

EC 321 Signals and Systems**COURSE INFORMATION**

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
BA 224 EE 231	3	5	2	2	2	3

COURSE AIM

The course examines the concept of line spectrum as well as the continuous spectrum using FT. Additionally, it introduces the mathematical background required for the remainder of communication courses.

COURSE WEEKLY CONTENTS

- Week Number 1:* Introduction and types of signals and systems.
- Week Number 2:* Review of Fourier Transform – Properties of Fourier Transform
- Week Number 3:* (Continue) Properties of Fourier Transform
- Week Number 4:* Time and frequency convolution
- Week Number 5:* F.T of special functions
- Week Number 6:* F.T of periodic signals
- Week Number 7:* Sampling of signals, discrete time signals, 7th week exam
- Week Number 8:* Convolution of discrete time signals and DFT
- Week Number 9:* Spectral density and Correlation (Auto, Cross) of power and energy signals
- Week Number 10:* Hilbert transform / Complex and natural envelope
- Week Number 11:* System Impulse response and transfer function - System Characteristics: Linearity, Time Invariance, Stability, and Causality for continuous and discrete systems.
- Week Number 12:* Conditions for distortion-less transmission through stable system.
- Week Number 13:* Impulse response of discrete-time system and discrete convolution – discrete correlation-Auto-correlation & Cross-correlation of discrete signals
- Week Number 14:* Ideal LPF filters in time and frequency domains
- Week Number 15:* Ideal BPF filters in time and frequency domains
- Week Number 16:* Final Exam.

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	10	MARKS		→	30
		To be freely distributed among possible assessments					
8 to 12	←		20	MARKS		→	20
13 to 15	←		10	MARKS		→	10
16 or 17	40 Final						40
Total	Exams	Assign.	Quizzes	Reports	Present.	Lab.	100

REFERENCES

- Textbook** Charles L. Philips, John Parr and Eve Riskin "Signals, Systems and Transforms" 4th Ed. 2008, Prentice Hall
-
- Other** Alan V. Oppenheim "Signals and systems" Prentice Hall