

SWEN222 (2017) - Software Design

Prescription

This course develops a deeper understanding of object-oriented design. In particular, students will be expected to design and implement several large programs from scratch by working together in groups. The focus of this course is programming techniques at the macro scale.

Course learning objectives

Students who pass this course will be able to:

1. Demonstrate competence in the practical art of software engineering through the design and development of moderately-sized Java programs. 3(f)
2. Appreciate a range of simple techniques for assessing the quality of a software design, and apply them to Java programs. 3(b)
3. Appreciate the limitations of different solutions when designing Java programs, particularly with respect to Design Patterns and Design-by-Contract. 3(e)
4. Work co-operatively in a team to produce a moderately-sized software project in Java. 2(a)
5. Recognise when further information is needed during the design and development of a software project, and be able to find it as necessary by considering all pertinent sources of information. 3(d)
6. Communicate effectively on the design and implementation of a software project by writing design documentation and related reports, and by giving (brief) oral presentations. 2(b)

Course content

This course looks at the problem of designing object-oriented software. The Java Programming Language is used as a vehicle for this, but the underlying principles apply to most modern object-oriented languages. The course will focus on a range of techniques for designing and developing large-scale systems, including design patterns and design-by contract.

The prerequisite for SWEN222 is SWEN221. If you have not passed this course recently, you should contact the Course Coordinator as soon as possible.

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers

Marco Servetto (Coordinator)

marco.servetto@vuw.ac.nz 04 4635820

258 Cotton, Kelburn

Teaching Format

There will be three lectures per week. The Thursday lecture will generally be run in a tutorial format with revision of material and more interaction. .

Dates (trimester, teaching & break dates)

- Teaching: 17 July 2017 - 20 October 2017
- Break: 28 August 2017 - 08 September 2017
- Study period: 24 October 2017 - 26 October 2017
- Exam period: 27 October 2017 - 18 November 2017

Class Times and Room Numbers

17 July 2017 - 27 August 2017

- **Tuesday** 11:00 - 11:50 – LT101, Maclaurin, Kelburn
- **Thursday** 11:00 - 11:50 – LT103, Maclaurin, Kelburn
- **Friday** 11:00 - 11:50 – LT101, Maclaurin, Kelburn

11 September 2017 - 22 October 2017

- **Tuesday** 11:00 - 11:50 – LT101, Maclaurin, Kelburn
- **Thursday** 11:00 - 11:50 – LT103, Maclaurin, Kelburn
- **Friday** 11:00 - 11:50 – LT101, Maclaurin, Kelburn

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Recommended

"Object-Oriented Design & Patterns",
Cay Horstmann, Second Edition, Wiley
(In the library)

Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- This course is focused on practical work and you must demonstrate adequate mastery of this to pass the course. Therefore, it is a mandatory requirement that you make a reasonable attempt on the group project (D or higher mark). You are also required to attend (with mark) at least 8 of the 10 weekly two hour lab sessions and achieve at least a 'D' grade in the final exam.

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 course will be internally and externally assessed through the following:

- Assignments
- Group Project
- Labs
- Final Examination

Assignment 1	CLO: 1,5,6	10%
Assignment 2	CLO: 1,2,5,6	10%
Group project	CLO: 1,2,3,4,6	20%
Labs	CLO: 1,2,3	10%
Final Examination (2 hours)	CLO: 2,3	50%

Penalties

Each piece of work should be handed in on the dates and times specified in the Schedule. Submission should be made via the online submission system (found on the course homepage). **Unless prior agreement with the course coordinator has been made at least 24 hours in advance, the policy on late submissions is as follows:**

- **Late work will be penalised 20% per day after the deadline.** This means after 5 days zero marks will be awarded. In this case, the work should still be submitted in order to pass the mandatory requirements. However, submissions will not be accepted once any model answers have been given out.
- **Each student has three "late days".** You may choose to use these for any assignment(s) during the course. No penalty will be applied for these late days. You do not need to apply for them - any late days you have left will be automatically applied to assignments that you submit late.

Marking Criteria

Group Work

The Group project will be worth 20% in total.
Group mark is 15%, while 5% is an individual mark.

Workload

In order to maintain satisfactory progress in this course, you should plan to spend an average of at least 10 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures : 2 hours
- Tutorial / Reading: 1 hour
- Labs: 2 hours
- Assignments: 5 hours

Teaching Plan

Communication of Additional Information

The main means of communication outside of lectures will be the SWEN 222 web area at http://ecs.victoria.ac.nz/Courses/SWEN222_2017T2/. There you will find, among other things, this document, the lecture schedule and assignment handouts, and the SWEN 222 Forum. The forum is a web-based bulletin board system. Questions and comments can be posted to the forum, and staff will read these posts and frequently respond to them.

Links to General Course Information

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

Offering CRN: [18319](#)

Points: 15

Prerequisites: SWEN 221;

Restrictions: COMP 205, ENGR 202

Duration: 17 July 2017 - 19 November 2017

Starts: Trimester 2

Campus: Kelburn