Course: Circuit Analysis and Electronics 1 credits: 5

Course code	ELVP22AE1
Name	Circuit Analysis and Electronics 1
Study year	2022-2023
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	J. Bout
Modes of delivery	Problem-based learning
Assessments	Circuit Analysis and Electronics 1 - Written, organised by STAD examinations

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

This course addresses the concepts of current, voltage, power, energy, and basic electronic components (resistors, capacitors, diodes, transistors, linear voltage regulators, and operational amplifiers).

Futher topics:

- Mathematical modelling is taught using Ohm's law and other techniques like Kirchhoff’s laws, superposition, Thevenin's, and Norton theorems to analyze, design, and simulate circuit prototypes.
- Ideal and non-ideal current and voltage sources (DC and AC) are addressed in connection with rectifier circuits and linear power supplies.
- Practical measurements are made with lab equipment (such as a multimeter) to analyze circuits and write a test report.

Included in programme(s)

Electrical Engineering Major Sensor Technology
Electrical Engineering Major Electronics
Electrical Engineering Major Mechatronics

School(s)

Institute of Engineering

share your talent. move the world.

Although every effort has been taken to ensure the accuracy of the information in the ECTS Course Catalogue, we cannot guarantee that the content and the information contained in it is always up-to-date, complete or true. Accordingly, no rights can be derived from the contents of the catalogue.