# FDA015 Object-Oriented Languages for Dynamic Systems (ECSEL)

#### **Lectures:**

24 h.

### **Recommended** for

Students in ENSYM, SCORE, STEM, interested in software for modeling and simulation of dynamic systems.

#### The course was last given:

Fall 2001.

## Goals

To give an overview of modern equation-based object oriented modeling languages, with emphasis on the new language Modelica, and how to model complex dynamic systems.

## Prerequisites

General background for type 3 courses.(Advanced ECSEL course).

## Organization

Lectures and exercises/mini-project.

#### Contents

What is an object oriented modelling language? The concepts of model, simulation, simulation experiment. Different forms of ordinary differential equation systems. Object model. Connection structure. Units. Type system and type checking. Connection of subsystems. Integration of discrete and continuous system modelling. Examples of realistic application models, e.g. robots, airplanes etc. Compilation techniques for modelling languages.

## Literature

Articles and book draft on Modelica.

## Teachers

Peter Fritzson, Torkel Glad.

**Examiner** Peter Fritzson.

Schedule

Fall 2002.

**Examination** Exercises and mini project.

Credit

3 credits.