11.Suggested Books

S.No.	Name of Books/ Authors	Year of Publication/ Reprint
1.	Plasma Chemistry by Alexander Fridman Cambridge University Press	2008
2.	Kinetics of Complex plasmas by M.S. Sodha Springer 2014	2014
3.	Introduction to dusty plasma physics by P.K. Shukla and A A Mamun /IOP publishing Ltd.	2002
4.	Plasma Physics and Engineering by A. Fried and L.A. Kennedy Taylor and Francis Group	2011

1. Subject Code: **EP-418**   Course Title: **Digital Signal Processing**
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: Fundamentals of Nuclear Physics
9. Objective: To impart the knowledge on signal processing and DFT.
10. Details of Course :

11. Suggested Books

S.No	Name of Books/Authors	Yearof Publication/ Reprint
1	Oppenhiem, A.V &Sachsfer R.W, Discrete Time Signal Processing	1989
2	Proakis, J.G &Manolakis, D.G, Digital Signal Processing	1992
3	Rabiner, L.R. and Gold B. , Theory and applications of DSP Prentice Hall (India)	1975
4	Oppenhiem, Alan V &Willsky Alan S, Signals and Systems, Prentice Hall (India)	1997
5	Johnson, Johnny R. , Introduction to Digital Signal Processing, Prentice Hall (India)	1989

S. No.	Contents	Contact Hours
1.	Introduction, Limitation of analog signal processing, Advantage digital signal processing, discrete time characterization of signals & systems some elementary discrete time sequences and systems, concepts of stability, causality, linearity time invariance and memory, linear time invariant systems, linear constant coefficient difference equations. Frequency domain representation of discrete time signal and systems complex exponentials as eigen function of LTI systems, Fourier transform of sequences.	8
2.	Processing of continuous time signals Discrete time processing of continuous time signals and vice – versa; decimation &interpolation ; changing the sampling rate by integer and non integer factors using discrete time processing .	8
3.	Discrete fourier transform DFT and its properties ; linear, periodic and circular convolution , linear filtering methods based on DFT, filtering of long data sequences; fast Fourier transform algorithm using using decimation in time and decimation in frequency techniques ; linear filtering approaches to computation of DFT.	8
4.	Transform analysis of LTI systems Frequency response of LTI systems, system function for system characterized by linear constant coefficient difference equations. Relationship between magnitude and phase; all pass systems, minimum phase systems. Structure for discrete time systems Signal flow graph representation, transposed forms, lattice structures	6
5	Design of digital filters Linear phase FIR filters; FIR differentiator and Hilbert transforms, FIR filter design by impulse invariance, bilinear transformation; Matched Z – transformation ; frequency transformation in the analog and digital domain.	6
6	Finite precision effects Fixed point and floating point representations, effect of coefficient quantization, effect of round off noise in digital filters, limit cycles. Digital signal processors Architecture and various features of TMS/ADSP, series of digital signal processors.	6
	Total	**42**

DRAFT SCHEME OF STUDY
(Year 2,1,4 B. Tech Program

1. Subject code: **EP- 420** Course title: **Fuzzy Logic and Neural Network**
2. Contact Hours: L: 3 T: 1 P: 0
3. Examination Duration (Hrs): Theory: 3 Practical: 0
4. Relative Weight: CWS: 25, PRS:--, MTE: 25, ETE: 50, PRE: --
5. Credits: 4
6. Semester: EVEN
7. Subject area: DEC-8
8. Pre-requisite: Basic knowledge of networking
9. Objective: This course will provide understanding of the Neural networks and its applications

10. Detail of Course: