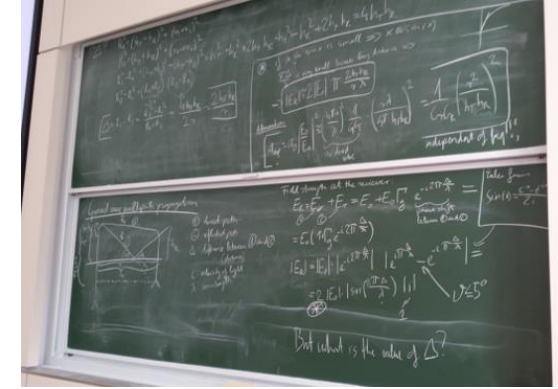
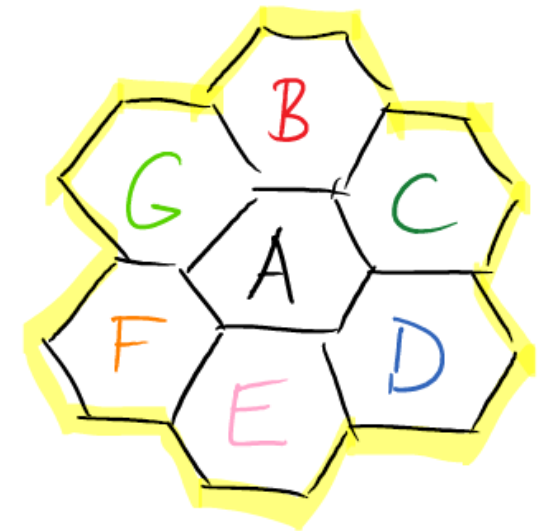
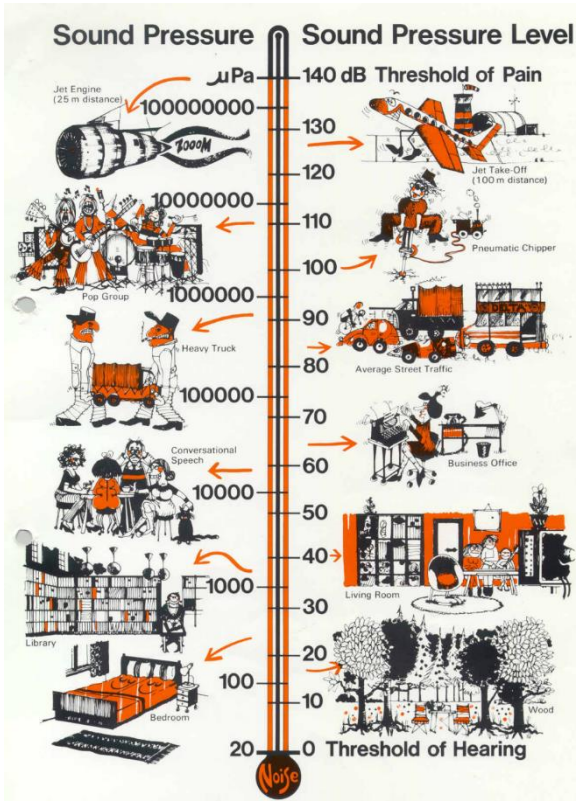




Infocommunications Introduction

2018 Spring



What is Infocommunication?

- *informatics + telecommunication*
- the science of information; it studies the structure, algorithms, behavior, and interactions of natural and artificial systems which store, process, access and communicate information
- communication at a distance by technological means, particularly through electrical signals or electromagnetic waves

Infocommunications – VITMAB03

- Course website:
<http://smartlab.tmit.bme.hu/education-infocommunications>
- Lectures
 - Monday 10-12, room I.B.146
- Practices (tutorial)
 - Thursday 14-16, room Q.B.f.10
 - 70% class presence is necessary!!! (catalog)
- Mid-term exam
 - 9th week, April 9 (?), 2018
 - (Apr 3-6 Spring holiday)

Department of Telecommunications and Media Informatics

BME-TMIT



Gábor Magyar

Course lecturers



Bálint Gyires-Tóth



Tamás Gábor Csapó



Péter Mihajlik

Topics

- Sound, hearing and speech
- Basic signal processing
- Sampling and quantization
- Analog modulation
- Digital baseband modulation
- Digital carrier modulation
- Error Detection Coding
- Error Correction Coding
- Radio, guided waves
- Light and vision
- Radio Communication
- Video Broadcasting
- GSM, Mobile communication

History /1

- 1753 – static charge transmission over cable
(ebonite stick / wool cloth -> cable -> elderberry balls)
- 1837 – Morse – telegraph
Information theory and encoding
- 1858 – the first trans-atlantic communications cable
Wired telecommunications
- 1876 – Thomas Alva Edison – carbon microphone
Modulation theory
- 1876 – Elisha Gray – A.G. Bell – telephone
- 1877 – Tivadar Puskás – telephone exchange
- 1877 – T.A. Edison – phonograph
Audio and video information storage
- 1887 – Alexander Popov – Nikola Tesla – Guglielmo Marconi - Radio

History /2

- 1901 – first trans-atlantic radio connection
- 1907 – amplification on telecommunication lines
- 1923 – Lakihegy, Hungary
first Hungarian radio news
- 1928 – Nyquist, sampling theorem
- 1936 – BBC, black/white TV experiment
- 1938 – Alec Reeves – Pulse-Code Modulation, PCM

History /3

- 1946 – ENIAC – first general purpose computer
- 1948 – transistor
- 1957 – László Kozma – first Hungarian digital computer
- 1962 – TELSTAR – first communication satellite
- 1971 – microprocessor
- 1977 – fiber cable
- 1979 – LAN
- 1981 – NMT, first cell-based mobile telephone network

