Week 1 – Study materials

Topics and where to find them:

- Digital signal processing intoduction and applications – Lecture notes: Week 1

- Discrete deterministic signal: Schaum – Chapter 1.2
  - Mathematical function representning some physical quantity, its domain are integer numbers.
- Signal manipulations: Schaum – Chapter 1.2.6
  - Basic operation on signals, such as delay, time scaling, reversal etc.
- Discrete-time systems: Schaum – Chapter 1.3
  - Mathematical operators, mapping one signal into another. Realization results into digital filter, such as audio equalizer.
- LTI/LSI systems (Linear Time/Shift-Invariant): Schaum – Chapter 1.3, page 8-10
  - Subset of discrete systems, which have special properties and their output is computed only through summation and multiplication.
- Unit Sample Response or Impulse Response: – Chapter 1.3, page 10
  - One of the models of the LTI systems, it is a unique response of the LTI system to a unit sample.
- Convolution: Schaum – Chapter 1.4, page 11
  - Basic operation in DSP (Digital Signal Processing), returns output of an LTI system given an input signal and an impulse response.
- Linear Constant Coefficient Difference Equation - Schaum – Chapter 1.5
  - Another model of an LTI system, defines system output as a recursive relation between input signal samples and possibly previous system output values.