Power System Protection and Reliability

Lecture Notes from NPTEL

Module 1 : Fundamentals of Power System Protection	
Lecture 1 : Introduction	Lecture-1.pdf
Lecture 2 : Protection Paradigms - Apparatus Protection	Lecture-2.pdf
Lecture 3 : Protection Paradigms - System Protection	Lecture-3.pdf
Lecture 4 : Desirable Attributes of Protection	Lecture-4.pdf
Module 2 : Current and Voltage Transformers	
Lecture 5 : Introduction to CT	Lecture-5.pdf
Lecture 6 : CT Tutorial	Lecture-6.pdf
Lecture 7 : CT Saturation and DC Offset Current	Lecture-7.pdf
Lecture 8 : Introduction to VT	Lecture-8.pdf
Lecture 9 : VT Tutorial	Lecture-9.pdf
Module 3 : Sequence Components and Fault Analysis	
Selected topics from ECE496: Power Fault Analysis	
Lecture 10 : Sequence Components	Lecture-10.pdf
Lecture 11 : Sequence Components (Tutorial)	Lecture-11.pdf
Lecture 12 : Sequence Modeling of Power Apparatus	Lecture-12.pdf
Lecture 13 : Sequence Modeling (Tutorial)	Lecture-13.pdf
Module 4 : Overcurrent Protection	
Lecture 14 : Fuse Protection	Lecture-14.pdf
Lecture 15 : Fundamentals of Overcurrent Protection	Lecture-15.pdf
Lecture 16: PSM Setting and Phase Relay Coordination (Tutorial)	Lecture-16.pdf
Lecture 17 : Earth Fault Protection using Overcurrent Relays	Lecture-17.pdf
Module 5 : Directional Overcurrent Protection	
Lecture 18 : Directional Overcurrent Relaying	Lecture-18.pdf
Lecture 19 : Directional Overcurrent Relay Coordination (Tutorial)	Lecture-19.pdf
Lecture 20 : Directional Overcurrent Relay Coordination in Multi-loop System	Lecture-20.pdf
Module 6 : Distance Protection	
Lecture 21 : Introduction to Distance Relaying	Lecture-21.pdf
Lecture 22 : Setting of Distance Relays	Lecture-22.pdf
Lecture 23 : Pilot Protection with Distance Relays	Lecture-23.pdf
Module 7 : Out of Step Protection	
Lecture 24 : Power Swings and Distance Relaying	Lecture-24.pdf
Lecture 25 : Analysis of Power Swings in a Multi – Machine System	Lecture-25.pdf
Lecture 26: Power Swing Detection, Blocking and Out-of-Step Relays	Lecture-26.pdf
Module 8 : Numerical Relaying I : Fundamentals	
Lecture 27 : An Introduction	Lecture-27.pdf
Lecture 28 : Sampling Theorem	Lecture-28.pdf
Lecture 29 : Least Square Method for Estimation of Phasors - I	Lecture-29.pdf
Lecture 30 : Least Square Method for Estimation of Phasors - II	Lecture-30.pdf
Lecture 31 : Fourier Algorithms	Lecture-31.pdf
Module 9 : Numerical Relaying II : DSP Perspective	
Lecture 32 : Fourier Analysis	Lecture-32.pdf
Lecture 33 : Discrete Fourier Transform	Lecture-33.pdf
Lecture 34 : Properties of Discrete Fourier Transform	Lecture-34.pdf
Lecture 35 : Computation of Phasor from Discrete Fourier Transform	Lecture-35.pdf
Lecture 36 : Fast Fourier Transform	Lecture-36.pdf
	Lecture-37.pdf
Lecture 37 : Estimation of System Frequency	
Lecture 37 : Estimation of System Frequency Module 10 : Differential Protection of Bus, Transformer and Generator	
Module 10 : Differential Protection of Bus, Transformer and Generator Lecture 38 : Bus Protection	Lecture-38.pdf
Module 10 : Differential Protection of Bus, Transformer and Generator	Lecture-38.pdf Lecture-39.pdf