

CONTENTS

CHAPTER	TITLE	PAGE NO.
ONE	INTRODUCTION TO SIGNALS, SIGNAL PROCESSING AND SYSTEMS	1
	1.1 Introduction	3
	1.2 Signals	4
	1.2.1. Classification of signals	5
	1.2.2. Characteristics of signals	9
	1.3. Signal processing	11
	1.3.1 Analog Signal Processing	12
	1.3.2 Digital Signal Processing	13
	1.3.3 Fourier Series and Transform	17
	1.4 Sound	21
	1.5 Orientation of work	26
	References	29
TWO	Microprocessor and PC Interfacing	30
	2.1 Introduction	32
	2.2 Microprocessor based system	32
	2.3 Hardware part for Microprocessor based signal processing.	33
	2.3.1 ADC 0804	34
	2.3.2 ADC 0809	35
	2.3.3 DAC 0808/1408	43
	2.4 Sound Card and personal computer as a processor.	43
	2.4.1 Microphone	46

	2.4.2 Sound Card	46
	2.4.3 Personal computer as digital signal processor	48
	2.4.4 MATLAB	49
	References	52
THREE	Signal Processing	54
	3.1 Introduction	56
	3.2 Steady state signal analysis	57
	3.2.1 Storage of low frequency signal	57
	3.2.2 Signal reproduction and frequency multiplication	58
	3.2.3 Spike suppression	60
	3.2.4 Clipping and clapping	60
	3.2.5 Waveform synthesis	62
	3.3 Transient signal analysis	65
	3.3.1 Storage of signal segments	67
	3.3.2 Signal analysis	67
	3.3.3 Male, female, children sound differentiation	72
	3.3.4 Energy and articulation	75
	References	87
FOUR	Summary and Conclusions	88
APPENDIX	Program listing	94
