

**DYNAMO LABORATORY  
OUTLINES FOR  
STUDENTS IN  
ELECTRICAL ENGINEERING**

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Dynamo Laboratory Outlines for Students in Electrical Engineering by John Fay Wilson

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# DYNAMO LABORATORY OUTLINES

FOR STUDENTS IN  
ELECTRICAL ENGINEERING

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## PREFACE

The preparation of these Outlines was undertaken with the idea of supplying a laboratory manual of limited scope and cost yet containing such material as would meet the requirements of electrical engineering courses generally. To this end a study was made of all available information regarding the laboratory work of a large number of American universities and technical schools. It was found impracticable to include, in this volume, every experiment listed by these schools but the substance of every experiment having general engineering interest has, the writer believes, been incorporated.

While the writer does not believe in "spoon feeding" neither can he subscribe to the other extreme of making the student an independent discoverer of the facts and principles pertaining to the laboratory assignment. The tourist, visiting Colorado, saves time and gains more information by employing a competent guide than by starting out alone to "discover" Pike's Peak. The tourist, however, gains little information by simply following the guide. He must use his faculties of observation. So the laboratory student may be lead, by means of a proper outline, to certain experimental facts which he should connect with the theory as developed in the class-room or by outside reading.

These Outlines, therefore, consist of short but explicit instructions regarding the performance of the experiment, and conclude with a list of questions covering both the theory and the practical operation of the apparatus studied. (It is not expected that the questions asked will cover all phases of the subject that may arise and



instructors may find it advantageous to ask additional questions.)

It is not intended that the order in which experiments are arranged in this volume should indicate the order in which they should be performed. Neither is it expected that the subject-matter under one heading should, necessarily, be covered in one laboratory period. The subdivisions of the subjects make it possible to omit parts of any subject where, for lack of time or any other reason, it may be deemed advisable.

The results of the use of these Outlines in the writer's classes at the University of Michigan have been most satisfactory but corrections or suggestions for their improvement will be gladly received from any one interested.

The thanks of the writer are due Prof. Benj. F. Bailey, of the University of Michigan, for encouragement in the preparation of these Outlines and for suggestions for their improvement; also to Mr. Walter M. Rennie and to Mr. G. W. Snedecor for reading and correcting the manuscript.

J. F. W.

THE UNIVERSITY OF MICHIGAN,  
*January, 1913.*

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