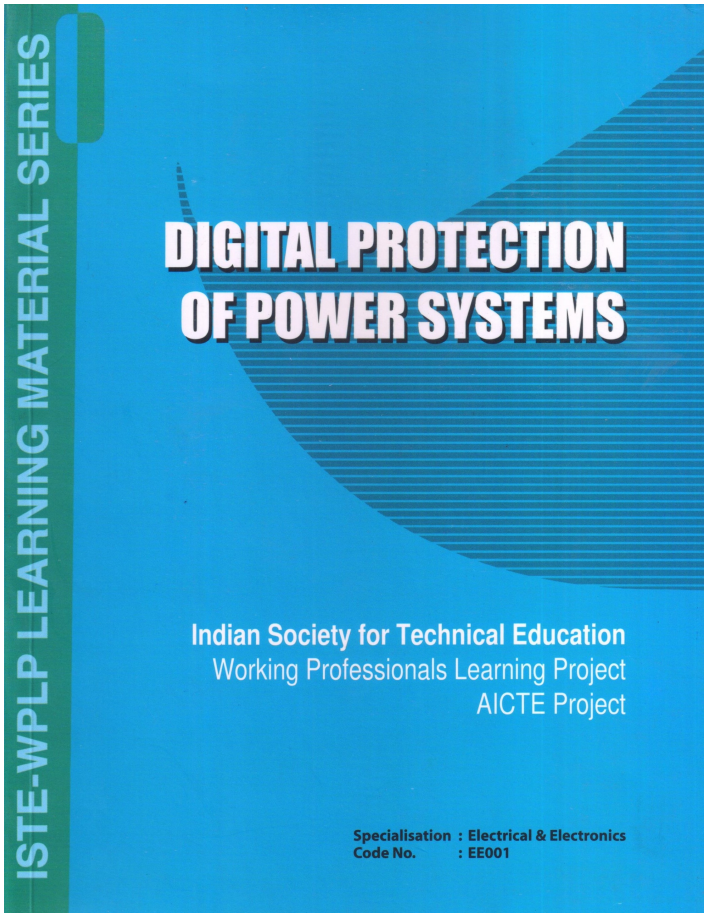

Digital Protection of Power Systems

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Product Description

The development in the area of power system protection has taken a tremendous leap forward in view of the technological advancements in electronics, especially with the introduction of new designs in microprocessor technology such as microcontrollers and Digital Signal Processors (DSPs). The subject on digital protection of power systems has become highly interdisciplinary encompassing various disciplines such as analog and digital electronics, digital signal processing, software development, communication technology, Artificial Intelligence (AI) techniques in addition to the study of power system subjects like electrical machines, power system analysis, simulation /modeling involving load flow, short circuit, stability problems etc. This book is intended for practicing engineers, planning and operation staff working in power plant, industries and electrical utilities to familiarize with the developments in the protection of power system devices and networks. Research in academic institutions, R&D establishments and teachers conduction advanced power system protection course in engineering college can use this book as reference. The chapters in the book have comprehensive coverage of various issues of power system protection, namely digital relay architecture, modelling techniques for simulation transient phenomena in power networks based on Electromagnetic Transient Package (EMTP), result of case studies for better appreciation of EMTP, Modelling procedures of current and voltage transformers, Capacitor Voltage Transformers (CVTs) and their transient behaviour, hardware and software considerations keeping in view of the latest advancements in hardware designs based on DSPs and microcontrollers and software development issues of various digital relaying algorithms based on signal processing techniques for implementing high speed and accurate relaying schemes, application of digital relaying for protection of major power system components like busbars, power transformers, synchronous and induction machines.

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