



## Course syllabus

Faculty of Technology  
Kalmar Maritime Academy

1ER43U Analog- och kraftelektronik, 5 högskolepoäng  
Analogue- and power electronics, 5 credits

**STCW reference**

Sektion AIII/1, AIII/2, AIII/6 and AIII/7

**Main field of study**

Electrical Engineering

**Subject Group**

Electrical Engineering

**Level of classification**

First Level

**Progression**

G1N

**Date of Ratification**

Approved by Faculty of Technology 2021-11-29

The course syllabus is valid from spring semester 2022

**Prerequisites**

General entry requirements + Physics 1a alt. Physics 1b1 and Mathematics 2a alt. Mathematics 2b alt. Mathematics 2c.

### Objectives

*Proficiency and comprehension*

After completing the course the student should be able to:

- describe the function and the use of fundamental analogue electronic components
- describe rectifying and switch converting
- describe fundamental set ups with operational amplifier
- describe interferences in electrical circuits

*Skills and abilities*

After completing the course the student should be able to:

- perform basic calculations and troubleshooting as well as control measurements of electronic circuits

*Evaluation skills and Approach*

After completing the course the student should be able to:

- determine and use the measurement methods and instruments for measuring electrical DC and AC circuits

## Content

- Theory and application of active and passive electronic components
- Rectifying and switch converting
- Frequency inverters
- Step-up- and step-down circuits
- Uninterruptible Power Supply(UPS)
- EMC

## Type of Instruction

Instructions consists of lectures, graded exercises and assignments.

## Examination

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

In order to receive the Pass with distinction grade, a similar grade is required for the written exam.

Grading scale Pass or Fail is used for the graded exercises.

Knowledge assessment takes place as follows:

- individual written exam, 3 credits
- assessment of exercise/assignment performance, 2 credits

## 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.

## Required Reading and Additional Study Material

Kronkvist, Sven-Bertil, *Elektronik*, Revma Utbildning, latest edition, 100 of 122 pages

Course materials, Kalmar Maritime Academy

Technical formula handbook, Kalmar Maritime Academy