

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Lecture Plan

Session:	15-16
Semester:	Odd
Name of Faculty:	Dr. Lata Gidwani
Department:	Electrical Engg.
Course Name and Number:	M.Tech III Sem.
Name of Subject (with code):	FLEXIBLE AC TRANSMISSION SYSTEMS
Batch Name/Discipline:	

Lecture Plan (FLEXIBLE AC TRANSMISSION SYSTEMS)

S.No.	Lecture No.	Topics Covered
1	Lecture 1	Problems of AC transmission systems,
2	Lecture 2	Power flow in parallel paths and meshed system
3	Lecture 3	Factors limiting loading capability
4	Lecture 4	Stability consideration. Power flow control of an ac transmission line
5	Lecture 5	Stability consideration. Power flow control of an ac transmission line
6	Lecture 6	Basic types of facts controllers. Advantages of FACTS technology
7	Lecture 7	Basic concept of voltage-sourced converters,
8	Lecture 8	Single and three phase bridge converters.
9	Lecture 9	Introduction to power factor control.
10	Lecture 10	Transformer connections for 12- pulse, 24 pulse and 48 pulse operations.
11	Lecture 11	Transformer connections for 12- pulse, 24 pulse and 48 pulse operations.
12	Lecture 12	Midpoint and end point voltage regulation of transmission line, and stability improvement.
13	Lecture 13	Midpoint and end point voltage regulation of transmission line, and stability improvement.
14	Lecture 14	Basic operating principle of Static Synchronous Compensators (STATCOM).
15	Lecture 15	Basic operating principle of Static Synchronous Compensators (STATCOM).

16	Lecture 16	Comparison between STATCOM and SVC.
17	Lecture 17	Concept of series capacitive compensation,
18	Lecture 18	Voltage and transient stabilities, power oscillation and sub synchronous oscillation damping.
19	Lecture 19	Voltage and transient stabilities, power oscillation and sub synchronous oscillation damping.
20	Lecture 20	Introduction to thyristor switched series capacitor (TSSC),
21	Lecture 21	Thyristor controlled series capacitor (TCSC), and static synchronous series compensator-operation, characteristics and applications.
22	Lecture 22	Thyristor controlled series capacitor (TCSC), and static synchronous series compensator-operation, characteristics and applications.
23	Lecture 23	Thyristor controlled series capacitor (TCSC), and static synchronous series compensator-operation, characteristics and applications.
24	Lecture 24	Thyristor controlled series capacitor (TCSC), and static synchronous series compensator-operation, characteristics and applications.
25	Lecture 25	Voltage and phase angle regulation.
26	Lecture 26	Power flow control and improvement of stability by phase angle regulator.
27	Lecture 27	Power flow control and improvement of stability by phase angle regulator.
28	Lecture 28	Introduction to thyristor controlled voltage and phase angle regulators (TCVR and TCPAR).
29	Lecture 29	Introduction to thyristor controlled voltage and phase angle regulators (TCVR and TCPAR).
30	Lecture 30	ii) Introduction to thyristor controlled braking resistor and thyristor controlled voltage limiter.
31	Lecture 31	ii) Introduction to thyristor controlled braking resistor and thyristor controlled voltage limiter.
32	Lecture 32	ii) Introduction to thyristor controlled braking resistor and thyristor controlled voltage limiter.
33	Lecture 33	Unified Power Flow Controller (UPFC),
34	Lecture 34	basic operating principles, conventional transmission control capabilities.
35	Lecture 35	basic operating principles, conventional transmission control capabilities.

36	Lecture 36	Comparison of UPFC to series compensators and phase angle regulator.
37	Lecture 37	Applications of UPFC.
38	Lecture 38	Interline Power Flow Controller (IPFC),
39	Lecture 39	Basic operating principles and characteristics.
40	Lecture 40	Applications of IPFC.

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Lecture Plan	
Session:	15-16
Semester:	Odd
Name of Faculty:	Dr. Lata Gidwani
Department:	Electrical Engg.
Course Name and Number:	B.Tech VII Sem.
Name of Subject (with code):	ARTIFICIAL INTELLIGENCE TECHNIQUES
Batch Name/Discipline:	

Lecture Plan (ARTIFICIAL INTELLIGENCE TECHNIQUES)

S.No.	Lecture No.	Topics Covered
1	Lecture 1	Introduction to AI and knowledge based Expert systems
2	Lecture 2	Introduction to AI and knowledge based Expert systems
3	Lecture 3	Introduction, Importance and Definition of AI, ES, ES building tools and shells.
4	Lecture 4	Introduction, Importance and Definition of AI, ES, ES building tools and shells.
5	Lecture 5	Introduction, Importance and Definition of AI, ES, ES building tools and shells.
6	Lecture 6	Concept of knowledge,
7	Lecture 7	Representation of knowledge using logics rules, frames.
8	Lecture 8	Representation of knowledge using logics rules, frames.
9	Lecture 9	Procedural versus. Declarative knowledge,
10	Lecture 10	Forward versus backward chaining

11	Lecture 11	Concept of heuristic search
12	Lecture 12	Search techniques depth first search,
13	Lecture 13	Search techniques depth first search,
14	Lecture 14	Breath first search, Generate & test hill climbing, best first search.
15	Lecture 15	Breath first search, Generate & test hill climbing, best first search.
16	Lecture 16	Breath first search, Generate & test hill climbing, best first search.
17	Lecture 17	Biological Neurons and synapses,
18	Lecture 18	Biological Neurons and synapses
19	Lecture 19	Characteristics Artificial Neural Networks,
20	Lecture 20	Types of activation functions.
21	Lecture 21	Perception representation,.
22	Lecture 22	Limitations of perceptrons
23	Lecture 23	Single layer and multiplayer perceptrons.
24	Lecture 24	Single layer and multiplayer perceptrons.
25	Lecture 25	Perceptron learning algorithms.
26	Lecture 26	Perceptron learning algorithms.
27	Lecture 27	Supervised learning,
28	Lecture 28	Supervised learning,
29	Lecture 29	Back propagation algorithm,
30	Lecture 30	Back propagation algorithm,
31	Lecture 31	Unsupervised learning, Kohonen's top field network & Algorithm.
32	Lecture 32	Unsupervised learning, Kohonen's top field network & Algorithm.
33	Lecture 33	Unsupervised learning, Kohonen's top field network & Algorithm.
34	Lecture 34	Fuzzy logic concepts,

35	Lecture 35	Fuzzy relation and membership functions,
36	Lecture 36	Defuzzification, Fuzzy controllers,
37	Lecture 37	Defuzzification, Fuzzy controllers,
38	Lecture 38	Genetic Algorithm: concepts, coding, reproduction, crossover, mutation, scaling and fitness.
39	Lecture 39	Genetic Algorithm: concepts, coding, reproduction, crossover, mutation, scaling and fitness.
40	Lecture 40	Genetic Algorithm: concepts, coding, reproduction, crossover, mutation, scaling and fitness.