

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA

Semester: 2nd Sem. M-Tech
 Session: Jan/2016-17
 Branch/Course: Electrical Engg. (PSE) Name of the Faculty Member: Prof. P. K. Moha
 Subject: Power System Dynamics
 Theory / Sessional

LESSON PLAN

Period	Module / Number	Topic to be covered	Remarks / Sign of Faculty Member
1	Power System Stability	Basic concepts of stability problems & definitions	RM
2	Problems I	Rotor angle stability	RM
3		Synchronous machine characteristic	RM
4		Power vs. angle relation, stability phenomena	RM
5		Voltage stability & voltage collapse	RM
6		Classification of stability - mid-term & long-term	RM
7	Small Signal	State space concepts, Basic linearization techniques	RM
8		Eigen properties of state matrix, participation factors	RM
9	Stability II	Small signal stability of a single M/C on finite bus system	RM
10		Power system model for low freq. osc. studies	RM
11		Hefvion-phillos model, studies of parametric effect	RM
12		Hoff-bifurcation	RM
13		Electromechanical oscillating modes	RM
14		Stability improvement by power system stabilizer	RM
15		Design of power system stabilizer	RM
16	Large	Transient stability study	RM
17	perturbation	Time domain simulations	RM
18	Stability &	Direct stability analysis techniques	RM
19	Energy	Extended equal area criterion	RM
20	function	Lyapunov's method, modelling issues	RM
21	methods.	Energy function formulation	RM
22	(III)	Potential Energy Boundary Surface (PEBS)	RM
23		Energy function of a single M/C infinite bus system	RM
24		Equal area criterion and the energy function	RM
25		Multimachine PEBS	RM
26	Sub-	Turbo generator-torsional characteristics	RM
27	Synchronous	Shaft system model	RM
28	Oscillations	Torsional interaction - frequency & mode shapes	RM
29	(IV)	Torsional interaction with power system controls	RM
30		Interaction with generator excitation controls	RM
31		Interaction with speed governor	RM
32		Interaction with nearby DC converter	RM
33		Subsynchronous Resonance (SSR)	RM
34		Chk. of series capacitor-compensated transmission systems	RM
35		Self-excitation due to induction generator effect	RM
36		Torsional interaction resulting in SSR	RM
37		Analytical methods for torsional interaction	RM
38		Counter measures to SSR problem	RM
39		Voltage stability	RM
40		System oscillations	RM

Signature of the Faculty Member: *P. K. Moha*
 Date: 02/01/17

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