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**
	12/15/21	**HT2022**

Level	G1F
Education level	First cycle
Course identifier	ETG314
Credits	7.5 cr
Main field of study	Energy Systems
Subject group	Energy Technology
Disciplinary domain	Technology 100.0 %

Learning outcomes

After completing the course, the student should be able to

Knowledge and understanding
1. explain how the conversion of energy from rawmaterials into electrical energy and heat works
2. describe different types of renewable energy, their possibilities and problems
3. describe an overall picture of electricity production and the electricity market
4. describe the structure of a district heating network, its theory, technology and function

Competence and Skills
5. use tools for calculating solar electricity production
6. dimensioning and optimization of solarcell systems
7. plan and with adequate methods carry out a project work within given time frames
8. show ability for teamwork and collaboration in groups with different composition
9. demonstrate the ability to present a project work in writing and orally and discuss information, problems and solutions in dialogue with others.

Course content

Combined heat and power (CHP) plant, district heating system, distribution, various heat carriers and pipe systems, subscriber facility

Plagiarism is a form of cheating that involves imitating or copying someone else's work, such as a text, an image, or a table, and then present this as your own or without providing any reference. Self-plagiarism is also considered cheating, that is, using one's own previously submitted or published work without providing any reference.

	Different types of renewable energy sources; solar energy, wind energy, biogas, biofuels and their system and environmental aspects Optimization and simulation of solar cell systems with the help of calculation programs
Teaching	Lectures, seminars, project work, and field trip
Prerequisites	Introduction to Energy Systems 7.5 credits and Fundamentals in Fluid Mechanics 7.5 credits, or equivalent
Examination	Written examination and project work 0010 Written examination 5.5 credits examines Learning outcomes 1-4, 6, grades A-F 0020 Project Work 2 credits examines Learning outcomes 5, 7-10, grades Pass, Fail
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	5.5 cr	Grade: AF
0020	Project work	2 cr	Grade: UG

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