

**ENERGY AUDIT OF THE FIVE COMPUTER LABORATORIES OF ST. ANTHONY'S
COLLEGE: LIGHTING SYSTEM, AIR-CONDITIONNG SYSTEM,
AND ELECTRICAL SYSTEM AND EQUIPMENT**

A Special Problem

**Presented to
the Faculty of the College of Engineering Graduate Programs
Central Philippine University
Jaro, Iloilo City, Philippines**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Engineering
(major in Electrical Engineering)**



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ABSTRACT

St. Anthony's College (SAC) is a Catholic, private institution of higher learning which offers different courses using computer laboratory facilities. The laboratories are mainly equipped with computers, air-conditioners and lights and these consume a large amount of energy during laboratory hours. To reduce energy consumption and enhance the efficiency of the laboratories, the study entitled *Energy Audit of the Five Computer Laboratories of St. Anthony's College: Lighting System, Air-Conditioning System and Electrical System and Equipment* was conducted. This study was only limited to the five computer laboratories of SAC and its main objective is to audit the air-conditioners, lights and computers. The data were gathered by using the data logger for the electrical parameters; anemometer and temperature humidity meter was used to check the performance of the three major parts of an air-conditioner and lux meter was used to check the luminance level of lights. The data were analyzed to determine the efficiency of the air-conditioners, lights and computers to calculate the Annual Energy and Monetary Losses. The annual energy loss for the lighting, air-conditioning and computer is 25,742.00 kW-hr. While the annual monetary loss for air-conditioning is Php 218,740.83; for the lights Php 7,036.21 and for the computers Php 31,642.96. Thus, the total monetary loss of the lights, air-conditioners and computers is Php 257,420.00 which is computed at Php 10.00 kW-hr in 200 days. This loss could be turned into

savings if the policies, standard, procedure and guidelines will be implemented in the laboratory that could enhance the efficiency of the equipment.