EE3210
Signals and Systems

Department of Electrical Engineering
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Syllabus Outline

- Signals and Systems in Time Domain
  Overview of Signals and Systems, Continuous-Time and Discrete-Time Signals, System Classification, Linear Time-Invariant System (LTI) Properties

- Signals and Systems in Frequency Domain
  Signal Representation using Fourier Series, Fourier Transform and discrete-time Fourier Transform, and their Properties, LTI System in Transform Domain

- Analysis of Signals and Systems
  Conversion between Continuous-Time and Discrete-Time Signals, Analysis of LTI Systems using z-Transform and Laplace Transform

Intended Learning Outcomes

You will learn what is "Signals and Systems", why it is important, and how it can be applied.

On completion of this course, you will be able to

- Classify continuous-time and discrete-time signals and systems as well as describe their properties.
- Describe and perform operations and transformations in different domains.
- Analyze signals and systems, and calculate LTI system input/output/responses using time-domain and transform methods.

Teaching Pattern

Date	LT-13 YEUNG	Remark
6 Sep.	Lecture 1	
13 Sep.	Lecture 2	
20 Sep.	Lecture 3	
27 Sep.	Lecture 4	
4 Oct.	Lecture 5	MATLAB Exercise 1 Due
11 Oct.	Lecture 6	Assignment 1 Due
18 Oct.	Lecture 7	Test 1
25 Oct.	Lecture 8	
1 Nov.	Lecture 9	
8 Nov.	Lecture 10	MATLAB Exercise 2 Due
15 Nov.	Lecture 11	Assignment 2 Due
22 Nov.	Lecture 12	Test 2
29 Nov.	Lecture 13	

Assessment

Coursework: 60%

- 2 Assignments: 10%
- 2 MATLAB Exercises: 10%
- 2 Tests: 40%

Examination: 40%

To pass the course, at least 30% of coursework AND examination marks are required. All tests and examination are open book format.

Act of academic dishonesty (e.g., plagiarism, submission for assessment of material that is not your own work) will be liable to disciplinary actions

https://www.cityu.edu.hk/pvdp/academic_honesty/rules_on_academic_honesty.htm

Book List

References:

1. A. V. Oppenheim and A. S. Willsky, ***Signals & Systems***, 2nd Edition, Prentice Hall, 1997
2. S. Haykin and B. Van Veen, ***Signals and Systems***, 2nd Edition, Wiley, 2003
3. M. N. O. Sadiku and W. H. Ali, ***Signals and Systems: A Primer with MATLAB***, CRC Press, 2016
4. H. C. So, ***Digital Signal Processing: Foundations, Transforms and Filters, with Hands-on MATLAB Illustrations***, McGraw-Hill, 2010