



*Name of the course:*

*Course type:*

*Responsible lecturer:*

*Content:*

**Electricity**

Optional

Dr. Gábor Battistig

Unification of the electrical principles learned in the bachelor's and master's courses, a uniform knowledge, mastery, and application of them, brought back to first principles. The aim of the course is for the student to have in-depth knowledge of electrical engineering in the design and application of electrical and electronic systems, and to use it to create modern solutions that meet scientific and industrial challenges. The design and application of modern Internet-based systems requires an understanding of the interaction of high-frequency electromagnetic fields in various material systems. The interaction of high-frequency devices and the handling of interference phenomena necessitate a deeper knowledge and understanding of theoretical electrical knowledge.

Featured topics: the complete system of Maxwell's equations, simpler and more complex forms, solvability; Static and stationary electromagnetic fields; Quasi-stationary spaces; Transient phenomena; Electromagnetic waves, antennas

*Literature:*

- Charles K. Alexander, Matthew N.O. Sadiku – FUNDAMENTALS OF ELECTRIC CIRCUITS, SIXTH EDITION, McGraw-Hill 2017 ISBN 978-0-07-802822-9