



HÖGSKOLAN I GÄVLE

Applied Thermodynamics 7.5 cr

Tillämpad termodynamik 7,5 hp

Set by Faculty of Engineering and Sustainable Development

Version

Set at

Valid from

3/7/14

HT2014

Level	G1F
Education level	First cycle
Course identifier	ETG301
Credits	7.5 cr
Main field of study	Energy Systems
Subject group	Energy Technology
Disciplinary domain	Technology 100.0 %

Learning outcomes

After completion of the course the student shall be able to

1. describe and explain the principles of different conventional heat and power generation methods
2. analyse conventional heat and power generation methods thermodynamically
3. compare different power generation alternatives and choose the most suitable at given conditions
4. describe the main components in a power plant
5. describe, explain and analyse heat pump and refrigeration systems and its components.

Course content

Steam power basics
Advanced steam power cycles
Combined heat and power plant
Boilers and combustion
Gas turbine basics
Advanced gas turbine systems
Combined cycles
Combustion engines
Vapor compression refrigeration and heat pump systems
Absorption cooling systems

Teaching	Lectures and exercises		
Prerequisites	Fundamentals in Fluid Mechanics 7.5 cr, Fundamentals in Thermodynamics 7.5 cr, Linear Algebra 7.5 cr, Calculus in one Variable 7.5 cr, or equivalent.		
Examination	Written examination		
Grade	A, B, C, D, E, Fx, F		
Other regulations	Degree Criteria for final grade will be given by examiner or course responsible latest at the beginning of the course.		
Sustainable environment	The majority of the course content deals with sustainable development..		
Module	0010 Written examination	7.5 cr	Grade: AF