

**DESIGN AND CONSTRUCTION OF A THREE-PHASE
TRANSFORMER TRAINER**

Design Project

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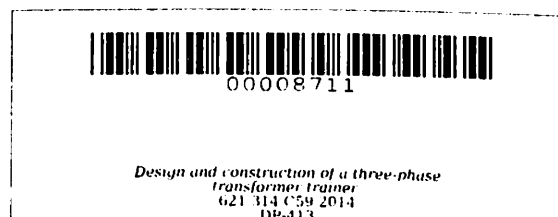
**College of Engineering and Information Technology
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Indang, Cavite**

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**DESIGN AND CONSTRUCTION OF A THREE-PHASE
TRANSFORMER TRAINER**

Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
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In partial fulfillment
of the requirements for the degree
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ABSTRACT

CLEMENTE, JAYSON D., AND MACASIAS, JORDAN MATTHEW B., Design and Construction of a Three-Phase Transformer Trainer. Undergraduate Design Project. Bachelor of Science in Electrical Engineering. Cavite State University, Indang, Cavite. April 2014. Adviser: Engr. Efren R. Rocillo.

A study was conducted to produce a three-phase transformer trainer. Specifically, it was conducted to evaluate the performance of the design through actual application. Three-phase transformer trainer is an instructional device that provides complete learning concepts of single-phase and three-phase transformers. The device enables the student to calculate and measure the equivalent parameters and characteristics of the transformer.

The trainer demonstrates the principles and operations of a transformer. It was intended to be used for basic connection of transformers. It included the use of variable alternating current transformer where the output voltage could be adjusted.

The transformer trainer is composed of six modules. These are the basic protection module, basic connection module, measuring module, switch module, transformer module, and load module. The device could be operated at 220-230 volts single-phase supply, 60 hertz and 230 volts three-phase supply. It could not handle more than 30 amperes load. The study attained all the objectives successfully. All connections and appearance of the panel were designed in a way that students could easily understand.

The overall cost of the project was P45,450.00.

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DESIGN AND CONSTRUCTION OF A THREE-PHASE TRANSFORMER TRAINER

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INTRODUCTION

Transformers are important power-transferred and voltage-transformed equipment widely served in high, extra-high, and ultra-high voltages electrical network with its high operational efficiency.

In electrical engineering, three-phase electric power systems have at least three conductors carrying alternating current voltages that are offset in time by one-third of the period. A three-phase system may be arranged in delta (Δ) or star (Y). Pertaining to a circuit, system and device that energized by three electromotive forces that differ in phase by one third of a cycle or 120° .

Three-phase transformer is generally used in three-phase power system as it is cost effective than later but when size matters it is preferable to use bank of three single phase transformer as it is easier to transport three single-phase unit separately than one