Sabancı University
Faculty of Engineering and Natural Sciences

ENS 211 - SIGNALS

Summer, 2018
Course Information

Instructor:	Şuayb Ş. Arslan	Lecture Hours:	Th(14:00 − 16:50),F(9:00 − 11:50)
Email:	suaybarslan@gmail.com	Place:	TBD
TAs:	TBD	Phone:	+90 212 395 3735

Course Pages:

1. http://suaybarslan.com/teaching/ens211.html

Office Hours: After class, or by appointment, or post your questions in the forum provided on SUcourse.

Recitation Hours: Monday TBD time & place. Friday TBD time & place.

Reference Book: This is a the reference book that will be touched during the course. You are welcome to resort to other texts to help understand the material.

- James H. McClellan, Ronald W. Schafer and Mark A. Yoder, *Signal Processing First Pearson Education*, 2003.

Objectives: Major objectives of this course are:

- To utilize mathematics as a tool for describing and understanding signals and systems.

- To provide a broad introduction to signals.

- To comprehend linear time invariant (LTI) system fundamentals both in time and frequency domains.

Prerequisites: MATH 101

Tentative Course Outline:

> **Week 1:** Course Overview, Introduction (Chapter 1), Sinusoids, Complex Numbers, Complex Exponentials, Phasors (Chapter 2).
> **Week 2:** Spectrum representation and introduction to Fourier Series (Chapter 3)
> **Week 3:** Convolution, LTI Systems, FIR Filters (Chapter 5)
> **Week 4:** Frequency Response of FIR Filters (Chapter 6), Continuous-time signals and systems (Chapter 9)
> **Week 5:** Impulse response, Convolution revisited (Chapter 9), Frequency Response of Continuous-time LTI Systems (Chapter 10)
> **Week 6:** Continuous-time Fourier Transform (Chapter 11)
> **Week 7:** Filtering, Modulation, and Sampling (Chapter 12)

Grading Policy: Homework and quizzes (35%), Midterm (30%), Final (35%).

Important Dates:

Homeworks	Weekly
Midterm	End of 5th week.
Final Exam	August 11, 2018

Course amd Class Policy Guidelines:

- Attendance is not mandatory, but I strongly recommend active participation as this will help you get good grade, particularly if your preliminary grade falls near a borderline.

- There will not be a make-up exam. In case of health or other personal emergencies as valid reasons for qualification, related questions of the final will be counted as the missing midterm grade.

- We will use *SUCourse* to distribute problem sets and their solutions, and as a communication medium between you and the course admin team. If you have any problems accessing the course material on SUCourse, please let us know ASAP so we can have such problems fixed on time.

- We will gradually introduce MATLAB as a tool for seeing/hearing/plotting some of the signals we will learn about in class as well as for performing various computations and transformations on signals.

Academic Honesty: Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Violators will fail the course and corresponding legal options within the university plagiarism policy will be sought. Students shall avoid all forms of academic dishonesty, including but not limited to:

- *Plagiarism:* The use of another person's words without attribution and without enclosing the words in quotation marks. Plagiarism may also be defined as the act of taking the ideas or expression of ideas of another person and representing them as one's own, even if the original paper has been paraphrased or otherwise modified. A close or extended paraphrase may also be considered plagiarism even if the source is named.

- *Collusion:* When specifically prohibited in advance by the instructor, collaborating with another person in the preparation of notes, themes, reports or other written work offered for credit.

- *Cheating on an examination or quiz:* Giving or receiving information or using prepared material on an examination or quiz.

- *Falsification of data:* Manufacturing data, falsification of information, including providing false or misleading information, or selective use of data to support a particular conclusion or to avoid conducting actual research.