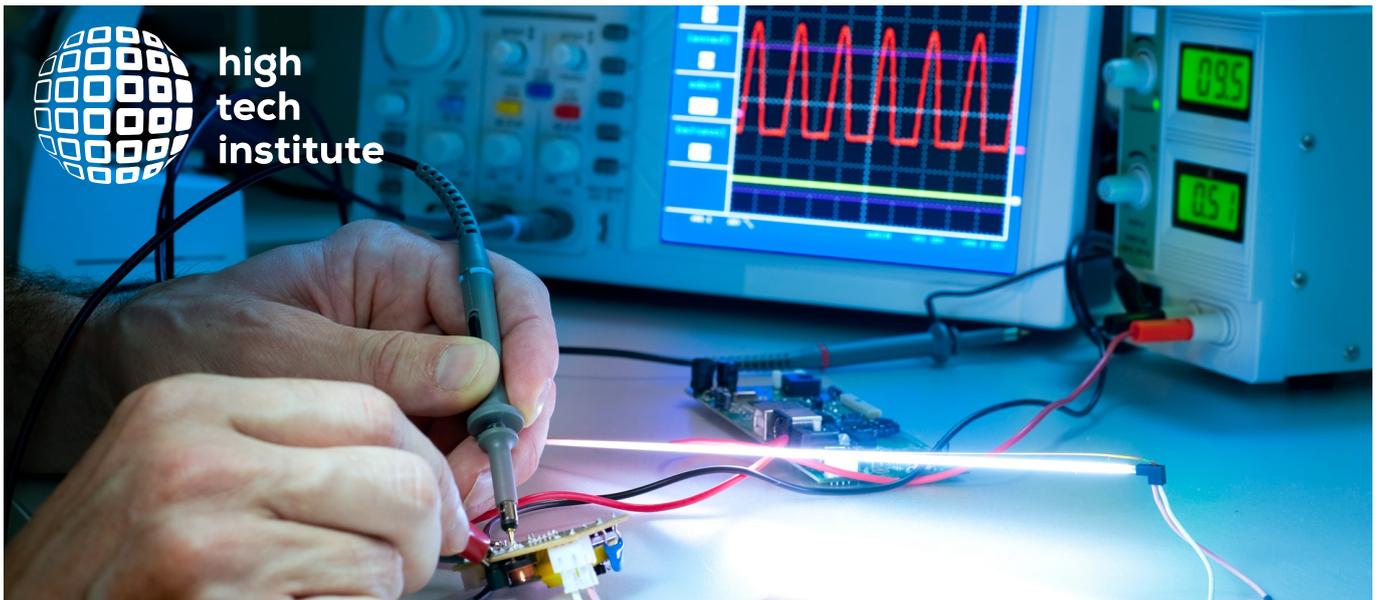


TRAINING BROCHURE

Electronics for non-electronic engineers - basics electricity and analog electronics training



high
tech
institute

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Electronics for non-electronic engineers - basics analog

Price:	€ 4,725 excl. VAT *
Duration:	22 lessons (= day parts)
Contact:	training@hightechinstitute.nl, +31 85 401 3600
Score:	8.6 ★★★★★☆

Intro

A comprehensive course for non-electronic engineers to gain insight, practical knowledge and skills in electricity and analog electronics, essential to work in projects together with electronic engineers and to learn how to handle electronic measurement instruments.

The course consists of two modules that can be selected individually but the knowledge of module 1 is required for module 2.

Contact the course leader in case only module 2 is wanted.

Objective

After completion of this course the participant has gained:

- Basic knowledge of electricity and analog electronics to ease the communication with electronic engineers;
- Practical experience with electrical measurements and equipment, simple usage of an analog simulator.

Intended for

This course is intended for engineers (of technical college / university level) working in research, development and/or engineering. After this course the following course can be attended: "[Electronics for non-electronic engineers basics digital electronics \(ENE-BDE\)](#)".

Certified by



Certification

This course is certified by [the European society for precision engineering & nanotechnology \(euspen\)](#) and [the Dutch Society for Precision Engineering \(DSPE\)](#) and leads to the [ECP2-certificate](#), depending on the results of the tests.

Course leader

[Hans Vink MSc](#)

Trainers

[Ing. Martin Vernhout](#)
[Dr. Ad van den Enden](#)

** Prices are subject to change. Price correction will be applied at the end of the year.*

Keep me posted



Program

Module 1: Basics electricity, circuit theory (7 lessons, 1 test)

Basic circuit theory, charge, work, power, resistance, symbols, voltage, current, battery, series networks, parallel networks, Ohm, Kirchhoff, superposition, Thevenin, Norton, max power transfer, AC power calculations, attenuator networks, capacitors, inductors, transient behavior of RC and RL networks, AC behavior of RLC, phase, impedance, admittance, filters, resonance. Hands-on practice with measurement equipment (DMM, Scope, function generator), measurement techniques, Spice simulator and its application. Bode diagram.

Module 2: Basics analog electronics (15 lessons, 2 tests)

Semiconductor technology, diodes, bipolar junction transistors, FETs, MOS transistors, switching transistors, power output stages, ICs, feedback theory, operational amplifier and its application, sensors. Component specifications, temperature influence. Instrumentation amplifiers. DC and AC analysis, gain. Power supplies (linear and SMPS). EMC and SI, feedback, stability, noise. Oscillators (introduction to phase-locked loops). Modulation and demodulation. Thyristor, triac. Latchup. Hands-on amplifier, power supply, simulation.

Study load: 5 hours a course week.

Course price per module:

Module 1: € 1,650,-

Module 2: € 3,075,-

Methods

Methods: lectures, demonstrations, exercises, assignments, hands-on, tests.

Course material: book, handouts. Award: diploma or certificate, dependent on the results of the three tests.

Trainers

Ing. Martin Vernhout

Dr. Ad van den Enden

Remarks from participants:

- 'Martin was a great trainer. The course covered a lot of content so is a good value.' > Francesca Harris , Cochlear