Course: Circuit Analysis and Electronics 2 credits: 5

Course code	ELVP22AE2
Name	Circuit Analysis and Electronics 2
Study year	2025-2026
ECTS credits	5
Language	Dutch, with parts in English, English
Coordinator	J. Bout
Modes of delivery	Problem-based learning
Assessments	Circuit Analysis and Electronics 2 - Assignment

Learning outcomes

Defining
The student clearly identifies a problem or customer need, contextualizes it, consults relevant sources, and converts it into a goal, problem statement, and electrical engineering requirements.

Designing
The student considers various solution directions to arrive at a detailed and well-founded electrical engineered product/service/process based on the program of requirements, using appropriate design methodologies and taking into account societal interests and engineering standards.

Realizing
The student realizes and validates a (prototype of) a product/service/process based on a technical design, using the appropriate materials/techniques/instruments.

Content

During this course students will expand their knowledge of analogue electronics with electromagnetism, power and AC networks, including RC, RL and RLC filter design.

Complex numbers, RMS and mean values of sinusoidal waveforms are covered in the context of AC circuit analysis, for which power, energy, and efficiency is also calculated.

Frequency domain analysis is performed using Bode plots for filters and non-ideal op-amps. Students will apply these aspects to build a prototype and to find faults in circuits (simple maintenance).

Practical measurements are made with lab equipment (such as multimeter) to analyze circuits and write a test report.

Included in programme(s)

Electrical Engineering Major Mechatronics
Electrical Engineering Major Sensors & Smart Systems
Electrical Engineering Major Energy & Power Electronics

School(s)

Institute of Engineering

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