

Biofuels for Transportation

Programme course

6 credits

Biofuels for Transportation

TKMJ31

Valid from: 2017 Spring semester

Determined by
Board of Studies for Mechanical
Engineering and Design

Date determined
2017-01-25

Main field of study

Energy and Environmental Engineering, Mechanical Engineering

Course level

Second cycle

Advancement level

A1X

Course offered for

- Design and Product Development
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering
- Mechanical Engineering, Master's programme
- Sustainability Engineering and Management, Master's programme
- Chemical Biology, M Sc in Engineering
- Engineering Biology, M Sc in Engineering
- Energy-Environment-Management

Specific information

The course is not available for exchange students

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Courses: Large Technical Systems and Environment, Environmental Technology or equivalent.

Intended learning outcomes

Through a course on Biofuels for Transportation, students will learn the advantages, disadvantages and incentives for the use and production of biofuels. The course will review the raw materials, production processes, application in vehicles, environmental impacts and the debates about the sustainability for biofuels.

Upon completion of the course, students will have expanded their knowledge in the areas of and should become;

- Aware of how 1st and 2nd Generation biofuels are produced
- Able to evaluate environmental impacts from material and energy flows in the life-cycle of biofuels
- Aware of technologies and upgrades required for the use of biofuels in vehicles and infrastructure
- Acquainted with the different opinions and debates about the sustainability of biofuels
- Able to reflect upon how cooperation between different actors regarding material and energy resources can be integrated sustainably
- Acquainted with business dimensions related to biofuel production

Course content

The course will consist of many aspects concerning biofuel production, development and employment. Through lectures, seminars, study visits and practical assignments students will learn more about:

- Feedstocks for Biofuel Production
- Production Processes for Biofuels
- Vehicles and Infrastructural Requirements for Biofuels
- Environmental and Social Aspects Related to Biofuel Production and Employment
- Drivers and Conditions for Biofuel Development and Markets
- By-Products and Industrial Symbiosis in Biofuel Production

Teaching and working methods

The course will consist of the following components:

- Biofuel Lectures
- Industry Guest Lectures
- Biofuel Industry Study Visits
- Practical Exercises
- Home Examination

Examination

PRA1 Approved project assignments and approved seminars	3 credits U, G
UPG1 At-home examination	3 credits U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Industrial Ecology, Management Systems and Sustainability, Resource Efficient Products and Environmental Systems Analysis - Project Course.

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Niclas Svensson

Examiner

Mats Eklund

Course website and other links

Education components

Preliminary scheduled hours: 68 h

Recommended self-study hours: 92 h

Course literature

Kurslitteraturen består av en pdf-bok på webben som finns tillgänglig för nedladdning. Ytterligare information kommer att delas ut för aktiviteter och seminarier under kursen gång.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.