Course Type	Course Code	Name of the Course	L	T	P	Credits
DE	NECD536	Phased Array Antennas	3	0	0	3

Course Objective
The course aims to provide ideas about key issues of phased array antennas and its applications.
Learning Outcomes
This course provides ideas about different components used in phased array systems, design methods of the system, and application sides.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Introduction, Basic array characteristics: Uniformly Excited Linear Arrays, Planar Arrays, Beam Steering and Quantization Lobes, Directivity.	7	This unit will provide knowledge about basics of array characteristics.
2	Linear Array Pattern Synthesis: Introduction, Dolph–Chebyshev Arrays, Taylor One-Parameter Distribution, Taylor N-Bar Aperture Distribution, Low-Sidelobe Distributions, Villeneuve N-Bar Array Distribution, Difference Patterns, Sidelobe Envelope Shaping, Shaped Beam Synthesis, Thinned Arrays.	7	This unit will provide concepts about basics of synthesis of linear array.
3	Planar and Circular Array Pattern Synthesis: Circular Planar Arrays, Noncircular Apertures.	7	This unit will provide ideas about basics of synthesis of planar and circular array.
4	Array Elements: Dipoles, Waveguide Slots, TEM Horns, Microstrip Patches.	7	It gives an introduction about array elements used in phased array systems.
5	Array Feeds: Series Feeds, Shunt (Parallel) Feeds, Two-Dimensional Feeds, Photonic Feed Systems, Systematic Errors.	7	It throws light on array feeds.
6	Mutual coupling, finite array, and super directive arrays.	7	Here, different issues on mutual coupling, finite array, and super directive arrays will be highlighted.
	Total	**42**	

Text Book:

1. Phased Array Antennas, by R. C. Hansen, Wiley.

Reference Book:

1. Antenna Theory-Analysis and design, C. A. Balanis, Wiley Student Edition.