ATME College of Engineering

Department of EEE
Emitting Elite Energy

Department of Electrical & Electronics Engineering

Lesson Plan & Work-done Diary for AY:2025-26, ODD Semester

Course with Code: Big Data Analytics in Power Systems/ BEE714D				Faculty: Mr. Shreeshayana R			Semester & Section: VII	
Class No.	**Date planned (DD/MM)**	**Topics to be covered**	**TLP Planned**	**Class No.**	**Date of Conduction (DD/MM)**	**Topics Covered**	**TLP Executed**	**Remarks if any deviation**
MODULE-1								
1	05.08.2025 Tuesday	Course Orientation; CO-PO mapping awareness, Delivery and Assignment Discussion	ICT	1	05.08.2025 Tuesday	Course Orientation; CO-PO mapping awareness, Delivery and Assignment Discussion	ICT	
2	07.08.2025 Thursday	**Module-1: Introduction:** Big Data, Future Power Systems.	Chalk & Talk/ICT	2	07.08.2025 Thursday	**Module-1: Introduction:** Big Data, Future Power Systems.	Chalk & Talk/ICT	
3	08.08.2025 Friday	**Big Data Application and Analytics in a Large - Scale Power System:** Introduction	Chalk & Talk/ICT	3	08.08.2025 Friday	**Big Data Application and Analytics in a Large - Scale Power System:** Introduction	Chalk & Talk/ICT	
4	12.08.2025	General Applications of Big Data	Chalk & Talk/ICT	4	12.08.2025	General Applications of Big Data	Chalk & Talk/ICT	
5	14.08.2025 Thursday 19.08.2025 Tuesday	Algorithms for Processing Big Data	Chalk & Talk/ICT	5	14.08.2025 Thursday 19.08.2025 Tuesday	Algorithms for Processing Big Data	Chalk & Talk/ICT	
6	21.08.2025 Thursday	Algorithms for Processing Big Data Contd, Application of Big Data in Power Systems,	Chalk & Talk/ICT	6	21.08.2025 Thursday	Algorithms for Processing Big Data Contd, Application of Big Data in Power Systems,	Chalk & Talk/ICT	
7	22.08.2025 Friday	Summary, Evaluation using SRS, Model QP Discussion	ICT	7	22.08.2025 Friday	Summary, Evaluation using SRS, Model QP Discussion	ICT	SRS will be conducted based on class strength
8	26.08.2025 Tuesday	Activity-1: Case Study on Big Data Applications in Power Systems (Presentation)	ICT	8	25.08.2025 Tuesday	Activity-1: Case Study on Big Data Applications in Power Systems (Presentation)	ICT	

Assignment-1:

Activity-1: Case Study on Big Data Applications in Power Systems

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MODULE 2								
9	28.08.2025 Thursday	Module-2: **Role of Big Data in Smart Grid Communications:** Introduction	ICT		28.08.2025	Module-2: **Role of Big Data in Smart Grid Communications:** Introduction	ICT	
10	29.08.2025 Friday	The Grid Modernization, The Grid Interconnection with the Internet of Things	Chalk & Talk/ICT		30.08.2025	The Grid Modernization, The Grid Interconnection with the Internet of Things	Chalk & Talk/ICT	
11	02.09.2025 Tuesday	Data Traffic Pattern in a Smart Grid Environment, The Massive Flow of Information in a Smart Scenario	Chalk & Talk/ICT					
12	04.09.2025 Thursday	The Volume of Generated Data in a Smart Distribution System: A Case of Study.	Chalk & Talk/ICT					
13	09.09.2025 Tuesday	**Big Data Optimization in Electric Power Systems:** Introduction, Background	Chalk & Talk/ICT					
14	16.09.2025 Tuesday	Scientometric Analysis of Big Data, Big Data and Power Systems	Chalk & Talk/ICT					
15	18.09.2025 Thursday	Optimization Techniques Used in the Big Data Analysis. Model QP Discussion	Chalk & Talk/ICT					
16	19.09.2025 Friday	Summary, Evaluation using SRS	ICT					

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MODULE 3								
17	23.09.2025 Tuesday	**Module-3:Security Methods for Critical Infrastructure Communications:** Introduction	ICT					
18	25.09.2025 Thursday	Effects of Successful Communication System Threats, General Communication System Operations	Chalk & Talk					
19	26.09.2025 Friday	Industrial Control Networks and Operations, High-Level Communication System Threats, Cyber Threats and Security	Chalk & Talk					
20	30.09.2025 Tuesday	**Data - Mining Methods for Electricity Theft Detection:** Introduction,	Chalk & Talk					
21	03.10.2025 Friday	Transmission and Distribution System Losses, Electricity Theft Methods	Chalk & Talk					
22	09.10.2025 Thursday	Data Mining and Electricity Theft, Issues and Directions in Electricity Theft-Related Data-Mining Research.	Chalk & Talk					
23	10.10.2025 Friday	Summary, Evaluation using SRS, Model QP Discussion	ICT					
24	14.10.2025 Tuesday	Activity-2: **Data Analysis & Algorithm Simulation for Smart Grid (Presentation)**	ICT					

Assignment-2: Data Analysis & Algorithm Simulation for Smart Grid
IA-1 Scheme Discussion

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MODULE 4								
25	21.10.2025 Tuesday	**Module-4: Unit Commitment Control of Smart Grids:** Introduction	ICT					
26	23.10.2025 Thursday	Renewable Energy Resources	Chalk & Talk					
27	24.10.2025 Friday	The Unit Commitment Problem	Chalk & Talk					
28	28.10.2025 Tuesday	The Unit Commitment Problem Contd..	Chalk & Talk					
29	30.10.2025 Thursday	A Multi-agent Architecture	Chalk & Talk					
30	31.10.2025 Friday	Illustrative Example	Chalk & Talk					
31	04.11.2025 Tuesday	Illustrative Example Contd.., Model QP Discussion	ICT					
32	06.11.2025 Thursday	Summary, Evaluation using SRS	ICT					

IA-II Scheme Discussion

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Class No.	**Date planned (DD/MM)**	**Topics to be covered**	**TLP Planned**	**Class No.**	**Date of Conduction (DD/MM)**	**Topics Covered**	**TLP Executed**	**Remarks if any deviation**
MODULE 5								
32	07.11.2025 Friday	**Module-5: Transformer Differential Protection Algorithm Based on Data Pattern Recognition:** Big Data and Power System Protection	ICT					
33	11.11.2025 Tuesday	Methods for Differential Protection Blocking	Chalk & Talk					
34	13.11.2025 Thursday	Principal Component Analysis, Curvilinear Component Analysis (CCA),	Chalk & Talk					
35	14.11.2025 Friday	PCA Applied to Discriminate Between Inrush and Fault, Currents in Transformers	Chalk & Talk					
36	15.11.202* Saturday	Application of the CCA as a Base for a Differential Protection System Under Study	Chalk & Talk					
37	15.11.202* Saturday	Results.	Chalk & Talk					
38	18.11.2025 Tuesday	Summary, Evaluation using SRS	Chalk & Talk					
39	20.11.2025 Thursday	Activity Assignment 3: Security Threat & Electricity Theft Detection Analysis (Presentation)	ICT					
40	21.11.2025 Friday	VTU QP Discussion	ICT					

IA-III Scheme Discussion
Activity Assignment 3: Security Threat & Electricity Theft Detection Analysis

	Activity	Planned	Actual	Remarks
1	Theory Classes	40		
2	Assignments/Quizzes/ Self study	5: Mock Test 3: Group Activity 5: SRS		
3	Tutorials/ Extra classes	2		
4	Internal Assessments	3		
5	ICT based Teaching (% of usage in Curriculum)	14/40=35%		
Planning			**Execution**	
Faculty Signature: 			**Faculty Signature:**	
HoD Signature: 			**HoD Signature:**	