Signals & Systems

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Lecture Syllabus
(1st part – „Signals & Systems”)

Files:
00_... – 08_...

- 00_Signals Systems
- 01_ Signals Systems Introduction
- 02_Linear systems signals
- 03_Fourier transform properties
- 04_Signal filtering
- 05_Signal sampling
- 06_Power properties of signals

TEST #1

- 07_Random signals
- 08_Noise in transmission systems

Lecture Syllabus
(2nd part – „Signals & Systems”)

Files:
09_... – 15_...

- 09_Amplitude and Frequency Modulations
- 10_ AM and FM Noise Immunity
- 11_Pulse Amplitude Modulation
- 12_Intersymbol Interference
- 13_Transmission Codes
- 14_Pulse Code Modulation
- 15_Keying

TEST #2

Prerequisites

- **circuit theory (*Physics, Circuits Theory*)**
- **complex numbers (*Algebra*)**
- **function series (*Mathematical Analysis*)**
- **differential/integral calculus (*Mathematical Analysis*)**
- **telecommunications basics (*Intr. to Telecommunications*)**
- **probability calculus (*Probability & Statistics*)**

Access to slides/books

http://tele.agh.edu.pl/~papir/Signals_Systems_2025.zip

http://tele.agh.edu.pl/~papir/Books_Signals_Systems

Consultations

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12 617 48 11
601 700 406
room 217/B9

work on your own

Reading (pdf, recommended)

Principles of Communications
Systems, Modulation, and Noise

Rodger E. Ziemer, William H. Tranter

John Wiley

Digital Communications

Bernard Sklar

Prentice Hall

Reading (recommended)

Systemy telekomunikacyjne
Communication systems

S. Haykin

Wydawnictwa Komunikacji i Łączności

John Wiley

Podstawy teorii sygnałów

J. Szabatin

Wydawnictwa Komunikacji i Łączności

Reading (pdf)

http://tele.agh.edu.pl/~papir/

Modulacja i detekcja
Zbiór zadań z rozwiązaniami

M. Kantor, Z. Papir

Wydawnictwa AGH

Analiza częstotliwościowa sygnałów
Zbiór zadań

Z. Papir

Wydawnictwa AGH

Reading (recommended)

Sygnały i systemy

Jacek M. Wojciechowski

Wydawnictwa Komunikacji i Łączności

Auditorium classes

1. During auditorium classes student may get grades from different activities and from two tests (each three problems).
2. The final score is an average score of all grades achieved during the semester.
3. Two or more unexcused absences results in auditorium classes failed with no retake.
4. The first retake for auditorium classes is either the 1st or 2nd date of examination.
5. After a successful retake student may attend the examination in one of remaining dates.

Examination

1. Exempt from the examination if the the student passed tests with a grade at least 4.0 each.
2. Student is admitted to examination if his/her final grade scored in auditorium class is at least 3.0.
3. Student shall have the right to take examinations three times on due dates, including the primary date and two retake dates. Unexcused absence on the examination on a due date shall result in deprivation of that date. Failure to complete the classes up to the date of the retake examination, shall not justify the student's absence during the examination and shall result in deprivation of all the examination dates up to the moment of completing the classes.
4. Final grade is computed including all grades from auditorium class and examinations.
5. During examination student is provided with 3 problems. Each solution is scored between 2.0 – 5.0. In order to pass examination student has to score at least 2 grades 3.0.
6. Problems to be solved during examination cover entire material being presented during lectures and auditorium classes.

Examination

7. During examination student is not allowed to use any textbooks, lecture slides, lecture notes, xerocopies. Student may use one A4 sheet of paper including mathematical formulas related to the subject.
8. Duration of the examination is 120 min.
9. Student is not allowed to use laptops, tablets, mobiles during examination.

Signals & Systems (EiT & Erasmus)