Schedule and Reading Instructions
Modelica Course at Linköping University
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Schedule

Day1: Wednesday, Oct 13, 9.15-17.00  (hint: Spend evening reading the course book)
Day2: Thursday, Oct 14, 10.15-17.00  (hint: Spend morning reading the course book)
Day3: Wednesday, October 20, 9.15-17
Day4: Wednesday, October 27, 9.15-17
Day5: Monday, Nov 8, .9.15-17

Approximately 28 hours including hands-on exercises.

Day1:
Lecture: Introduction to Modeling and Simulation with Modelica and OpenModelica
  - OpenModelica OMNotebook usage
  - Introduction to textual modeling
  - Demo+Exercise: OMNotebook and DrModelica
  - Demo+short exercise: Graphic modeling with simForge
Lecture+Exercises: classes and inheritance
  Exercise01-classes-simple-textual.onb
Lecture+Exercises: Component connectors and connections, graphical modeling
  Exercise02-graphical-modeling.onb

Day2:
Lecture: Equations
  Exercise03-classes-textual-circuit.onb
Lecture: Algorithms and functions
  Exercise04-equations-algorithms-functions.onb
Lecture: Modelica Packages
Lecture: Modelica Libraries

Day3:
Lecture: Hybrid Systems
Day4:
Lecture+Exercises: Building a simple Modelica library.
A whole day will be devoted to designing and building a simple modelica library from scratch, primarily using the graphical user interface.

Day5:
Lecture+Exercises:
- Introduction to the OpenModelica Eclipse plugin
- Simple simulation exercise using the Eclipse plugin.
Lecture+Exercises:
Introduction to MetaModelica
- Functional programming in MetaModelica
- Model transformations and symbolic programming
- Simple model transformation exercise in MetaModelica.
Lectures:
Introduction to the OpenModelica compiler
- Structure, information about modules, etc
- The model manipulation and information retrieval API.
- Corba connection to OMC
Advanced OpenModelica compiler development topics
- How to adapt code generator to specific needs,
- How to access the flat Modelica intermediate form,
- Programming AST transformations in the compiler
- How to add simple functionality to the compiler
Reading Instructions

The following are reading instructions for the course book Principles of Object Oriented Modeling and Simulation with Modelica 2.1.

You need to read this well enough to be able to sign a paper where you promise that you have read all the included at a level to understand approximately 95% of the included material.

There will be some sampled oral examinations to check this.

Included in the course:

Chapter 1, whole chapter.
Chapter 2, whole chapter.
Chapter 3: Sec 3.1 - 3.13.1, 3.13.3 - 3.14.7
Chapter 4, whole chapter.
Chapter 5: 5.1 - 5.4.0; 5.4.3 - 5.7.2; 5.8
Chapter 6: 6.1 - 6.8.0;
Chapter 7: 7.1 - 7.2.2
Chapter 8: 8.1 - 8.4.1.3
Chapter 9: 9.1 - 9.3.2.6
Chapter 10: whole chapter.
Chapter 11: not included.
Chapter 12: whole chapter.
Chapter 13: 13.1 - 13.2.5.5; 13.2.5.7 - 13.2.6.5; 13.3.0 - 13.3.4; 13.4.1; 13.5
Chapter 15: 15.1.0; 15.4.1; 15.5; 15.6.0-15.6.2; 15.7; 15.10.2-15.10.3
Chapter 17: 17.1.0, 17.1.4, 17.1.5, 17.1.6,
Chapter 18.1, 18.2.0, 18.2.1, 18.2.1.1

The following are reading instructions for included parts of the “Modelica Meta-Programming and Symbolic Transformations - MetaModelica programming guide”:

Chapter 1: whole chapter.
Chapter 2: Sec 2.0, 2.1, 2.2
Chapter 3: Sec 3.0, 3.1.5, 3.3

(We will have selected exercises, partly from the Appendix of the MetaModelica programming guide)