



## Course syllabus

Faculty of Technology

Department of Built Environment and Energy Technology

4BT009 Bedömning av biomasseresurser, 7,5 högskolepoäng

Assessment of biomass resources (for energy), 7.5 credits

### **Main field of study**

Bioenergy Technology

### **Subject Group**

Bio Engineering

### **Level of classification**

Second Level

### **Progression**

A1N

### **Date of Ratification**

Approved by Faculty of Technology 2014-10-02

The course syllabus is valid from autumn semester 2015

### **Prerequisites**

B.Sc. exam - at least 180 ECTS - in engineering or in natural sciences, or equivalent and English B or equivalent.

## Objectives

After the course, the student shall be capable to read, understand and critically assess not only the assumptions and presumptions but also the conclusions in qualified reports concerning assessments about biomass resources for energy production.

## Content

The course contains:

- Biomass as such - What makes biomass become a biofuel?
- Biomasses' content of enthalpy, anergy, exergy and emergy
- Ranking of biomass with respect to economy, enthalpy, anergy, exergy and emergy
- How the end-user demands influence the ranking
- Methods to assess the total biomass resources
- Methods to extract useful energy from biomass

## Type of Instruction

The course is taught via lectures and individual studies.

During the course, the student shall produce two reports.

## Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow

in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

### Course Evaluation

A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

### Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 4BT001 Assessment of biomass resources, 7,5 hec

### Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Some course elements may entail costs defrayed by the course participant.

On request, a Swedish University course certificate will be awarded upon successful completion of the course.

Upon request, a Swedish University degree will be issued upon successful completion of the full demands for that degree.

### Required Reading and Additional Study Material

#### **Books**

Ralph E.H. Sims

*The Brilliance of Bioenergy*

James & James 2002, ISBN 1 902916 28, 307 p

Frank Rosillo-Calle et al

*The Biomass assessment handbook*

Earthscan 2007, ISBN 1 84407 285 1, excerpts appr 120 pages

#### **Reports**

Reports from the CHRISGAS project, approximately 150 pages