Linnæus University

Dnr: 2022/3575-3.1.2.2

Course syllabus

Faculty of Technology

Kalmar Maritime Academy

1FT14U Maritim förbränningsteknik, 5 högskolepoäng
1FT14U Maritime Combustion Technology, 5 credits

STCW reference
Regulation A-III/2

Subject Group
Other Subjects within Technology

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved 2018-06-18
Revised 2022-10-24 by Faculty of Technology. Assessment methods are revised. Field-specific entry requirements have been removed.
The course syllabus is valid from spring semester 2023

Prerequisites
General entry requirements + Physics 1a alt. Physics 1b1 and Mathematics 2a alt. Mathematics 2b alt. Mathematics 2c. Physics 1b1 / 1a can be replaced by Natural Science 2 or equivalent.

Objectives

Knowledge and understanding
For a passing grade, the student should be able to:

- describe combustion process
- describe flue gas cleaning processes
- describe the environmental impact of combustion processes, and related regulations.

Skills and Abilities
For a passing grade, the student should be able to:

- implement sampling of ship fuels and evaluate test results
- calculate the flue gas composition

- perform smoke analysis and evaluate test results.

Content

- Characteristics and standard of liquid and gaseous fuels
- Analysis and treatment methods for liquid and gaseous fuels
- Ship's fuel treatment including separation, centrifugation and filtration
- Exhaust analysis methods
- Ship-specific combustion process
- Exhaust content
- Combustion efficiency and flue gas heat content
- Ship's methods, principles and equipment for flue gas purification
- Environmental impact of smoke gases and related regulations.

Type of Instruction

Teaching consists of lectures and exercises.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

In order to receive the grade Pass with distinction, it must be obtained on the written exam. Examination takes place through a written examination.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously. The compiled report will be filed at the Faculty and at the Kalmar Maritime Academy.

Required Reading and Additional Study Material

Alvarez, Henrik, *Energy Engineering, Part 1 and 2*, Student literature,ISBN 91-44-02894-6, ISBN 91-44-02949-7 (110 pages)

Kees Kuiken, *Diesel Engines*, ISBN/EAR 978-90-79104-05-5 (35 pages)

Technical Formula Collection, Maritime College