Semester Plan
(Theory)

TCET/FRM/IP-02/09 **Revision: A**

Semester: VII **Course: CMPN**
Subject: CPE7025: Soft Computing **Class: B.E CMPN -A+B**

Sr.No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Laws of set theory, Power set and Products Relations, Paths and Digraphs. Properties and types of binary relations. Operations on relations, Closures, Warshall"s algorithm. Equivalence and partial ordered relations, Functions: Types of functions	6 hours	Self Learning/ Revision	**Textbooks:** 1.BernadKolman, Robert Busby, Sharon Cutler Ross, Nadeem Rehman, "Discrete Mathematical Structures", Pearson Education. 2. C.L.Liu, Elements of Discrete Mathematics, second edition 1985, McGraw Hill BookCompany, Reprinted 2000.

Class Room Teaching

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,Introduction to Soft Computing,	Power point presentation, Chalk & Board	10/7/2017	1.1 1.2 1.3 1.4 1.5	
2	-	L1.2	SOP-OBE: Application of Soft Computing	Power point presentation, Chalk & Board	11/7/2017	1.1 1.2 1.6 1.7 1.8	
3	Module 2	L3.1	Basics of Neural Networks:	Power point presentation, Chalk & Board	18/7/2017 20/7/17	1.5	
4	Module 2	L3.2	Introduction to Neural Networks McCulloch Pitt model,	Chalk & Board, Animation	19/7/2017 21/7/17	1.5	
5	Module 2	L3.3	Supervised Learning algorithms:	Chalk & Board, Animation	25/7/2017 26/7/17	1.5	
6	Module 2	L3.4	Perceptron (Single Layer, Multi layer)	Power point presentation, Chalk & Board	26/7/2017 27/7/17	1.1	
7	Module 2	L3.1	Linear separability	Power point presentation, Chalk & Board	1/8/2017 2/8/17	1.5	
8	Module 2	L3.2	Delta learning rule	Power point presentation, Chalk & Board	2/8/2017 3/8/17	1.5	
9	Module 2	L3.3	Back Propagation algorithm	Chalk & Board, Animation	8/8/2017 9/8/2017	1.5	
10	Module 2	L3.4	Un-Supervised Learning algorithms: Hebbian Learning	Power point presentation, Chalk & Board	9/8/2017 10/8/2017	1.5	

11	Module 2	L3.5	Hebbian Learning	Power point presentation, Chalk & Board	16/8/17 16/8 17	1.1	
12	Module 2	L3.6	Hebbian Learning	Chalk & Board, Animation	19/8/17 24/8/17	1.5	
13	Module 2	L3.7	Winner take all	Power point presentation, Chalk & Board	30/8/17 30/8/17	1.5	
14	Module 2	L3.8	Self Organizing Maps	Chalk & Board, Animation	6/9/17 31/8/17	1.5	
15	Module 3	L3.9	Self Organizing Maps	Chalk & Board, Animation	6/9/2017 7/9/17	1.5	
16	Module 3	L3.10	Learning Vector Quantization.	Power point presentation, Chalk & Board	12/9/2017 13/9/17	1.5	
17	Module 4	L4.11	Introduction to Hybrid Systems	Chalk & Board, Animation	13/9/17 14/9/17	1.2	
18	Module 4	L4.12	Introduction to Hybrid Systems,	Chalk & Board, Animation	16/9/17 16/9/17	1.2	
19	Module 4	L5.1	Adaptive Neuro Fuzzy Inference System(ANFIS).	Chalk & Board, Animation	16/9/17 16/9/17	1.2	
20	Module 4	L5.2	Adaptive Neuro Fuzzy Inference System(ANFIS).	Power point presentation, Chalk & Board	19/9/17 20/9/17	1.2	
21	Module 5	L5.3	Derivative based optimization- Steepest Descent	Chalk & Board, Animation	20/9/17 20/9/17	1.5	
22	Module 5	L5.4	Newton method.	Chalk & Board, Animation	26/9/17 3/10/17	1.5	
23	Module 5	L5.5	Derivative free optimization	Chalk & Board, Animation	4/10/2017 4/10/17	1.5	
24	Module 5	L5.6	Introduction to Evolutionary Concepts.	Chalk & Board, Animation	7/10/2017 5/10/17	1.5	
25	-	L6.3	Revision	Power point presentation, Chalk & Board	7/10/2017	1.5	

Remark:Total 50 leacture			
Course: BE CMPN	Syllabus Coverage: Planned :50 Completed:	Practice Session: 1	**Content Beyond Syllabus:** Artificial Intelligence

No. of (lectures planned)/(lecture taken): 50

Sr.No.	Prerequisite/ Bridge course:	Duration (Week	Modes of	Recommended Sources
	Advanced course: Neural Networks for Machine Learning	20 Hours	Online course videos with Hands on Training	**Web sources:** 1. https://www.coursera.org/learn/neural-networks **Textbook reference:** 1. Peter Harrington "Machine Learning In Action", DreamTech Press

Text Books:

1.1 Timothy J.Ross "Fuzzy Logic With Engineering Applications" Wiley.
1.2 S.N.Sivanandam, S.N.Deepa "Principles of Soft Computing" Second Edition, Wiley Publication.
1.3 S.Rajasekaran and G.A.Vijayalakshmi Pai "Neural Networks, Fuzzy Logic and Genetic Algorithms" PHI Learning.
1.4 J.-S.R.Jang "Neuro-Fuzzy and Soft Computing" PHI 2003.
1.5 Jacek.M.Zurada "Introduction to Artificial Neural Sytems" Jaico Publishing House.

Reference Books:

1.6Satish Kumar "Neural Networks A Classroom Approach" Tata McGrawHill.
1.7 Zimmermann H.S "Fuzzy Set Theory and its Applications" Kluwer Academic Publishers.
1.8 Davis E.Goldberg, "Genetic Algorithms: Search, Optimization and Machine Learning",Addison Wesley, N.Y., 1989.

Digital Reference:

3.1 www.nptel.ac.in
3.2 http://www.e-booksdirectory.com/details.php?ebook=5286

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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)
8. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.
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