

ESISM

Signals, Systems and Modulations

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office hours Wed. 10-12

Course description:

date	Lectures	room 017b
26.02.2020	Analog and Digital Communication	
04.03.2020	Fourier transform and its properties	
11.03.2020	Analog LTI systems	
18.03.2020	Sampling, discrete time signals and transforms	
25.03.2020	Z Transform, poles and zeros of Z transform	
01.04.2020	Discrete time systems, digital filters	
08.04.2020	Adaptive filters, prediction of signals	
15.04.2020	Analog amplitude and frequency modulations	
22.04.2020	Exam 1	
06.05.2020	Digital modulations and transmission codes	
13.05.2020	Reception of digital signals	
20.05.2020	Quantization, PCM	
27.05.2020	Compression	
03.06.2020	Channel capacity, limits of transmission	
10.06.2020	Exam 2	

Signal processing

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Wednesday, 08.15 AM, room 017b

Tutorials:

date	Tutorials - even weeks	room 104
05.03.2020	Continuous time signals and systems	
19.03.2020	Discrete time signals and transforms	
02.04.2020	Z Transform, digital filters	
16.04.2020	Analog modulations	
30.04.2020	Digital modulations	
14.05.2020	Quantization, prediction, compression	
28.05.2020	Problems for final exam	

date	Tutorials - odd weeks	room 104
12.03.2020	Continuous time signals and systems	
26.03.2020	Discrete time signals and transforms	
09.04.2020	Z Transform, digital filters	
23.04.2020	Analog modulations	
07.05.2020	Digital modulations	
21.05.2020	Quantization, prediction, compression	
04.06.2020	Problems for final exam	

Thursday, 10.15 AM, room 104

Laboratory:

date	Laboratory	where
16.03, 17.03, 23.03, 24.03	Sampling and discrete transforms	504
30.03, 31.03, 06.04, 07.04	Discrete filters	504
27.04, 28.04, 20.04, 21.04	Adaptive filtering	504
11.05, 26.05, 04.05, 05.05	Transmission codes	412/504
25.05, 09.06, 18.05, 19.05	Digital Modulations	412/504
08.06, 16.06, 01.06, 02.06	Quantization and ADPCM	504
to be defined	additional laboratory term	504

Mondays 14.15 -16

Tuesdays 14.15 -16

Bibliography:

- K. Sayood *Introduction to Data Compression*, Morgan Kaufman (IT library)
- L.W. Couch *Digital and Analog Communication Systems* Prentice Hall (IT library)
- I.A. Glover *Digital Communications* (IT library)
- S.Haykin *Communication Systems*, Wiley 2001
- N.S.Jayant, P.Noll "*Digital coding of waveforms*"
- A.Gersho, R.M.Gray "*Vector quantization and signal compression*"
- A.M. Kondozi "*Digital speech*"
- L.Hanzo, F.Clare, A.Somerville, J.P.Woodward: "*Voice compression and communications*"
- P.Vary, R.Martin „*Digital speech transmission*", Wiley 2005
- N. Netravali, B. Haskell "*Digital pictures: representation, compression, and standards*"
- M.Ghanbari „*Standard codecs – image compression to advanced video coding*"
- Z.M. Hussain, A.Z. Sadik, P. O’Shea „*Digital Signal Processing – an Introduction with Matlab and applications*", Springer 2011
- Mark Owen „*Practical signal processing*"

Assessment:

During the **laboratory** exercises it is possible to score up to **30** points (5 pts per one session)

For mid-term exam (1) up to **35** points, the same for final exam (2)

During the session you may repass both exams.

The best score reckons.

There are also up to **10** points to get during the **tutorials**.

The final result is based on the following pattern:

A	5	91-110 points
B+	4.5	81-90 points
B	4	71-80 points
C+	3.5	61-70 points
C	3	51-60 points
D	2	0 -50 points

Rules:

1. Attendance is checked at tutorials. For more than one absence an excuse is needed (e.g. medical certificate).
2. Attendance is mandatory at laboratory exercises.
Use additional laboratory term in case of absence.
3. During the exams you may use printed list of formulas (formulas are published on **www.tele.pw.edu.pl/esism**)

2020	Luty		Marzec				Kwiecień				Maj				Czerwiec					
Poniedziałek		24	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15 ^{Pi}	22	29
Wtorek		25	3	10	17	24	31	7	14	21	28	5	12 ^{Pi}	19	26	2	9	16	23	30
Środa		26	4	11	18	25	1	8	15	22	29 ^{Pi}	6	13	20	27	3	10	17	24	1
Czwartek		27	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2
Piątek		28	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3
Sobota	22	29	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4
Niedziela	23	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5
		N/P	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N/P		