



**VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**



LESSON PLAN

SUBJECT CODE & NAME : U15EE520 & Power System Analysis
YEAR / SEMESTER : III EEE A&B / V

Session No.	Topics to be Covered	Duration in minutes	Teaching Aid	Ref.Book
UNIT-I INTRODUCTION TO POWER SYSTEMS				
1	Introduction	45	BB	T1 ,T2
2	Modeling of power system components	45	BB	T1 ,T2
3	Modeling of power system components-cotn..	45	BB	T1 ,T2
4	Single line diagram	45	BB	T1 ,T2
5	Single line diagram-cotn..	45	BB	T1 ,T2
6	Per unit quantities	45	BB	T1 ,T2
7	Bus impedance matrix	45	BB	T1 ,T2
8	Tutorial I	45	BB	T1 ,T2
9	Admittance matrix	45	BB	T1 ,T2
10	Tutorial II	45	BB	T1 ,T2
11	Tutorial III	45	BB	T1 ,T2
12	Revision	45	BB	
UNIT-II POWER FLOW ANALYSIS				
1	Power flow analysis methods		BB	T2
2	Problems	45	BB	T2
3	Gauss Analysis	45	BB	T2
4	Tutorial I	45	BB	T2
5	Seidel Analysis	45	BB	T2
6	Tutorial II	45	BB	T2 ,T3
7	Tutorial III	45	BB	T2 ,T3
8	Newton-Raphson Analysis	45	BB	T2 ,T3
9	Problems	45	BB	T2 ,T3
10	Fast decoupled methods of load flow analysis	45	BB	T2 ,T3
11	Problems	45	BB	T2 ,T3
12	Revision	45	BB	
UNIT – III FAULT ANALYSIS – UNBALANCED FAULTS				
1	Fault studies	45	BB	T1 ,T2
2	Fault studies-cotn..	45	BB	T1 ,T2
3	Symmetrical fault analysis	45	BB	T1 ,T2
4	Symmetrical fault analysis-Tutorials	45	BB	T1 ,T2
5	Tutorial II	45	BB	T1 ,T2
6	Analysis through impedance matrix	45	BB	T1 ,T2
7	, Analysis through impedance	45	BB	T1 ,T2

	matrix-cotn..			
8	Tutorial III	45	BB	T1 ,T2
9	Tutorial IV	45	BB	T1 ,T2
10	Current limiting reactors	45	BB	T1 ,T2
11	Tutorial V	45	BB	T1 ,T2
12	Revision	45	BB	
UNIT – IV FAULT ANALYSIS – BALANCED FAULTS				
1	Fault analysis	45	BB	T3,T1
2	Fault analysis-cotn..	45	BB	T3,T1
3	Unsymmetrical short circuit analysis	45	BB	T3,T1
4	Tutorial I	45	BB	T3,T1
5	Tutorial II	45	BB	T3,T1
6	LG	45	BB	T3,T1
7	LL	45	BB	T3,T1
8	LLG	45	BB	T3,T1
9	LLG-cotn..	45	BB	T3,T1
10	Fault parameter calculations	45	BB	T3,T1
11	Fault parameter calculation -cotn..	45	BB	T3,T1
12	Open circuit faults	45	BB	
UNIT – V STABILITY ANALYSIS				
1	Stability studies	45	BB	T4
2	Stability studies-cotn..	45	BB	T4
3	Steady state Stability	45	BB	T4
4	Tutorial I	45	BB	T4
5	Transient stability	45	BB	T4
6	Tutorial II	45	BB	T4
7	Tutorial III	45	BB	T4
8	Swing equation	45	BB	T4
9	Equal area criterion	45	BB	T4
10	Multi-machine stability analysis	45	BB	T4
11	Tutorial IV	45	BB	T4
12	Revision	45	BB	

REFERENCES:

1. John J.Grainger & Stevenson.W.D., 'Power System Analysis', McGraw Hill, 1st Edition 2003.
2. D P Kothari, I J Nagrath 'Modern Power System Analysis', 3rd Edition, 2011.
3. Hadi Saadat, 'Power System Analysis ', Tata McGraw - Hill Education, 2nd Edition, 2002.
4. J. Duncan Glover, M.S.Sarma & Thomas J. overbye, 'Power system analysis and design', 5th Edition, 2011.
5. J.C.Das, 'Power System Analysis', Short-Circuit Load Flow and Harmonics', 1st Edition, 2002.
6. Arthur R. Bergen, 'Power System Analysis', Peterson Education India, 2nd Edition, 2009.