LABORATORY MANUAL

FOR

ME 363

PRINCIPLES AND PRACTICE OF MANUFACTURING PROCESSES

By Professor Yung C. Shin

School of Mechanical Engineering
Purdue University
West Lafayette, IN 47907

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FORWARD

This manual is intended as a basic description of laboratory exercises and experiments in the areas of metrology, machining, CNC, micro fabrication and rapid prototyping for ME 363 – Principles and Practice Manufacturing Processes. The exercises provide the students with opportunities to gain hands-on experiences and experimentation in these important areas.

It is highly recommended that you read over the description of the exercise or experiment and the related material in your textbook before coming to the lab sessions. This will enable you to make more effective use of the time available and generate more reliable data for your reports.

As one of the very few hands-on laboratory courses in manufacturing processes left at any U.S. university, we hope that you enjoy the experience and take the fullest advantage of it.

Yung. C. Shin

August 2019

TITLE (COVER) PAGE

ME 363: Lab. Exp. Report (Experiment # _____)

On

“_____“

Section No. _____, Date: _____/_____/

By

(1) Name: _____

(2) Name: _____

(3) Name: _____

Date : _____

ME **363 LABORATORY REPORT FORMAT**

I. Abstract: A brief description of the overall idea of the experiment and the most important results.

II. Objective: Briefly, state the objective of the experiment in your own words.

III. Experimental Procedure:

Explain the experimental procedure, step by step, in your own words, listing the test equipment, instruments, tools, materials, cutting parameters, etc. used. The reader of your report should be able to duplicate the experiment from this section without being familiar with our labs.

IV. Test Results: Present the test results using prose, graphs and/or tables to explain them. Follow the general/standard conventions for figures and tables. The original data sheets, computation sheets and other appropriate material are to be included as appendices.

V. Discussion: Discuss the best results (referring to specific figures and tables). Be sure to discuss the results in comparison with existing theories, other references, etc. Also discuss probable sources of experimental error and how (if possible) they can be eliminated.

VI. Conclusions: A brief summary of the experiment, test results and conclusions drawn from the experiment. Also suggestions/recommendations for improving the design and execution of the experiment may be included.

VII. References: List all references used for the preparation of the report. A minimum of three references are required. For example, the following references may be used:

1. Textbook
2. Tool and Manufacturing Handbook, SME
3. Fundamentals of Tool Design, 2nd Edition, SME

VIII. Appendices: The following may be included when appropriate:

A. Original data sheets
B. Computation sheets
C. Computer program listings and output
D. Other