

SYLLABUS

Fuels and combustion technologies 7.5 credits W0016T

Bränslen och förbränningsteknik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2015-02-12**

Fuels and combustion technologies 7.5 credits W0016T

Bränslen och förbränningsteknik

First cycle, W0016T

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

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Physics, for example F0004T Physics 1 and F0006T Physics 3 or equivalent, W0007T Thermodynamics

Selection

The selection is based on 1-165 credits.

Course Aim

1. Knowledge and Understanding

After completing the course, you can:

- account for national fuels, their management and production
- account for different fuels chemical and physical composition and properties
- are able to describe different boiler types, fuel systems and flue gas treatment systems and explain the function of various components in CHP and H plants

2. Skills and Abilities

After completing the course, you can:

- calculate the boiler efficiency, flue gas flows and other combustion technically relevant quantities
- calculate/estimate emission levels at varying conditions and fuels, and be able to explain how emissions can be reduced.

3. Judgement and approach

After completing the course, you have:

- insight into the different combustion technologies/-devices opportunities and constraints including environmental consequences
- insight into the design bases and design problems for different combustion-/boiler equipment

Contents

- National fuels characteristics, management and production methods - Combustion techniques for solid, liquid and gaseous fuels. Different types of boilers are studied, its construction and applications for heating and CHP - Combustion reactions. Stoichiometry. Thermal chemistry. - Formation of pollutants and the ability to limit these by altering the conditions of combustion.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.
Lectures, exercises and field trips.

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. Written exam and mandatory study visits.

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
0001	Written exam	G U 3 4 5	6	Mandatory	A13	
0002	Study visit	U G#	1.5	Mandatory	A13	

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 Mats Näsström 2015-02-12

Syllabus established

by Mats Naesstroem 2013-02-15