



## METADATA

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## Abstract

This book is called to serve the educational needs of the relevant courses within the subject of "Electrical Machines", taught in Departments of Electrical & Computer Engineering, as well as other Departments of Polytechnics of the Higher Education Institutions. It mainly concerns the laboratory practice that accompanies the most common categories of electrical machines of direct and alternating current (D.C. and A.C.), such as single-phase and three-phase transformers, D.C. motors / generators and A.C. motors / generators. Each laboratory application starts by setting the minimum learning objectives and continues with a brief but necessary theoretical analysis, describing the phenomenon to be examined and studied by the student. Then, the required laboratory equipment for its realization is listed and the process of connections and the necessary steps and measurements are followed in a methodical way. There are also calculations requested during the exercise. In addition, as part of the homework,

the student will be asked -among other things- to draw/plot operating curves/graphs that verify the corresponding theory, but also to explain, in the judgment and knowledge gained, specific questions set about the phenomena of electric machines he studied. Other features of this series of laboratory applications are that a) actually assembled devices of electrical machines are used and b) limited mathematics are used, resulting in greater emphasis on the physical understanding of the relevant theories. It should be noted, however, that the absence of advanced mathematics has not removed the technical rigor. The educational method is mainly experimental and has a direct application, as a result of which it offers enough flexibility to adapt to "energy" courses. In general, the content of this book was mainly guided by the simple but comprehensive analysis that a technical book for students of Higher Education Institutions as electrical engineers towards "energy" direction, should have.

