S.No.	Name of Books/ Authors	Year of Publication / Reprint
1.	Radar observations of atmosphere by L.J.Battan, Univ. Chicago Press,	1973
2.	Radio Meteorology by B.R.Bean and E.J.Dutton, U.S.Govt. Press	1980
3.	An Introduction to dynamics Meteorology by James R. Hotton, Wiley	1985
4.	A first course in Atmospheric Thermodynamics by Petty G.W. Cambridge University Press	1985

1. Subject Code: **EP-416** Course Title: **Plasma Science and Technology-II**
2. Contact Hours : L : 3 T : 1 P : 0
3. Examination Duration (Hrs.) : Theory : 3 Practical : 0
4. Relative Weight : CWS : 25 PRS : 0 MTE : 25 ETE : 50 PRE : 0
5. Credits : 4
6. Semester : EVEN
7. Subject Area : DEC-8
8. Pre-requisite : EP-425 course in Plasma Science and Technology-I
9. Objective : * The course objective is to provide the students with Detailed knowledge about plasmas physics with main emphasis on plasma sources,
   * plasma diagnostics and applications for materials (thin film deposition, ion implantation and industrial use)
   * nano particle synthesis (as a tool for the tailoring of surfaces of materials to be used in advanced medical diagnostic and health care products)
10. Details of Course :

S. No.	Contents	Contact Hours
1.	**Plasma processing of materials** Synthesis of carbon nanotubes (CNTs) and Graphenes using plasma enhanced CVD and microwave plasma enhanced CVD, growth mechanism, surface plasmonics (sensors and devices)	8
2.	**Complex Plasmas** Dusty and strongly coupled plasmas, dust and colloidal crystals, phase transitions, Applications of dusty plasma crystals in environmental sciences, Kinetic theory of dusty plasmas. Plasma Electronics (Field Emission properties): CNTs and Graphenes, SWNT-FET, Mechanical Applications: NEMS and MEMS	10
3.	**Plasma Medicines and Bio-medical Applications** Non-thermal plasma sterilization of different surfaces: mechanisms of plasma sterilization, effects of atmospheric-pressure air plasma on bacteria and cells: direct versus indirect treatment, surface versus in-depth treatment, non-thermal plasma sterilization of air streams: kinetics of plasma inactivation of biological micro-organisms, plasma cleaning and sterilization of water: special discharges in liquid water applied for its cleaning and non-thermal plasma treatment of skin diseases, role of plasma in cancer treatment.	8
4.	**Applications to RF heating and current drive** Tokamak operation, electron cyclotron heating, ion-cyclotron heating, lower hybrid heating, lower hybrid heating and current drive, neutral beam heating.	8
5.	**Technical Applications** Plasma etching, plasma cutting and deposition in the microelectronics industry, ion implantation, electrostatic dust collectors, plasma waste treatment, plasma spray deposition, plasma rocket propulsion, plasma-chemical ozone production.	8
	Total	**42**