Linnæus University

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Course syllabus

Faculty of Technology
Kalmar Maritime Academy

1FT14I Maritim förbränningsteknik, 5 högskolepoäng
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 by Faculty of Technology 2018-01-08
The course syllabus is valid from autumn semester 2018

Prerequisites
General entry requirements and Mathematics 2a / 2b / 2c, Physics 1b1 / 1a or Mathematics B, Physics A (Field-specific entry requirements 7/A7). Physics A 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 written examinations and assessment of exercises and the student's performance during exercise.

Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is 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