



## **C.U.SHAH UNIVERSITY**

**FACULTY OF:** - Technology & Engineering  
**DEPARTMENT OF:** -Electrical Engineering  
**BRANCH:** Electrical & Electronics Engineering  
**SEMESTER:** - V  
**COURSE:-** B.Tech  
**CODE:** - 4TE05COM1  
**NAME** – Electronics Communication.

### Teaching & Evaluation Scheme

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hrs	Marks	Hrs	Pr/Viva	TW	Pr	
4TE05COM1	Electronics Communication	4	0	2	6	5	30	1.5	70	3	--	20	30	150

### OBJECTIVES

1. To introduce the students to the concepts of various Electrical advance communication circuits namely analogy signal, spectrum analysis, amputate modulation,
2. To study of modelling and mathematic modal of advance communication engineer and performance of system.
3. To study design and implementation of modelling circuits using Advance communication engineering
4. To study design and simulation of communication engineering.

### PREREQUISITES

1. Basics and fundamental communication engineering system and applied mathematics.

### COURSE OUTLINES

Sr. No.	Course Contents	Hours
1	<b>Signals and Spectra:</b> Introduction of Communication Systems, Classification of Signals, Signal Operations, Trigonometric and Exponential Fourier Series, Aperiodic signal representation by Fourier Integral, Fourier Transform, Signal Energy and Energy Spectral Density, Signal Power and Power Spectral Density.	12
2	<b>Amplitude Modulation:</b>	14

	<p>Amplitude modulation, DSBSC and SSB modulation and demodulation, Generation of Amplitude modulated wave, DSB-SC signal and SSB-SC signal, comparisons of various AM systems.</p> <p><b>Angle Modulation:</b></p> <p>Frequency modulation/demodulation, phase modulation/demodulation, Generation of FM waves, Interference, De-emphasis and Pre-emphasis filtering.</p>	
3	<p><b>Transmitter And Receiver:</b></p> <p>Block diagram of AM Transmitter and Receiver, Block diagram of FM Transmitter and Receiver.</p> <p><b>NOISE:</b> External noise, internal noise, noise calculations, signal to noise ratio, Noise in AM and FM systems.</p>	12
4	<p><b>Pulse And Digital Communication:</b></p> <p>Sampling Process, PAM, PWM, PPM, Elements of digital communication system, Analog to digital and digital to analog conversion, PCM, DPCM, Delta modulation/demodulation, Adaptive delta modulation/demodulation, Digital Modulation and Demodulation Techniques (ASK, PSK, FSK etc.).</p>	16

### Learning Outcomes

After the completion of this course the students would be able to:

1. To design and implement various communication engineering.
2. Design basic modulation technics.
3. Understand various advance analog and digital communication and engineering.

### Books Recommended

- 1 G. Kennedy and B. Davis, "Electronic Communication Systems", Tata McGraw Hill.
- 2 Simon Haykin, "Communication Systems", John Wiley and Sons.
- 3 Roy Blake, "Wireless Communication Technology", Thomson Asia Pvt. Ltd. Singapore.
- 4 B. P. Lathi, "Modern Analog and Digital Communication Systems", Oxford University Press.
- 5 Taub and Schilling, "Principles of Communication Systems", McGraw Hill. P. Chakrabarti, "A text book of Analog and Digital Communication", Dhanpat Rai and Co.