

Electronics for Physicists (E/A) - physics774

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

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

Requirements:

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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