Electrical Engineering and Electronics (VAA0240)
General information

Item	Description
Course code	VAA0240
Course title	Electrical Engineering and Electronics
Credits	6 ECTS
Language	English
Assessment	Exam
Semester	Autumn–Spring
Grading	Graded
Lecturer	Eduard Brindfeldt, PhD (eduard.brindfeldt@neti.ee)

Course objective
The course provides fundamental knowledge of electrical engineering and electronics, including DC and AC circuit theory, electrical and magnetic phenomena, electrical measurements and basic electronics.

Learning outcomes
After completing the course, the student:

1. applies fundamental electrical laws in circuit analysis;
2. recognises electrical and electronic symbols;
3. explains the operation of electronic components and circuits;
4. constructs simple electrical circuits;
5. performs electrical and non-electrical measurements;
6. correctly uses electrical measuring instruments.

Assessment methods and alignment

Assessment method	Teaching methods	Learning outcomes assessed
Written exam	Lectures, guided exercises	LO 1–3
Calculation tasks	Exercises, independent work	LO 1, LO 4
Measurement tasks	Practical exercises	LO 4–6

Participation requirements

Activity	Requirement	Notes
Assignments	100% completed	Mandatory
Contact classes	Minimum 75% attendance	Required for exam admission

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Schedule and topics

Week	Topic	Content	Student activities
1	Fundamentals	Concepts and safety	Lecture
2	DC circuits	Ohm’s and Kirchhoff’s laws	Exercises
3	Electromagnetism	Magnetic fields	Calculations

Week	Topic	Content	Student activities
4	AC circuits	Single- and three-phase	Exercises
5	Transients	Time-domain phenomena	Analysis
6	Measurements	Instruments and methods	Measurement tasks
7	Electronics basics	Semiconductor devices	Circuit analysis
8	Digital electronics	Logic elements	Exercises
9	Revision and exam	Learning outcome assessment	Exam preparation