COURSE DETAIL

POWER ELECTRONICS AND POWER SYSTEMS
Country United Kingdom - England
Host Institution Imperial College London
Program(s) Imperial College London
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Electrical Engineering
UCEAP Course Number 138
UCEAP Course Suffix
UCEAP Official Title POWER ELECTRONICS AND POWER SYSTEMS
UCEAP Transcript Title POWER ELECTR&SYSTEM
UCEAP Quarter Units 7.50
UCEAP Semester Units 5.00

Course Description

This course explores aspects of electrical power in the context of a wider energy system. The first aspect is electronic “switch-mode” circuits for conditioning and converting power such as in the grid interface for solar and wind energy systems. Circuits for various types of conversion between DC voltage levels and to/from AC are analyzed in order to support circuit design to meet a performance specification. The second aspect covers the electromagnetic devices such as transformers, motors, generators, and transmission lines of an AC power systems. The performance and efficiency of each type of electromagnetic device will be analyzed. The link between these devices and how frequency and voltage of a power system are controlled will be illustrated. The course concludes with a discussion of the transition needed in power systems to achieve zero carbon dioxide emissions and the roles of power electronic, electromagnetic, and information technologies have in that transition.

Language(s) of Instruction
English

Host Institution Course Number
ELEC50012

Host Institution Course Title
POWER ELECTRONICS AND POWER SYSTEMS

Host Institution Course Details
https://intranet.ee.ic.ac.uk/electricalengineering/eecourses_t4/course_content...

Host Institution Campus
Kensington

Host Institution Faculty

Host Institution Degree

Host Institution Department
Department of Electrical Engineering

Course Last Reviewed
2022-2023

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