HÖGSKOLAN I GÄVLE

Energy Resources 7.5 cr

Energiresurser 7,5 hp

Set by Faculty of Engineering and Sustainable Development

Version	**Set at**	**Valid from**
	11/2/15	**VT2016**

Level	G1N
Education level	First cycle
Course identifier	ETG003
Credits	7.5 cr
Main field of study	Energy Systems
Subject group	Energy Technology
Disciplinary domain	Technology 100.0 %

Learning outcomes

The general aim of the course is to increase the skills and understanding of energy system analysis for those who will work in the area.
After completion of the course, the student shall be able to
1. present how energy raw materials are transformed into electric energy and heat
2. present different renewable energy types, their possibilities and problems
3. describe a general account of electricity production and the electricity market
4. describe the structure of a district heating system, its theory, technology and function.

Course content

Production plants such as combined power and heating plants
District heating systems, distribution, different heat transfer media and pipe systems, and subscriber installations
Various types of renewable energy, such as solar energy, wind energy, biogas, biofuels and their system and environmental aspects
External costs, policy instruments, the resource concept.

Teaching

Lectures, projects, seminars and study visits

Prerequisites

Introduction to Energy Systems and Sustainable Energy Engineering 7.5 credits and Basic Fluid Mechanics, 7.5 credits, or equivalent

Examination	Written examination, project work and an assignment
Grade	A, B, C, D, E, Fx, F
Other regulations	Criteria for final grades are announced by the co-ordinator or examiner at the start of the course
Sustainable environment	The majority of the course content deals with sustainable development..

Module

0010	Written examination	3.5 cr	Grade: AF
0020	Project work	3 cr	Grade: UG
0030	Assignment, District Heating	1 cr	Grade: UG