SYLLABUS FOR

# Exergy

7.5 ECTS

## CODE

TER713

## APPROVAL

Approved 2008-08-28 by The Faculty Board at Gotland University, revised 2010-xx-xx. Valid as from spring term 2011.

## SUBJECT AND LEVEL

Energy Engineering advanced level A1N.

## LEARNING OUTCOMES

After completion the student should be able to:

- Apply the exergy concept to real systems.
- Describe sustainable development from an exergy point of view.

## CONTENT

*Unit 1. Exergy Fundamentals, 2.5 ECTS:* Fundamental energy and exergy concepts, Thermostatics and thermodynamics, Cyclic processes, Heat transfer and Chemical processes.

*Unit 2. Exergy Calculations, 2 ECTS:* Exergy studies of different systems and process.

*Unit 3. Individual Project Report, 3 ECTS:* Exergy studies of real or realistic systems.

## ENTRANCE REQUIREMENTS

At least 60 ECTS in engineering and/or natural science, or equivalent and good ability in mathematics and English or at least Mathematics C and English B at Swedish high school level.

## TYPE OF TEACHING

Internet based with compulsory assignments, discussions and report.

## EXAMINATION AND GRADES

Units 1 and 2 are examined by assignments and unit 3 by a report. Grades on units and course are Pass with distinction (VG), Pass (G), and Fail (U). The grade Pass requires Pass or higher on all units. The grade Pass with distinction requires in addition Pass with distinction on unit 2 and 3.

## LITERATURE

Gong, M. & Wall, G. *On Exergy and Sustainable Development, Part II: Indicators and Methods* (2001) pp. 17, http://www.exergy.se/ftp/gw2exij.pdf

Wall, G. *Exergetics* (2009) pp. 151, http://www.exergy.se/ftp/exergetics.pdf.

Wall, G. & Gong, M. *On Exergy and Sustainable Development, Part I: Conditions and Concepts* (2001) pp. 18, http://www.exergy.se/ftp/wg1exij.pdf

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