



## HÖGSKOLAN I GÄVLE

### Simulation and Optimisation for Building Environment 7.5 cr

*Simulation and Optimisation for Building Environment 7,5 hp*

Set by Faculty of Engineering and Sustainable Development

**Version**

**Set at**

**Valid from**

3/15/13

**HT2011**

<b>Level</b>	A1F
<b>Education level</b>	Second cycle
<b>Course identifier</b>	ME549D
<b>Credits</b>	7.5 cr
<b>Main field of study</b>	Energy Systems
<b>Subject group</b>	Energy Technology
<b>Disciplinary domain</b>	Technology 100.0 %

**Learning outcomes**

The aim of the course is to understand and use simulation tools for building energy systems and indoor environment. Environmental and economical impacts of the analysed building energy systems will be covered.

After completion of the course the student shall be able to

1. use a general proposed simulation and optimisation programme and models for building energy systems analysis
2. state the principal details in the used computer programs
3. state limitations and prerequisites when using the programs
4. analyse the result from the programs results- and sensitivity analyses
5. design resource-efficient building energy systems.

**Course content**

Simulation and optimization programs for building energy system analysis

Building energy analysis

Identification of possible changes in the energy system

Calculation of the appropriate measures and suggestions for what should be implemented

<b>Teaching</b>	The course is given in the form of lectures, tutorials and seminars.		
<b>Prerequisites</b>	English language proficiency equivalent to (the Swedish upper secondary school) English course 6/B. Environmental Assessment of Buildings 7.5cr, Building Energy Systems D 7.5cr and Sustainable Energy Systems C 7.5cr or equivalent documented thereof.		
<b>Examination</b>	Projects		
<b>Grade</b>	A, B, C, D, E, Fx, F		
<b>Limitations</b>	-		
<b>Other regulations</b>	-		
<b>Sustainable environment</b>	The majority of the course content deals with sustainable development..		
<b>Module</b>	0010 Project	7.5 cr	Grade: AF