Title	Code
Signals and Dynamic Systems	**1010331131010330286**
Field: **Control Engineering and Robotics**	Year / Semester: **2 / 3**
Specialty: **-**	Course: **core**
Hours: Lectures: **-** Classes: **-** Laboratory: **2** Projects / seminars: **-**	Number of credits: **2**
	Language: **polish**

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Status of the course in the study program:

Obligatory course, Faculty of Electrical Engineering, field Control Engineering and Robotics.

Assumptions and objectives of the course:

The student should obtain knowledge of the modelling of the dynamic systems, methods of the signals analysis in time and frequency domain.

Contents of the course (course description):

Knowledge concerning models of dynamic systems realized using Matlab, signal analysis and graphical presentation of the analysis results, analysis methods of deterministic and stochastic signals in time domain and frequency domain, Discrete Fourier Transform and sampling theory applied to calculation of circular convolution, linear convolution and correlation function.

List of the laboratory exercises:

Exercises 1-3	Introduction to Matlab programming.
Exercises 4	Basic signals statistic parameters.
Exercises 5	Statistic variables distributions - histograms.
Exercises 6	Signal correlation analysis.
Exercises 7	Fourier analysis.
Exercises 8	Continues signals discretization - theorem of discretization.
Exercises 9-10	Discrete Fourier Transform (DFT).
Exercises 11	Inverse Discrete Fourier Transform (IDFT).
Exercises 12	Discrete convolution.
Exercises 13	DFT and convolution applications.
Exercises 14-15	Exam and additional exam.

Introductory courses and the required pre-knowledge:

Knowledge of the materials from lectures on Signals and Dynamic Systems.

Courses form and teaching methods:

Laboratory exercises.

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

Test and evaluation of laboratory reports.

Basic Bibliography:

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Additional Bibliography:

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