Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Syllabus

TN0202.1 Upgraded biofuels, 7.5 credits

Förädlade biobränslen

The course is given as course independent of study programme

Syllabus discontinued 7 December 2010

Version 1 in Slukurs. Corresponds to version 1 in Ladok

Syllabus approved

6 December 2006

The version applies to students admitted from spring 2008 to spring 2008

The version is not a module version

Subjects

Technology

Education cycle

First cycle

Modules

Title	Code	Credits
Single module	0101	7.5

Advanced study in the main field

Grading scale

Pass / Failed

The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

Swedish

Prior knowledge

The equivalent of Basic Bioenergy, 7,5 ECTS.

Objectives

The aim of the course is to give general and broad knowledge about upgraded biofuels including different raw materials, processes and fields of application.
After passing the course the students are supposed to be able to:
- basic chemical concepts of importance within bioenergy.
- describe methods for characterization and quality judgements of raw materials and upgraded biofuels.
- account for production processes for different types of upgraded biofuels.
- specify demands for biofuels in various fields of application (i.e. district heating, electricity production and engine fuels.

Content

In upgrading of biofuels a certain level of knowledge in chemistry and chemical concepts is needed and therefore the course starts with basic chemistry with relevance within bioenergy. The course will then consider quality parameters of raw materials with respect to various biofuels and how these quality parameters are measured. In addition, different production processes for solid, liquid and gaseous biofuels will be discussed. Finally, quality parameters for biofuels in processes for district heating, electricity production and engine fuels will be considered.

Implementation

The education embrace lectures, individual reading and exercises. Since the course is a distance course the main part of the communication will proceed through the course web site.
Lectures, ca 20 hours
Exercises ca 80 hours
Study tour ca 10 hours
Individual reading ca 80 hours
In total 190 hours

Examination

Requirements for examination

The examination is performed by written examination and written exercises.

A passed course requires passed written examination, passed written exercises and participation in at least 75 % of the meetings.

- If the student fails a test, the examiner may give the student a supplementary assignment, provided this is possible and there is reason to do so.
- If the student has been granted special educational support because of a disability, the examiner has the right to offer the student an adapted test, or provide an alternative assessment.
- If changes are made to this course syllabus, or if the course is closed, SLU shall decide on transitional rules for examination of students admitted under this syllabus but who have not yet passed the course.
- For the examination of a degree project (independent project), the examiner may also allow the student to add supplemental information after the deadline. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Additional information

The course is given as a distance education course at 1/4 speed and is suitable as a further education course. Four meetings in Umeå during the course are planned (principally during weekends).

- The right to take part in teaching and/or supervision only applies to the course date to which the student has been admitted and registered on.
- If there are special reasons, the student may take part in course components that require compulsory attendance at a later date. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Responsible department

Department of Forest Biomaterials and Technology

Supplementary Information

Finalized by: Grundutbildningsnämnden, Fakulteten för naturresurser och lantbruksvetenskap