

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Electronics & Communication)
Semester: III
Syllabus with Effect from: June - 2012

Paper Code: PS03EELE02	Total Credit: 4
Title Of Paper: Radar And Navigational Aids	

Unit	Description in detail	Weightage (%)
I	Radar Equation, Radar Block Diagram and operation, Prediction of Range Performance, Minimum Detectable Signal, Receiver Noise, Transmitter Power, PRE and Range ambiguities, Antenna parameters	20%
II	CW & FM Radar, Doppler Effect, CW, Radar, FMCW Radar, Introduction to MTI & Pulse Doppler Radar, Delay line Cancellers, Staggered or Multiple PRF. Introduction to Tracking Radar, Sequential Lobing, Comical Scan, Monopulse TR	20%
III	Basic Concepts of Phased Array Antenna, Phase Shifters, Frequency-scan arrays, Array elements, Feeds for Arrays. Other Radars: Synthetic Aperture Radar, HF over-the-horizon Radar, Air-Surveillance Radar, Height-Finder and 3-D Radars.	20%
IV	Radio Direction Finding, Radio Ranges, Hyperbolic System of Navigation, DME and TACAN, Aids to Approach and Landing, Doppler Navigation, Satellite Navigation, Global Positioning System.	20%

Basic Text & Reference Books:-

- Introduction to Radar Systems: M. I. Skolnik, McGraw Hill Pub., International edition.
- Elements of Electronic Navigation: N. S. Nagaraja, TMH Pub., Co. New Delhi.

