed through a number of major assignments/projects that can be done either individually or in small groups.

Required Academic Background

We expect the students to be proficient in Java and medium size software development (SWEN 225 is a prerequisite) and to be proficient when working with and developing mobile applications (NWEN 243 is a prerequisite).

Withdrawal from Course

Withdrawal dates and process:

<https://www.wgtn.ac.nz/students/study/course-additions-withdrawals>

Lecturers

Dr Jennifer Ferreira (Coordinator)

jennifer.ferreira@vuw.ac.nz 04 463 6381

CO 230 Cotton Building (All Blocks), Gate 7, Kelburn Parade, Kelburn

Dr Alvin Valera

alvin.valera@vuw.ac.nz 04 463 5139

AM 418 Alan Macdiamid Building, Gate 7, Kelburn Parade, Kelburn

There will be a number of guest lecturers in this new course and all the material in those guest lectures is specifically designed to help you finish the course assessment (including the reflective reports). It is absolutely essential to treat these guest lectures as normal lectures in the course and attend as well as be very respectful of the guest speakers. You will be expected to refer to the material in the guest lectures in the relevant parts of your reflective reports.

Teaching Format

This course will be offered in-person and online. For students in Wellington, there will be a combination of in-person components and web/internet based resources. It will also be possible to take the course entirely online for those who cannot attend on campus, with all the components provided in-person also made available online.

There are going to be 2 lectures in most weeks as per the schedule and a lot of the lectures will be interactive as well as requiring the students to prepare for them by doing the relevant readings. It is essential to attend these lectures to make sufficient progress on this course. Most lectures will not have lecture slides provided and video recordings may or may not be made depending on whether the recording technology works or not.

Student feedback

Student feedback on University courses may be found at:

www.cad.vuw.ac.nz/feedback/feedback_display.php.

Dates (trimester, teaching & break dates)

- Teaching: 11 July 2022 - 14 October 2022
- Break: 22 August 2022 - 04 September 2022
- Study period: 17 October 2022 - 20 October 2022
- Exam period: 21 October 2022 - 12 November 2022

Class Times and Room Numbers

11 July 2022 - 21 August 2022

- **Tuesday** 13:10 - 14:00 – LT104, Hugh Mackenzie, Kelburn
- **Friday** 13:10 - 14:00 – LT104, Hugh Mackenzie, Kelburn

05 September 2022 - 16 October 2022

- **Tuesday** 13:10 - 14:00 – LT104, Hugh Mackenzie, Kelburn
- **Friday** 13:10 - 14:00 – LT104, Hugh Mackenzie, Kelburn

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Mandatory Course Requirements

There are no mandatory course requirements for this course.

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

Assessment

This assessment scheme has been updated for 2022.

There are five assessment items (listed below) and no other assessment in this course so you need to dedicate appropriate time to complete these assessment items on time and to a high standard as there will be NO EXAM.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
A1: Mobile User eXperience (UX) Design Report	End of W3	CLO: 3,4	20%
A2: App using Framework 1 Demo and Code	End of W7	CLO: 1,2,3	27%
A2: App Using Framework 1 Reflective Report	End of W7	CLO: 3,4,5	18%
A3: IoT App Demo and Code	End of W11	CLO: 1,2,3	23%
A3: IoT App Reflective Report	End of W11	CLO: 3,4,5	12%

Penalties

Any assignment submitted up to 24 hours after the deadline will be penalised by 20% of your marks, and any assignment submitted between 24 and 48 hours after the deadline will be penalised by 40% of your marks. Any assignment submitted 48 hours or more after the deadline will not be marked and will get 0 marks.

3 LATE DAYS POLICY. Each student will have 3 "late days" which you may choose to use for any assessment item during the course. There will be no penalty applied for these late days. You do not need to apply for these - any late days you have left will be automatically applied to assignments that you submit late.

NB! The late days are administered by ECS assessment system and any day (including Saturday or Sunday) counts as a single day.

Extensions

The course outline section on Penalties applies. The only way to obtain an additional extension is to present a valid medical certificate or an equivalent supporting documentation to the course coordinator via email and obtain a specific extension. This has to be obtained **before** the deadline (unless unpracticable due to medical reason). Without medical certificate and/or approved extension the penalties policy applies (including "three late days") but beyond that you may receive 0 marks and are likely to fail the course as each assignment is worth very significant percentage and there is no exam.

Submission & Return

All work is submitted through the ECS submission system, accessible through the course web pages. Marks and comments will be returned through the ECS marking system, also available through the course web pages.

Marking Criteria

Each assessment item will follow a more detailed marking guide as presented in the relevant assignment page.

Group Work

Students can choose to work in a group for A2 or A3 but not both. This means a group mark will be awarded for either A2: Demo and Code or A3: Demo and Code.

Required Equipment

We expect most of the development to be done either in the labs or on your own laptops requiring basic editor for JavaScript or TypeScript of your choice and a full node.js installation with both relevant npm packages for the frameworks used installed. The deployment to the actual mobile phones is not required but you are welcome to pursue it in your own time.

Workload

Although the workload will vary a little bit from week to week, you should expect to spend approximately 10–12 hours per week on the course to give a total of 150 hours study time for the course. Please note that this course is internally assessed and the assignments are worth ALL of your marks and are available straight away as the course starts. We expect you to start working in week 1 with the first deadline in the middle of week 2! It is unlikely that you can pass this paper if you only work in the weeks that the major assignments are due and there is NO EXAM to catch up.

Teaching Plan

See: https://ecs.wgtn.ac.nz/Courses/SWEN325_2022T2/LectureSchedule

Communication of Additional Information

All online material for this course can be accessed at https://ecs.wgtn.ac.nz/Courses/SWEN325_2022T2/ and any important announcements will be communicated via the class mailing list once the course commences.

Links to General Course Information

- Academic Integrity and Plagiarism: <https://www.wgtn.ac.nz/students/study/exams/integrity-plagiarism>
- Academic Progress: <https://www.wgtn.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <https://www.wgtn.ac.nz/students/study/dates>
- Grades: <https://www.wgtn.ac.nz/students/study/progress/grades>
- Special passes: Refer to the Assessment Handbook, at <https://www.wgtn.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>
- Statutes and policies, e.g. Student Conduct Statute: <https://www.wgtn.ac.nz/about/governance/strategy>
- Student support: <https://www.wgtn.ac.nz/students/support>
- Students with disabilities: https://www.wgtn.ac.nz/st_services/disability/
- Student Charter: <https://www.wgtn.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <https://www.wgtn.ac.nz/study/apply-enroll/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>
- University structure: <https://www.wgtn.ac.nz/about/governance/structure>
- VUWSA: <http://www.vuwsa.org.nz>

Offering CRN: [30041](#)

Points: 15

Prerequisites: NWEN 243, SWEN 225 (or 222)

Duration: 11 July 2022 - 13 November 2022

Starts: Trimester 2

Campus: Kelburn