Linnæus University

Jnr: 2014/1454-3.1.2

Course syllabus

Faculty of Technology
Department of Built Environment and Energy Technology

1BT010 Biobränslekunskap, 7,5 högskolepoäng
Fuel science, 7.5 credits

Main field of study
Energy Technology

Subject Group
Energy Technology

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved by Faculty of Technology 2014-06-03
The course syllabus is valid from spring semester 2015

Prerequisites
General entry requirements and Chemistry A, Mathematics D, Physics B or Chemistry 1, Mathematics 3c, Physics 2 (Field-specific entry requirements 8/A8).

Objectives
After completing the course the student is expected to be able to:

- Exemplify and compare, from an environmental and sustainability perspective, different routes to produce and deliver energy services and/or –carriers.
- Exemplify and compare, from a societal and/or infrastructural perspective, different routes to produce and deliver energy services and/or –carriers.
- Describe and name energy services demanded not only in the rich countries but also elsewhere and explain which thermodynamical and other demands are posed to the supply system by these energy services.
- Describe and name techniques for the utilisation of biomass as an energy resource but also as a resource for other types of production such as in bio-refineries or similar.
- Estimate, based on the demand for a specific energy service, which energy sources and –carriers are best suited for the system, based on their thermodynamic and other properties.
- Present, compare and motivate, in writing as well as orally, analysis's of different routes to produce, deliver and/or utilise energy services and/or -carriers

Content
The course comprises the following elements related to biofuels:

- Supply/demand
- History
- Logistics
- Upgrading
- Combustion
- Environmental aspects
- Characterization
- Properties

Type of Instruction
Lectures, guest lectures, laboratory work, study visits and individual assignments. Information on compulsory elements is given at the course start.

Examination
The course is assessed with the grades U,3,4 or 5.
The assessment of student performances usually takes place during special examination periods and take the form of
project work, laboratory work, written assignments and written examinations. The examination are both written and oral.

In order to pass, the objectives of the course should be achieved.

Course Evaluation
A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed.

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: The course entirely overlaps BTA902/BT9011.
Overlaps to 75% rate 1BT017 "Bioenergy Technology" (old syllabus code 1BT009).

Other
Some elements of the course may involve costs that are paid by the student.

Anglophone students primarily recommended to instead choose the course "Bioenergy Technology".
Students who have successfully completed the course at his own request, course certificate.

Required Reading and Additional Study Material
Required literature
Material supplied by the department, approx. 50 pp
The Bioenergy System Planners Handbook, BISYPLAN web-based handbook, 2012, 350 sidor http://bisyplan.bioenarea.eu/

Reference Literature
Annual energy statistics ”Energiläget”
http://webbshop.cm.se/System/TemplateNavigate.aspx?p=Energimyndigheten&nc=Default&view=default&cat=/Broschyrer