

SWEN424 (2018) - Model-Driven Development

Prescription

An introduction to model-driven development - the modern approach to large scale software system development along with an introduction to the core concepts of model-driven development, the course will address the foundations and principles for supporting infrastructures. This includes an in-depth discussion of 'metamodelling' and a critique of existing modelling techniques. Students will get hands-on experience with using a meta-case tool.

Course learning objectives

Students who pass this course should be able to:

1. Have an understanding of model-driven development
2. Understand the advantages and disadvantages of domain-specific modelling approaches.
3. Understand the potential and implementation challenges arising from description hierarchies (meta-level hierarchies).
4. Differentiate between super and meta classes
5. To use metamodelling as a language definition tool and as a tool for modeling domains.
6. Use the metamodeling principles discussed in a number of contexts (e.g. XML, UML Definition, Semantic Web).

Course content

Model-driven development is a vital ingredient of modern software engineering. Along with an introduction to the concepts of model-driven development and domain-specific modelling, SWEN 424 addresses the foundations and principles for supporting infrastructures. This includes an in-depth discussion of 'metamodelling' and a critique of existing modelling techniques. Students will get hands-on experience with using a meta-case tool.

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers


Thomas Kuehne (Coordinator)

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233 Cotton, Kelburn

Teaching Format

During the trimester there will be two lectures per week and other slots will be by announcement only.

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: 05 March 2018 - 08 June 2018
- Break: 23 April 2018 - 27 April 2018
- Study period: 11 June 2018 - 14 June 2018
- Exam period: 15 June 2018 - 04 July 2018

Class Times and Room Numbers

05 March 2018 - 25 March 2018

- **Friday** 13:10 - 14:00 – 204, New Kirk, Kelburn

05 March 2018 - 01 April 2018

- **Monday** 13:10 - 14:00 – 204, New Kirk, Kelburn
- **Wednesday** 13:10 - 14:00 – 204, New Kirk, Kelburn

02 April 2018 - 22 April 2018

- **Friday** 13:10 - 14:00 – 204, New Kirk, Kelburn

09 April 2018 - 22 April 2018

- **Monday** 13:10 - 14:00 – 204, New Kirk, Kelburn
- **Wednesday** 13:10 - 14:00 – 204, New Kirk, Kelburn

30 April 2018 - 10 June 2018

- **Monday** 13:10 - 14:00 – 204, New Kirk, Kelburn
- **Wednesday** 13:10 - 14:00 – 204, New Kirk, Kelburn
- **Friday** 13:10 - 14:00 – 204, New Kirk, Kelburn

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Recommended

There is no suitable course textbook available yet, but students with a deeper interest in the subject may find the following book useful (This text is only loosely connected to the course. We will cover only some parts of the text and a lot of material covered in lectures is not in the book):

- Steven Kelly and Juha-Pekka Tolvanen, *Domain-Specific Modeling: Enabling Full Code Generation*, Wiley, 2008.

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

Project (70% report (group), 15% slides (group), 15% presentation (individual))	Week 10 (18/5/2018)	CLO: 2,4,5,6	35%
Examination (2 hours)		CLO: 1,2,3,4,5,6	65%

Penalties

Late assignments will be accepted up to one week after the deadline. After that they will only be accepted in exceptional circumstances and after prior consultation with the course coordinator. There is no penalty for a late submission within the one week grace period. Submissions received after the grace period attract a penalty of an E (0%) grade for the respective component.

Extensions

Late assignments will be accepted up to one week after the deadline. After that they will only be accepted in exceptional personal circumstances and after prior consultation with the course coordinator. Documentation (eg, medical certificate) may be required.

Marking Criteria

Good to excellent reports will show evidence of:

- structured content
- use of media, such as screenshots
- concise style, yet comprehensive information
- lucid explanation of the project idea
- presentation and explanation of project artefacts
- non-trivial level of ambition regarding the meaning (utility) of the models.
- critical evaluation (positive and negative points) of the tool(s) used
- appropriate use and citation of sources

Group Work

You will work on a project in a group.

Workload

In order to maintain satisfactory progress in SWEN 424, students should plan to spend an average of 10 hours per week on this paper. An approximate breakdown for these hours is as follows:

Lectures - 2 hours

Reading, revision and preparation - 2 hours

Project - 6 hours

Teaching Plan

The following sets of lecture notes will be handed out in class (each typically spanning multiple lectures):

- Introduction
- Motivation
- Types and Instances
- Abstraction
- Linguistic Classification
- Metamodeling
- Transformations
- Aligning Hierarchies
- Deep Characterisation
- Multi-Level Modeling Example
- Deep Java
- OMG Critique

Communication of Additional Information

All online material for this course can be accessed at https://ecs.victoria.ac.nz/Courses/SWEN424_2018T1/

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: [18664](#)

Points: 15

Prerequisites: 30 300-level pts from (COMP, NWEN, SWEN)

Duration: 05 March 2018 - 04 July 2018

Starts: Trimester 1

Campus: Kelburn