

## Lesson Plan

**Name of the Faculty** : Er. Sorabh Malhotra

**Discipline** : Electronics and Communication Engineering

**Semester** : 4<sup>th</sup>

**Subject** : **Basics of Analog Communication (ES-208A)**

**Lesson Plan Duration** : 15 weeks (from April, 2021 to July, 2021)

**\*\*Work Load (Lecture / Practical) per week (in hours) :** Lectures-03

Week	Theory	
	Lecture Day	Topic (including assignment / test)
1 <sup>st</sup>	1 <sup>st</sup>	Constituents of communication system
	2 <sup>nd</sup>	Modulation, Bandwidth requirement
	3 <sup>rd</sup>	Noise, Classification of noise, Resistor noise
2 <sup>nd</sup>	4 <sup>th</sup>	Multiple resistor noise sources, Noise Temperature, Noise bandwidth
	5 <sup>th</sup>	Noise figure, its calculation and measurement,
	6 <sup>th</sup>	Band pass noise representation,
3 <sup>rd</sup>	7 <sup>th</sup>	Noise calculation in Communication Systems
	8 <sup>th</sup>	Noise in Amplitude Modulated System
	9 <sup>th</sup>	Noise in angle modulated systems
4 <sup>th</sup>	10 <sup>th</sup>	Mathematical analysis of FM, Spectra of FM signals
	11 <sup>th</sup>	Narrow band FM, Wide band FM, Phase modulation
	12 <sup>th</sup>	Comparison of AM, FM & PM
5 <sup>th</sup>	13 <sup>th</sup>	Generation of Amplitude Modulation, Low level and high level modulation
	14 <sup>th</sup>	Basic principle of AM generation
	15 <sup>th</sup>	Square law modulation, Vander bijl modulation
6 <sup>th</sup>	16 <sup>th</sup>	Suppressed carrier AM generation (Balanced Modulator) ring Modulator
	17 <sup>th</sup>	Tuned Ratio Frequency (TRF) Receiver
	18 <sup>th</sup>	Super heterodyne Receiver
7 <sup>th</sup>	19 <sup>th</sup>	RF Amplifier
	20 <sup>th</sup>	Image Frequency Rejection
	21 <sup>st</sup>	Conversion and Mixers, ,
8 <sup>th</sup>	22 <sup>nd</sup>	Tracking & and Alignment
	23 <sup>rd</sup>	IF Amplifier, AM receiver characteristics
	24 <sup>th</sup>	AM detectors, Distortion in diode detectors

9 <sup>th</sup>	25 <sup>th</sup>	FM allocation standards
	26 <sup>th</sup>	Generation of FM by direct method
	27 <sup>th</sup>	Varactor diode Modulator,
10 <sup>th</sup>	28 <sup>th</sup>	Indirect generation of FM
	29 <sup>th</sup>	The Armstrong method RC phase shift method,
	30 <sup>th</sup>	Frequency stabilized reactance FM transmitter
11 <sup>th</sup>	31 <sup>st</sup>	FM stereo transmitter, Noise triangle
	32 <sup>nd</sup>	Foster seelay of phase discriminator
	33 <sup>rd</sup>	Ratio detector
12 <sup>th</sup>	34 <sup>th</sup>	Indirect method of FM demodulation
	35 <sup>th</sup>	FM detector using PLL, Pre-emphasis / de-emphasis, FM receiver, FM stereo receiver
	36 <sup>th</sup>	Pre-emphasis / de-emphasis, FM receiver
13 <sup>th</sup>	37 <sup>th</sup>	Advantages of SSB Transmission, Generation of SSB
	38 <sup>th</sup>	The Filter method The Phase Shift Method,
	39 <sup>th</sup>	The Third Method
14 <sup>th</sup>	40 <sup>th</sup>	Vestigial Side-band Modulation (VSB), VSB-SC
	41 <sup>st</sup>	Application of AM and FM in TV transmission
	42 <sup>nd</sup>	SSB Product Demodulator, Balanced Modulator as SSB Demodulator
15 <sup>th</sup>	43 <sup>rd</sup>	PAM
	44 <sup>th</sup>	PWM
	45 <sup>th</sup>	PPM

**Er. Sorabh Malhotra**

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