Vak: Introduction to Electrical Engineering — credits: 4

Vakcode	ELVH20IEE
Naam	Introduction to Electrical Engineering
Studiejaar	2022-2023
ECTS credits	4
Taal	Engels
Coördinator	P.J. Kamphuis
Werkvormen	Onderwijs
Toetsen	Introduction to Electrical Engineering - Opdracht

Leeruitkomsten

The student:

- knows basics of differentiation and integration;
- knows the basic electrical components, their (transient) behavior, and use as sensor;
- can apply ohms law and Kirchoffs laws;
- is familiar with DC and AC signals;
- can do basic measurements with wave generator and oscilloscope;
- can apply analogue high- and low pass filters;
- knows concept of AD/DA conversion.

Inhoud

1. Differentiation/integration: meaning and application
2. Passive components: R, C, (ideal) diode, transformer?. Active: power supply, opamp, microcontroller
3. Current, voltage, power, energy, period time, frequency, resistance, capacitance
4. DC AC sinus cosine phase admittance
5. Workshop using wave generator and oscilloscope. Resistor network, Charging capacitor, capacitor as low/high pass filter, opamp as amplifier/differentiator/integrator/comparator
6. Theory of analogue RC-filters
7. Digitizing signals
8. Signal preparation for use in microcontrollers

Opgenomen in opleiding(en)

Minor Internet of Things
Exchange Internet of Things (autumn)

School(s)

Instituut voor Engineering

share your talent. move the world.

De ECTS onderwijscatalogus van de Hanzehogeschool Groningen wordt met de grootst mogelijke zorg samengesteld. Het is echter mogelijk dat de inhoud van de catalogus -en de daarin vervatte informatie- verouderd, incompleet of onjuist is. Aan de inhoud van de catalogus kunnen dan ook geen rechten worden ontleend.