Laxdu Singh Charitable Trust's (Regd.)
THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY
(Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai*)
(Accredited Programmes by National Board of Accreditation, New Delhi**)
A - Block, Thakur Educational Campus, Shyamnarayan Thakur Marg, Thakur Village, Kandivali (East), Mumbai - 400 101.
Tel.: 6730 8000 / 8106 / 8107
Fax : 2846 1890
Email : tcet@thakureducation.org
Website : www.tcetmumbai.in • www.thakureducation.org
*Permanent Affiliated UG Programmes : • Computer Engineering • Electronics & Telecommunication Engineering • Information Technology (w.e.f.: A.Y. 2015-16 onwards)
**1st time Accredited UG Programmes : • Computer Engineering • Electronics & Telecommunication Engineering • Information Technology
**2nd time Accredited UG Programmes : • Computer Engineering • Electronics & Telecommunication Engineering • Information Technology • Electronics Engineering (3 years w.e.f.: 01-07-2016)
ISO 9001 : 2008 Certified

Semester Plan
(Theory)

Semester: VII Course: BE (EXTC)

Subject: NEURAL NETWORKS AND FUZZY LOGIC Class: A

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1		L1.1	SOP Theory	Chalk & board, ppt	12/07/17		
2		L1.2	SOP Practical	Chalk & board, ppt	12/07/17		
3		L1.3	NNFL (OBE)	Chalk & board,ppt	12/07/17		
4	M1	L1.4	Introduction to neural networks and fuzzy logic	Chalk & board	13/07/17	Simon Haykin, "Neural Network- A Comprehensive Foundation"	
5		L1.5	Biological neurons and Artificial Neural network	Chalk & board	14/07/17	Simon Haykin, "Neural Network- A Comprehensive Foundation	
6		L2.1	McCulloch and Pitts models of neuron	Chalk & board	19/07/17		

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
7		L2.2	Types of activation functions	Chalk & board	20/07/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
8		L3.1	Neural networks architectures	Chalk & board	26/07/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
9		L3.2	Linearly separable and linearly non-separable systems and their examples	Chalk & board	26/07/17		
10	M1	L3.3	Numericals on McCulloch and Pitts models	Chalk & board	27/07/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
11		L3.4	Supervised Learning and Unsupervised Learning Neural Networks	Chalk & board	28/07/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
12	M2	L4.1	Single layer perception and multilayer perceptron neural networks, their architecture	Chalk & board	02/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
13		L4.2	Error back propagation algorithm,	Chalk & board	02/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
14		L4.3	learning factors, step learning	Chalk & board	04/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computin	
15		L5.1	Momentum learning	Chalk & board	09/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
16	M2	L5.2	Training, testing and cross-validation data sets for design	Chalk & board	09/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
17		L5.3	Numerical Discussion	Chalk & board	10/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
18	M3 .	L5.4	Competitive learning networks, kohonen self-organizing networks	Chalk & board	11/08/17	Simon Haykin, "Neural Network- A Comprehensive Foundation "	
19		L6.1	K-means algorithms	Chalk & board	16/08/17	Simon Haykin, "Neural Network- A Comprehensive Foundation "	
20		L6.2	LMS algorithms	Chalk & board	16/08/17	Simon Haykin, "Neural Network- A Comprehensive Foundation "	
21		L6.3	RBF neural network,	Chalk & board	18/08/17		
22		L7.1	Comparison of RBF and MLP networks Learning	Chalk & board	24/08/17		
23		L8.1	Vector Quantization neural network	Chalk & board	30/08/17		
24	M3	L8.2	Problem on Vector Quantization	Chalk & board	30/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
25		L8.3	Hebbian learning	Chalk & board	31/08/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
26		L8.4	Hopfield networks	Chalk & board	01/09/17		
27	M4	L9.1	Applications of Neural Networks	Chalk & board	06/09/17	Simon Haykin, "Neural Network- A Comprehensive Foundation "	
28		L9.2	Pattern classification	Chalk & board	06/09/17		
29		L9.3	Handwritten character recognition	Chalk & board	07/09/17		
30		L9.4	Face recognition and Image compression and decompression	Chalk & board	08/09/17		
31		L10.1	Basic Fuzzy logic theory	Chalk & board	13/09/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing"	
32		L10.2	Fuzzy sets and their properties	Chalk & board	13/09/17		
33	M4	L10.3	Operations on fuzzy sets	Chalk & board	14/09/17		
34	M5	L10.4	Fuzzy relation and its numerical	Chalk & board	15/09/17	S.N Sivanandan S.N Deepa " Princples of Soft	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
35		L11.1	operations on fuzzy relations and its numerical	Chalk & board	20/09/17	Computing	
36		L11.2	Problems on fuzzy relation and operations on fuzzy relations and extension principle	Chalk & board	20/09/17		
37		L11.3	Fuzzy membership functions	Chalk & board	21/09/17		
38		L11.4	Fuzzy linguistic variables	Chalk & board	22/09/17		
39		L12.1	Fuzzy rules	Chalk & board	04/10/17		
40		L12.2	Fuzzy reasoning	Chalk & board	04/10/17		
41		L12.3	Fuzzification and its methods	Chalk & board	05/10/17		
42		L12.3	Defuzzification and its methods	Chalk & board	06/10/17		
43	M5	L13.1	Fuzzy inference systems, Mamdani Fuzzy models,	Chalk & board	12/10/17	S.N Sivanandan S.N Deepa " Princples of Soft Computing	
44		L13.2	Fuzzy knowledge based controllers	Chalk & board	13/10/17		

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
45	M6	L14.1	Fuzzy pattern recognition	Chalk & board	18/10/17		
Remark:: Course:		Syllabus Coverage:		Practice Session:		Beyond Syllabus:	
No. of (lectures planned)/(lecture taken):45							

Recommended Books:

1. S. Rajsekaran and G. A. Vijaylakshmi Pai, " *Neural Networks, Fuzzy Logic, and Genetic Algorithms*", PHI
2. Simon Haykin, "*Neural Network- A Comprehensive Foundation*", Pearson Education
3. S. N. Sivanandam, S. Sumathi, and S. N. Deepa, "*Principles of Soft Computing*" , Wiley India Publications
4. Thimothy J. Ross, "*Fuzzy Logic with Engineering Applications*", Wiley India Publications
5. Laurence Fausett, "*Fundamentals of Neural Networks*", Pearson Education
6. S. N. Sivanandam, S. Sumathi, and S. N. Deepa, "*Introduction to Neural Network Using MATLAB",* Tata McGraw-Hill Publications
7. Bart Kosko, "*Neural networks and Fuzzy Systems"*, Pearson Education

Sd/-	sd/-	sd/-
(Dr. Sangeeta Mishra)	(Dr.Vinitkumar Dongre)	(Dr.R.R.Sedamkar)
Name & Signature of Faculty	Signature of HOD	Signature of Principal /Dean (Academics)
Date:	Date:	Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non –digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.