



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE

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Minutes of Board of Studies Meeting held on 04-05-2018

- Dr.N.M.Nandhitha, Prof. & Dean School of Electrical and Electronics started the meeting by welcoming both the external and the internal numbers to the Board of Studies meeting
- Dr.V.Sivachidambaranathan, Prof.& Head, Dept. of Electrical and Electronics Engineering requested Dr.Sundarsingh, Faculty/EEE to present the curriculum revisions before the board for the subject Power System Protection and Switch gear.
- Dr.V.Sivachidambaranathan, Prof.& Head, Dept. of Electrical and Electronics Engineering requested Dr.Rameshbabu, Faculty/EEE to present the curriculum revisions for the subject Analysis of Inverters before the board.
- They presented the old and new syllabus before the board and discussed the valid additions made in the syllabus.
- Dr.V.Sivachidambaranathan put forth the syllabus of the new courses, 'Industrial Instrumentation and Automation' for the approval of the board. Dr. A.Amalin Prince approved the Syllabus for this new course.

Name of the Course: **POWER SYSTEM PROTECTION AND SWITCH GEAR**

Course Code : **SEE1401**

| Unit | Content | Remarks |
|------|--|---|
| I | INTRODUCTION Essential requirements of protection – nature and causes of faults – types of faults – effects of faults – zones of protection – protection schemes – CTs and PTs and their applications – Basic relay terminology over current relay, directional relay - Micro processor based over current relay | Content deleted Content Included |
| II | PROTECTIVE RELAYS Electromagnetic relays – operating principle – torque equation – relay characteristics – over current relay, directional relay , distance relay, differential relay, negative sequence relay, amplitude and phase comparator of over current static relays, duality between comparators. Micro processor based over current relay. Basic relay terminology | Content Deleted Content included |
| III | APPARATUS PROTECTION Protection of Generator– stator & rotor protection – Large Motor protection. Transformer protection – Bus bar protection – Transmission line protection | |
| IV | THEORY OF ARC QUENCHING. Arcing phenomena – theory and methods of arc quenching – recovery voltage – restriking voltage – RRRV – resistance switching – current chopping – capacitive current breaking – characteristics of fuses – HRC fuse. | |
| V | CIRCUIT BREAKERS Classification Of Circuit Breakers – Air Circuit Breakers – Oil Circuit Breakers – Vacuum Circuit Breaker – S _f 6 Circuit Breakers – Selection Of Circuit Breakers – Rating Of Circuit Breakers – Testing Of Circuit Breakers. | |

| Name of the Course: Analysis of Inverters | | |
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| Course Code : SEE5102 | | |
| Unit | Content | Remarks |
| I | Introduction – Principle of operation – Performance parameters – Single phase half bridge inverters – Single phase full bridge inverter – single phase series inverter – single phase parallel inverter - Voltage control of single phase inverters | |
| II | Modified McMurray inverter – McMurray Bedford half bridge and full inverter – Three phase bridge inverter with 180° and 120° mode of operation– Voltage control of three phase inverters. | Shifted to Unit1 Deleted |
| III | Analysis of single phase and three phase auto sequential current source inverter - current source bridge inverter – Harmonic elimination techniques. Comparison with VSI and CSI-Equivalent circuit and operation – Circuit analysis and calculation. Introduction to Quasi Z- source inverter-basic topology-Extended boost quasi Z- source inverter topologies | Shifted to Unit 2 Included in Unit 3 |
| IV | Multilevel Concept – Diode Clamped – Flying Capacitor – Cascade Type Multilevel Inverters - Comparison of Multilevel Inverters - Application of Multilevel Inverters | Shifted to Unit 5 |
| V | Introduction – Series Resonant Inverters With Unidirectional and Bidirectional Switches – Parallel Resonant Inverters – Class E Resonant Inverter - Zero Current Switching Resonant Converter – Zero Voltage Switching Resonant Converter – Two Quadrant ZVS Resonant Converter – Resonant DC –Link Inverter. | Shifted from Unit 4 |