

DEVELOPMENT OF A LABORATORY MANUAL  
INTENDED FOR  
UNDERGRADUATE SUBJECT M. E. LABORATORY II

A Special Paper

Presented to

The School of Graduate Studies

Central Philippine University

Iloilo City

In Partial Fulfillment

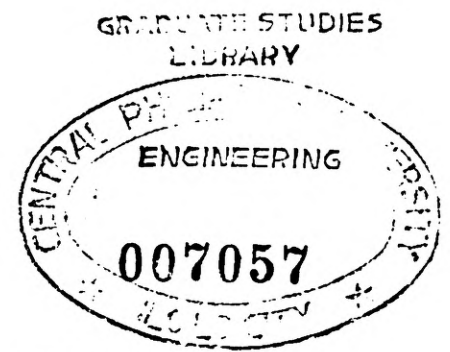
Of the Requirement for the Degree

Master of Engineering

By

Reynaldo B. Magay

March 2004



**PHOTOCOPYING NOT ALLOWED**

**DEVELOPMENT OF A LABORATORY MANUAL INTENDED FOR  
UNDERGRADUATE SUBJECT M.E. LABORATORY II**

By Reynaldo B. Magay

**ABSTRACT**

This study was conducted because of the need to compile the test procedures contained in scattered materials (see references) into a single manual. It is also the object of this study to identify and list all equipment, materials, and apparatus for my institution (the State Polytechnic College of Palawan) to complete the set-up of its present M.E. Laboratory room.

Prominent in the promulgation of such standard tests are the American Society of Mechanical Engineers (ASME), the Society of Automotive Engineers (SAE), the U.S. Bureau of Mines, and the manufacturers themselves.

Intended for the B.S. Mechanical Engineering students of the State Polytechnic College of Palawan (SPCP), the test procedures contained in this proposed manual was adapted to the available options and present resources of the institution. Simplicity, economy, safety, and ease of test conduct were the criteria in the design of this manual.

Included are the acceptance and test procedures for solid and liquid fuels, reciprocating engines, external-combustion systems (steam-generator), and centrifugal

pumps. Introductory procedures were also added for the students to familiarize with engine basic measurements, operation, and design features before proceeding to performance testing proper.

To achieve coincidence between theory and practice, the students are encouraged to analyze and identify the principles applied in an actual engine (design or operation) and compare them with the hypothetical engines of Thermodynamics.