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Assessment methods of study outcomes

Faculty of Electrical Engineering

Lecture

- ? the credit of the lecture preceded with the credit of occupations laboratory exercises
- Designing work and laboratory exercises:
- ? the test and awarding the knowledge of need-to-know to realization of placed problems
- in the given area of tasks,
- ? verification skills on every exercises
- ? evaluation of the knowledge and skills related to the realization of laboratory exercise, the evaluation of the report from done exercises.

Obtaining additional points for activity during exercises, in particular way for:

- ? proposing to discuss additional aspects of the subject
- ? effective use of knowledge obtained during solving of given problem;
- ? comments related to improve teaching material,
- ? aesthetics of solved problems and reports ? within homework.

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.

Basic bibliography:

- 1. Borodziewicz J., Jaszczak K.: Cyfrowe przetwarzanie sygnałów. WNT, Warszawa, 1987.
- 2. Haykin S.: Modern Filters. MacMillan, New York, 1989.
- 3. Izydorczyk J.: Płonka G., Tyma G., Teoria sygnałów, Wstęp, Wyd. Helion, 1999.
- 4. Marven C., Ewers G.: Zarys cyfrowego przetwarzania sygnałów, WKiT, Warszawa 1999.
- 5. Szabatin J.: Podstawy teorii sygnałów, WKiŁ, Warszawa 1982.

Additional bibliography:

- 1. Lyons R.G.: Wprowadzenie do cyfrowego przetwarzania sygnałów, WKiT, Warszawa 1999.
- 2. Oppenheim A.V., Schafer R.W.: Cyfrowe przetwarzanie sygnałów, WKiŁ, Warszawa 1979.
- 3. Osiowski J.: Zarys rachunku operatorowego, WNT, Warszawa 1981.

Result of average student's workload

Activity	Time (working hours)
1. participation in the lectures	9
2. participation in the laboratory exercises	9
3. participation in consultations on the lecture	5
4. participation in consultations on the laboratory exercises	10
5. preparation for the laboratory exercises	10
6. preparation for the exam	10
7. preparation for the laboratory exercises pass	10
8. participation in the exam	5

Student's workload

Source of workload	hours	ECTS
Total workload	68	3
Contact hours	38	1
Practical activities	9	1