

Title <b>Selected issues of signal processing</b>	Code <b>1010325231010320447</b>
Field <b>Electrical engineering</b>	Year / Semester <b>2 / 3</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>1</b> Classes: -    Laboratory: <b>1</b> Projects / seminars: -	Number of credits <b>3</b>
Language <b>polish</b>	

**Lecturer:**

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**Status of the course in the study program:**

Obligatory course of the study programs for the branch Electrical Engineering, subbranch Microprocessor Control Systems in Electrotechnics.

**Assumptions and objectives of the course:**

Study of the propriety of signals and systems in time and frequency domain, rules of the designing of filters and other discreet structures.

**Contents of the course (course description):**

Systems and signals. The classification property of the signal. The introduction into problems of the space signals. Approximation of the signal. Presents of signals at the use Fourier's formula. Linear stationary systems. Analysis in the time damain. The convolution. Singular functions: impulses and jumps. The impulse respons. Transfer functions. Line spectrum and spectrum transfer functions. Series of Fourier's. Analysis in the frequency domain. Fourier's transform and continuous spectrum. Impulses in the time and frequency domain. Systems with the feedback and their transfer functions. The analysis of frequency responce. Nyquist and Body diagram. Sampling and discreet signals. The discreet Fourier transform. Discrete models. Differece equations. The Z transform. The inverse z transform. The application of the digital filtration and the impulse control. Lineal discrete systems. The impulse response. Discrete transfer functions. The causality and the stability of digital systems. Digital filters. SOI filters. NOI filters. Designing of digital filters.

**Introductory courses and the required pre-knowledge:**

Basic knowledge of electrical engineering, analogue and digital technics.

**Courses form and teaching methods:**

Lectures, Laboratory.

**Form and terms of complete the course - requirements and assessment methods:**

Written tests, laboratory examination.

**Basic Bibliography:**

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**Additional Bibliography:**

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