SYLLABUS

Renewable motor fuels 7.5 credits F7040T

Förnybara drivmedel

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2021-02-17

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LULEÅ TEKNISKA UNIVERSITET

Renewable motor fuels 7.5 credits F7040T

Förnybara drivmedel

Second cycle, F7040T

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Energiteknik	Energy Technology

Entry requirements

Selection

The selection is based on 30-285 credits

Course Aim

The overall course objective is to develop the skill of understanding and analyzing the role of renewable transportation fuels in a sustainable society and to understand and analyze different production processes and their technical, economic, and environmental performance.

After completing the course with a passing grade, the student must:

1. Knowledge and understanding

- Be able to explain and describe technical, environmental, and economic opportunities and challenges related to the production and use of various renewable transportation fuels, including their physical and chemical properties.
- Be able to explain and describe how techno-economic and environmental evaluations of renewable fuel performance can be performed and understand the challenges with this.

2. Skills and abilities

- be able to identify and describe necessary process steps to produce renewable fuels.
- be able to identify and evaluate different opportunities for process integration in the production of renewable transportation fuels.
- be able to formulate, plan and realize projects regarding renewable fuels and communicate the results in a popular scientific manner.

3. Judgment and approach

- demonstrate the ability to use and critically evaluate information and research results in the field of renewable fuels.
- demonstrate awareness of ethical aspects of research and development work.

Contents

Global and national statistics on the production and use of renewable transportation fuels, policy instruments and directives and their consequences, thermochemical and biochemical production processes (gasification, fermentation, digestion, etc.), physical and chemical properties of renewable fuels, industrial biorefinery concepts and process integration opportunities, methods for technoeconomic and environmental assessments.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
The course consists of teacher-led lectures (including guest lectures) with theory reviews and exercises, workshops with group discussions, sessions for project consultation and a study visit. The course participants carry out a project carried out in groups or individually with specialization in their own chosen in the area of renewable transportation fuels. The work is reported both in writing and orally. Participants also review other student's reports.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Approved written project work including oral presentation and completed review of reports. Grades (U 3 4 5) are set based on the quality of the written report, the oral presentation, the review of the report and the activity and participation during lectures. Attendance at compulsory lectures, presentations and study visits is required for a passing grade.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term “unauthorized aids” refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Engineering Sciences and Mathematics

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0004	Project Work	G U 3 4 5	7.5	Mandatory	A18	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Head Faculty Programme Director Niklas Lehto 2021-02-17

Syllabus established

by Dept. TVM Mats Näsström 2012-03-14