Technology
Arts Sciences
TH Köln

Course Manual EEV

Electrical Power Distribution

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General information

Long name	Electrical Power Distribution
Approving CModule	EEV_BaET
Responsible	Prof. Dr. Eberhard Waffenschmidt Professor Fakultät IME
Valid from	winter semester 2022/23
Level	Bachelor
Semester in the year	winter semester
Duration	Semester
Hours in self-study	60
ECTS	5
Professors	Prof. Dr. Eberhard Waffenschmidt Professor Fakultät IME
Requirements	- Analysis of electrical Networks - Alternating current calculation using complex numbers - Apparent and reactive power - symmetrical three phase systems
Language	German
Separate final exam	Yes

Literature

D. Nelles / CH. Tuttas, „Elektrische Energietechnik", B.G. Teubner Verlag, Stuttgart, ISBN 3-519-06427-8

Final exam

Details	the exam consists of three parts A, B, C: - Part A ask for basic skills (knowlege and simple application) - Part B ask for required skills (application and evaluation) - Part C saks for extended skills (creativity and combination of the aquired knowlede)
Minimum standard	grade 4.0
Exam Type	EN Klausur

− Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	- Recognize and name grid structures amd components and knowing their benefits - Apply line properties and comnsider them for calculations. - Calculate Currents and Voltages on lines. - Calculate symmetrical and asymmetrical three phase systems. - Evaluate the grid connection of generators (e.g. PV-systems) and load. - Calculate short-circuit currents and dimension safety components. - Knowledge of the grid control and calculation of the reaction due to load steps.

Special requirements

none

Accompanying material	- Lecture presentaions (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	- Measurement of wave properties of lines - Simulation of load flows - Switching and measurement of load flows

Expenditure classroom teaching

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

Special requirements

none

Accompanying material	- Explanations of the lab expereiments 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	Succesful participation of the lab courses