COURSE TITLE:    POWER ELECTRONICS FOR POWER QUALITY IMPROVEMENT

Institute / Division: Institute of Circuit Theory and Metrology / Faculty of Electrical and Computer Engineering

Course code: E1-PQual

Number of contact hours: 45

Duration: 1 semester

ECTS credits: 5

Programme description: This course comprises lectures and computer simulations. It covers basic aspects of electric power quality improvement with the use of power electronic converters. Modern non-active powers compensation techniques are discussed. All subjects are clarified and made familiar using exercises and computer simulations. Subjects of the course are listed below:

- Electric power definitions
- Evolution of electric power theory
- Components of load current and power
- Detection of non-active load current and power components
- Principles of active compensation
- Introduction to power electronic converters used for power quality improvement
- Single- and three-phase shunt active power filter
- PFC rectifier

Course type: lectures (20h), computer simulations (20h), project (5h)

Literature:


Prerequisites: Basic Circuit Theory

Assessment method: Project and computer simulations

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