

SYLLABUS: SIGNAL AND SYSTEM 2

Date / Revision August 22, 2017 / 22.08.17 /MaS
Faculty Engineering
Study Programm Mechatronik

SUBJECT: Signal and System 2

1 Basic Information

1.01	Subject Name	Signal and System 2
1.02	Semester	4
1.03	Level	2
1.04	SKS	2
1.05	Mandatory / Curriculum	Mandatory / D-08
1.06	Subject Code	SSYS
1.07	Subject Code	MTE-D-SSYS-4208
1.08	Year	2017 (7)
1.09	Quality Control	Final Test, see evaluation
1.10	Limitations	Min 12 and Max 32 students in one class
1.11	Combined with	ELE, BME
1.12	Perquisite	Applied Mathematics, Signal and System 1
1.13	Responsible	Dean of Engineering Faculty
1.14	Revision	22-08-2017/MaS

2 Description of Subject

The concepts of signals and systems arise in a wide area of science and technology of communications, aeronautics, circuit design, acoustics, seismology, biomedical engineering, energy generation and distributions system, chemical process control and speech processing. The technology development and algorithms of this subject grow rapidly. This course is an introduction to the basic concepts and theory of analog and digital signal processing. Students need to have a basic background of calculus as well as some experience in manipulating complex numbers and some exposure to differential equations. Prior exposure to the fundamentals of circuits for electrical engineers is helpful.

3 Objectives

- Introduces the concept of signals and systems
- introduce the Continuous- Time- and Discrete-Time Signals and their properties
- introduce the method of analysing of CT- and DT-Signals.

4 Competency

After having the course, students are expected have to:

- Have ability in parallel the methods of analysis for continuous-time and discrete-time signals and systems
- Have equal familiarity with techniques suitable for analyzing and synthesizing both continuous-time and discrete-time systems
- Develop insight and intuition the similarities and differences between continuous-time and discrete-time systems
- Understand the concept of frequency-domain analysis of signals and systems using Fourier analysis and the basic applications of filtering, sampling, communications, and feedback system

5 Learning Approach / Methodology

- Lectures/ Class contact (time-tabled) supplemented with interactive questions and answers;
- Discussion, sample problem, group work;
- Student Study Effort: homework/assignment; preparation for test/quizzes/ examination.

6 Evaluation

5.1	Absence maximum	25%
5.2	Participation in Discussion	05 Points
5.3	Homework / Classwork	05 Points
5.4	Presentation /Simulation	10 Poin
5.5	Daily Quiz	20 Points
5.6	Final Examination	60 Points
	Total	100 Points

7 Text Book and Reference

- 1 **Main Text Book:**
“Signals and Systems, 2nd Edition, 1998”, Authors: Alan V. Oppenheim, Publisher: rentice-Hall International.

2	Supplementary Text books: <ul style="list-style-type: none"> “Signals and Systems, 1st Edition, 2014”, Authors: Mahmood Nahvi, Publisher: McGraw Hill.

8 Content / Topics of Lecture

Week	Content/ Topics of Lecturing	Text Book	Remark
1			
2			
3-4			
4			
5			
6			
7			

8	MIDTERM SEMESTER BREAK		
9			
10			
11-12			
13			
14			
15			
15	Rehearsal and Tutorial: Rehearsal of all subject and students can ask for more detail.		
16	Final Examination		