

## Lesson Plan

**Name of the Faculty** : Er. Sarbjeet Singh

**Discipline** : Electronics and Communication Engineering

**Semester** : 8<sup>th</sup>

**Subject** : Radar Engineering (ECE-422N)

**Lesson Plan Duration** : 15 weeks (from January, 2020 to April, 2020)

**\*\*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>	Introduction to RADAR
	2 <sup>nd</sup>	Block diagram & Operation
	3 <sup>rd</sup>	Applications of Radar
2 <sup>nd</sup>	4 <sup>th</sup>	Radar equation
	5 <sup>th</sup>	Minimum detectable signal
	6 <sup>th</sup>	Receiver noise and Signal to noise ratio
3 <sup>rd</sup>	7 <sup>th</sup>	Transmitter power
	8 <sup>th</sup>	Pulse repetition frequency & range ambiguities
	9 <sup>th</sup>	System Losses
4 <sup>th</sup>	10 <sup>th</sup>	System Losses
	11 <sup>th</sup>	Propagation effects
	12 <sup>th</sup>	<b>REVISION 1<sup>st</sup> UNIT/Class Test</b>
5 <sup>th</sup>	13 <sup>th</sup>	CW & Frequency modulated Radar
	14 <sup>th</sup>	Doppler effect, CW Radar
	15 <sup>th</sup>	FM-CW Radar
6 <sup>th</sup>	16 <sup>th</sup>	Multiple frequency CW RADAR
	17 <sup>th</sup>	Introduction to MTI & Pulse Doppler Radar
	18 <sup>th</sup>	Delay line cancellers
7 <sup>th</sup>	19 <sup>th</sup>	Double Delay Line cancellers
	20 <sup>th</sup>	Multiple or Staggered Pulse repetition frequencies

	21 <sup>st</sup>	Range-Gated Doppler Filters,
8 <sup>th</sup>	22 <sup>nd</sup>	Other MTI delay line
	23 <sup>rd</sup>	Limitation of MTI performance
	24 <sup>th</sup>	Noncoherent MTI Pulse Doppler Radar
9 <sup>th</sup>	25 <sup>th</sup>	MTI from a moving platform
	26 <sup>th</sup>	MTI from a moving platform
	27 <sup>th</sup>	<b>REVISION 2<sup>nd</sup> UNIT</b>
10 <sup>th</sup>	28 <sup>th</sup>	<b>Class Test unit-2</b>
	29 <sup>th</sup>	Tracking with Radar
	30 <sup>th</sup>	Sequential Lobbing
11 <sup>th</sup>	31 <sup>st</sup>	Conical Scan
	32 <sup>nd</sup>	Monopulse Tracking Radar
	33 <sup>rd</sup>	Tracking in range
12 <sup>th</sup>	34 <sup>th</sup>	Acquisition
	35 <sup>th</sup>	<b>REVISION 3<sup>rd</sup> UNIT</b>
	36 <sup>th</sup>	<b>Class Test-unit 3<sup>rd</sup></b>
13 <sup>th</sup>	37 <sup>th</sup>	Radar Receivers
	38 <sup>th</sup>	Noise figure
	39 <sup>th</sup>	Mixer
14 <sup>th</sup>	40 <sup>th</sup>	Low noise front ends
	41 <sup>st</sup>	Radar Displays
	42 <sup>nd</sup>	Duplexer
15 <sup>th</sup>	43 <sup>rd</sup>	Receiver Protectors
	44 <sup>th</sup>	<b>REVISION 4<sup>th</sup> UNIT</b>
	45 <sup>th</sup>	<b>Class Test Unit-4<sup>th</sup></b>

(Er. Sarbjeet Singh)

Assistant Professor

ECE Department

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