

Course Manual GE2

Fundamentals of Electrical Engineering 2

Version: 4 | Last Change: 25.09.2019 11:34 | Draft: 0 | Status: vom verantwortlichen Dozent freigegeben

– General information

Long name Fundamentals of
Electrical Engineering 2

Approving CModule [GE2_BaET](#)

Responsible Prof. Dr. Eberhard
Waffenschmidt
Professor Fakultät IME

Valid from summer semester 2021

Level Bachelor

Semester in the year summer semester

Duration Semester

Hours in self-study 60

ECTS 5

Professors Prof. Dr. Eberhard
Waffenschmidt
Professor Fakultät IME

Requirements Basic Electrical
Engineering Part 1

Language German, English if
necessary

Separate final exam Yes

Literature

Gert Hagman, „Grundlagen der Elektrotechnik“,
AULA-Verlag, ISBN 978-3-89104-747-7

Final exam

Details

Written exam:
The exam consists of
three parts A, B, C:
Part A ask for basic
skills (knowledge and
simple application)
Part B ask for required
skills (application and
evaluation)
Part C asks for extended
skills (creativity and
combination of the
acquired knowledge)
Shortly after the first
exam date following
the lecture an
additional (3rd.) written
exam is scheduled.

Minimum standard Grade 4,0

Exam Type EN Klausur

– Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	<p>The students are able calculate and analyze electrotechnical systems with time varying currents and voltages. They can apply alternating current calculations using complex numbers and are able to use different graphical representations. They can especially perform calculations for the following topics.</p> <ul style="list-style-type: none">- Key values describing alternating currents- Inductors and capacitors- Alternating current calculations using complex numbers- Complex impedances and complex voltage divider- Apparent and reactive power- Frequency diagrams- High- and low path filters- Resonant circuits, quality factor- Transformer- Three phase systems

Special requirements

none

Accompanying material	- Lecture presentaiions (pdf format) - Script for exercises
------------------------------	--

Separate exam	No
----------------------	----

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	2
Exercises (whole course)	2
Exercises (shared course)	0
Tutorial (voluntary)	0

– Practical training

Learning goals

Goal type	Description
Knowledge	The students perform project-like experiments in the lab. The experiments relate to each other. The aim of the pre-defined experiments is to understand and evaluate the function of a wireless power transmission system. For this purpose the students build themselves from simple materials the components, which are investigated, e.g. planar inductor coils.

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	1
Tutorial (voluntary)	0

Special requirements

none

Accompanying material	- Explanations of the lab experiments and report templates
------------------------------	--

Separate exam	Yes
----------------------	-----

Separate exam

Exam Type	EN praxisnahes Szenario bearbeiten (z.B. im Praktikum)
------------------	--

Details	- Final discussion after each lab date - Writing of lab reports
----------------	--

Minimum standard	Successful participation of the lab courses
-------------------------	---