# Course: Power System Design — credits: 10

| | |
|---|---|
| **Course code** | ENDH20PSD |
| **Name** | Power System Design |
| **Study year** | 2025-2026 |
| **ECTS credits** | 10 |
| **Language** | Dutch, with parts in English |
| **Coordinator** | A. Hoogerwerf |
| **Modes of delivery** | Education |
| **Assessments** | Elektrische aandrijvingen - Assignment<br>Power System Design - Assignment |

**Learning outcomes**

- The student can calculate the energy and powers related to energy conversion.
- The student can calculate the effective voltages and currents in energy networks.
- The student can apply the law of induction to deduce the characteristics of generators and transformers.
- The student can calculate the currents, voltages, and power of 3-phase electricity networks.
- The student can describe the components comprising an electricity network and knows the functions and characteristics of these components.
- The student can design an electricity network based on user specifications.

**Content**

- Different energy sources (fossil fuels, renewable energy, nuclear energy, cogeneration)
- The relationship between different types of energy (kinetic energy, heat, electric potential energy) and the energy conversions.
- Electric work, power, electric and mechanical power in AC and DC networks
- Power factor, active power, idle power, and apparent power in 1 and 3-phase networks.
- Applications of the law of induction for the basic components of an electricity network (generators and transformers),
- Transport and distribution of electricity (different types of electricity networks, lines and cables, transformers, protection)
- Network simulations (load-flow calculations, short-circuit calculations)

**Included in programme(s)**

Electrical Engineering

**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.