

Electrical and Electronics Engineering (F000605)

Course size (nominal values; actual values may depend on programme)

Credits 4.0 **Study time** 120 h **Contact hrs** 60.0 h

Course offerings and teaching methods in academic year 2016-2017

A (semester 2)	lecture	30.0 h
	seminar: coached exercises	15.0 h

Lecturers in academic year 2016-2017

Doutrelouigne, Jan	TW06	lecturer-in-charge
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Offered in the following programmes in 2016-2017

	crdts	offering
Bachelor of Science in Economics	4	A
Bachelor of Science in Business Engineering	4	A
Bachelor of Science in Business Economics	4	A
Master of Science in Economics	4	A
Preparatory Course Master of Science in Business Engineering	4	A

Teaching languages

Dutch

Keywords

Electrical engineering, electronics, analog circuits, digital circuits

Position of the course

To make the students familiar with the basic principles of electrical engineering (e.g. electrical networks and electrical energy conversion in motors and generators) and electronics (e.g. active semiconductor components, analog circuits and digital circuits).

Contents

- Electrical networks: direct current
- Electrical networks: alternating current
- Distribution of electrical energy
- Electrical energy conversion in motors and generators
- Signals and communication channels
- Electronic semiconductor components
- Analog electronic circuits
- Digital electronic circuits
- Electronic instrumentation

Initial competences

Mathematics:

- Linear differential equations
- Complex numbers
- Fourier series and Fourier transform

Final competences

- 1 Solve simple electrical circuits in direct current, alternating current, and transient
- 2 Understand the operation of the basic electronic components (e.g. diodes, MOSFETs and bipolar transistors)
- 3 Analyse simple analog and digital electronic circuits

Conditions for credit contract

Access to this course unit via a credit contract is unrestricted: the student takes into consideration the conditions mentioned in 'Starting Competences'

Conditions for exam contract

Access to this course unit via an exam contract is unrestricted

Teaching methods

Lecture, seminar: coached exercises

Extra information on the teaching methods

Lectures and exercises with an active input of the students.

Learning materials and price

An extensive set of Dutch PowerPoint slides is available.

References**Course content-related study coaching****Evaluation methods**

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination

Examination methods in case of periodic evaluation during the second examination period

Written examination

Examination methods in case of permanent evaluation

Participation

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

End-of-term evaluation: written closed-book exam

Permanent evaluation: participation during exercise sessions

Calculation of the examination mark

End-of-term (90%) and permanent (10%) evaluation.