INF223, Spring 2014
Category Theory and Diagrammatic Modelling

— Course Description and Pensum —

Category Theory is a mathematical language and tool providing an appropriate basis to describe and to reason about concepts, situations, and constructions involving complex structures and their relationships.

Three years ago I started to rearrange the course towards applications in Diagrammatic Modelling especially in Software Engineering. I started also to produce a corresponding script. Unfortunately, there was not time enough to complete the script. So, this year I'll work further on the script and make it available step by step.

In the first part of the course I'll give a very basic introduction into Category Theory.

In the second, more applied part, I'll discuss the formalization of (diagrammatic) specification techniques like UML class diagrams, ER diagrams, and database schemata by means of the so-called "Diagram Predicate Framework". If you are interested you may have a look at the web page of our research project:

http://dpf.hib.no/

My intention is to discussed and to formalize, at the end of the course, practical topic like metamodeling, model reduction, model merging, and model transformation.

— Pensum —

The course is not based on a book but I'll produce, during the semester, a script. If necessary I'll provide further papers, especially concerning the second, more practical part.

On the course page you find a version of the script from April last year, in case, you want to have a look.