

## Course: Analogue Electronics 2

credits: 5

**Course code** ELVP20AAE2  
**Name** Analogue Electronics 2  
**Study year** 2020-2021  
**ECTS credits** 5  
**Language** English  
**Coordinator** J. Bout

**Modes of delivery** Lecture  
 Practical / Training  
**Assessments** Lab - Skills test  
 Theory - Written, organised by STAD  
 examinations

### Learning outcomes

The student can:

- Use the properties of AC waveforms to calculate RMS and mean values of various waveforms.
- Calculate energy and power in circuits with sinusoidal current and voltage sources.
- Calculate characteristic quantities (e.g.  $V$ ,  $I$ ) in RC, RL and RLC circuits.
- Obtain the transfer function of RC, RL and RLC networks
- Draw Bode-diagrams (including gain in dB) to explain the behavior of filters and resonance circuits
- Select and explain R, L and C for various filters.
- Calculate parameters of resonance circuits (resonance, Q-factor).
- Calculate efficiency and apply power conservation law to calculate voltages and currents in transformers, motors, and generators.
- Apply the characteristics and properties of different kinds of diodes in electric circuits, including use of their curves for calculations in practical applications.
- Apply the characteristics and properties of transistors in electric circuits, including applications as amplifiers.
- Apply the characteristics and properties of non-ideal operational amplifier in electric circuits.

### Content

During this course students will expand their knowledge on analogue electronics with electrical power and energy within AC networks including filters. Students will apply these aspects.

### Included in programme(s)

Electrical Engineering Major Sensor Technology

### School(s)

Institute of Engineering

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