

## Electronics for Physicists (E/A) - physics774

<i>Course</i>	Electronics for Physicists (E/A)
<i>Course No.</i>	physics774

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+1	6	ST

### Requirements for Participation:

**Preparation:** Electronics laboratory of the B.Sc. in physics programme

**Form of Testing and Examination:** Requirements for the examination (written): successful work with the exercises

**Length of Course:** 1 semester

**Aims of the Course:** Comprehension of electronic components, methods to derive the dynamical performance of circuits and mediation that these methods are widely used in various fields of physics

**Contents of the Course:** Basics of electrical engineering, RF-electronics I: Telegraph equation, impedance matching for lumped circuits and electromagnetic fields, diodes, transistors, analogue and digital integrated circuits, system analysis via laplace transformation, basic circuits, circuit synthesis, closed loop circuits, oscillators, filters, RF-electronics II: low-noise oscillators and amplifiers

### Recommended Literature:

P. Horowitz, W. Hill; The Art of Electronics (Cambridge University Press)

Murray R. Spiegel; Laplace Transformation (McGraw-Hill Book Company)

A.J. Baden Fuller; Mikrowellen (Vieweg)

Lutz v. Wangenheim; Aktive Filter (Hüthig)

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