

# **Guru Nanak Dev Engg College Ludhiana**

## **Format for M.Tech Thesis synopsis**

### **Title page:**

1. Name of Student and PTU registration No cum Roll No
2. Present official Address with E-mail, telephone No
3. Branch (indicate F.T/P.T)
4. Year of Admission
5. Number of subjects passed till date
6. Proposed Topic:

**Introduction** (should not exceed 3 pages including Figs.)

**Brief Literature survey** (should not exceed 3 pages)

**Problem formulation:** Need and significance of proposed research work (should not exceed 1page)

**Objectives** (should not exceed 1 page)

**Methodology/ Planning of work** (should not exceed 2 pages)

**Facilities required for proposed work**

**Proposed Place of work**

## **SPECIFICATIONS FOR M.Tech THESIS**

1. The thesis shall be computer typed (English- British, Font -Times Roman, Size-12 point) and printed on A4 size paper.
2. The thesis shall be hard bound with cover page in light green colour. The name of the candidate, degree (specifying the specialization) ,year of submission, name of the University including college name shall be printed in black on the cover [Refer sample sheet (outer cover)]
3. The thesis shall be typed on one side only with double space with a margin 3.5 cm on the left, 2.5 cm on the top, and 1.25 cm on the right and at bottom.
4. In the thesis, the title page [Refer sample sheet (inner cover)] should be given first then the Certificate by the candidate and the supervisor(s) in sequence, followed by an abstract of the thesis (not exceeding 1500 words). This should be followed by the acknowledgment, list of figures/list of tables, notations/nomenclature, and then contents with page no.s
5. In the body of the text, a reference should be indicated giving author name and year of publication in parenthesis such as (Singh and Shan, 2002).
6. The reference should be given at the end of the Thesis in alphabetical order indicating:
  - i). The authors name and his initials
  - ii). The title of the paper and name of the journal
  - iii). The name of the book and the publisher
  - iv) The number of the volume, page numbers, and the year of publication
  - (v) standard abbreviation may be used in the names of the journals

### **For Example:**

- A. Singh, S. and Shan, H. S. (2002) "*Development of Magneto Abrasive Flow Machining Process*", International Journal of Machine Tools & Manufacturing, vol. 42, 2, pp. 953-959.
- B. Laroia, S.C. and Adithan, M. (1994), "*Precision Machining of Advanced Ceramics*" Proceeding of the International Conference on Advanced Manufacturing Technology (ICMAT - 94), University Teknoloi Malaysia, Johor Bahru ,Malaysia, pp 203-210.
- C. Adithan, M. and Gupta, A.B. (1996), "*Manufacturing Technology*", New Age, International Publishers, New Delhi.

7. The diagrams should be printed on a light/white background, Tabular matter should be clearly arranged. Decimal point may be indicated by full stop(.)The caption for Figure must be given at the BOTTOM of the Fig. and Caption for the Table must be given at the TOP of the Table.
8. The graphs should be combined for the same parameters for proper comparison. Single graph should be avoided as far as possible.
9. Conclusions must not exceed more than two pages.
10. The thesis must consist of following chapters

Chapter 1- Introduction

Chapter 2- Literature Review

Chapter 3- Problem Formulation

(It can span in two to three sub chapters depending on the type and volume of the work)

Chapter 4- Result and Discussion

Chapter 5-Conclusions and future scope

References

Appendix (if any)

Annexures-I,II,III

Sample sheet (outer cover)

**FUZZY ANALYSIS OF THREE PHASE  
INDUCTION MOTOR BASED ON  
VARIOUS ANALYTICAL  
PARAMETERS** (24pt.)

**THESIS** (14pt.)

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF THE DEGREE OF (12pt.)

**MASTER OF TECHNOLOGY**  
(Electrical/Power) (14pt.)

SUBMITTED BY

**VIJAY PRATAP SINGH** (14pt)  
April 2004

PTU Logo

**PUNJAB TECHNICAL UNIVERSITY**  
JALANDHAR, INDIA (14pt.)

Sample sheet (inner title page)

**FUZZY ANALYSIS OF THREE PHASE  
INDUCTION MOTOR BASED ON  
VARIOUS ANALYTICAL  
PARAMETERS** (24pt.)

**THESIS**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF THE DEGREE OF

**MASTER OF TECHNOLOGY**  
(Electrical/Power)

Submitted by

**VIJAY PARTAP SINGH**

Name of the College

April 2004

**PUNJAB TECHNICAL UNIVERSITY**  
JALANDHAR, INDIA (14pt.)

**GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA**

**CANDIDATE'S DECLARATION**

I hereby certify that the work which is being presented in the thesis entitled "TITLE" by "NAME OF THE STUDENT" in partial fulfillment of requirements for the award of degree of M.Tech. (Branch) submitted in the Department of (Branch) at NAME OF THE INSTITUTE under PUNJAB TECHNICAL UNIVERSITY, JALANDHAR is an authentic record of my own work carried out during a period from \_\_\_\_\_ to \_\_\_\_\_ under the supervision of NAME OF SUPERVISOR (S). The matter presented in this thesis has not been submitted by me in any other University / Institute for the award of M.Tech Degree.

Signature of the Student

This is to certify that the above statement made by the candidate is correct to the best of my/our knowledge

Signature of the SUPERVISOR (S)

The M.Tech Viva Voce Examination of (NAME OF CANDIDATE) has been held on \_\_\_\_\_ and accepted

Signature of Supervisor(s) Signature of External Examiner

Signature of H.O.D.

## SAMPLE SHEET-ACKNOWLEDGEMENT

### ACKNOWLEDGEMENT

The authors are highly grateful to the Principal, Guru Nanak Dev Engineering College (GNDEC), Ludhiana, for providing this opportunity to carry out the present thesis/work

The constant guidance and encouragement received from Prof. Jaswinder Singh Head, Department of Electrical Engineering, GNDEC Ludhiana has been of great help in carrying our the present work and is acknowledged with reverential thanks.

The authors would like to express a deep sense of gratitude and thanks profusely to Prof. Arvind Dhingra, Department of Electrical Engineering, GNDEC, who was the thesis Supervisor. Without the wise counsel and able guidance, it would have been impossible to complete the thesis in this manner.

The help rendered by Mr Gurinder Singh Brar, Lecturer, GNDEC, for the literature, Mr. Ashwani Kumar, Scientist MERADO Ludhiana, and their associates for experimentation is greatly acknowledged.

The author express gratitude to other faculty members of Electrical Engineering Department, GNDEC for their intellectual support throughout the course of this work.

Finally, the authors are indebted to all whosoever have contributed in this thesis work and friendly stay at GNDEC.

**VINEY GUPTA**

SAMPLE SHEET - contents

## **CONTENTS**

**Page No.**

*Candidate's Declaration i*

*Abstract ii*

*Acknowledgement viii*

*List of Figures xvi*

*List of Tables xxii*

*Nomenclature xxvi*

### **Chapter 1 : INTRODUCTION 1**

1.1 Non-Traditional Machining 1

1.2 AFM Process Principle 4

1.3 AFM Technology 6



1. 4 AFM Applications 8

**Chapter 2 : LITERATURE REVIEW 14**

2.1 AFM Process Parameters 14

2.1.1 Media Flow Volume and Extrusion Pressure 15

2.1.2 Media Flow Rate 16

2.1.3 Media Viscosity 17

2.1.4 Number of Cycles 18

2.1.5 Abrasive Grain Size and Concentration 18

2.1.6 Material and Geometrical Features of Workpiece 19

2.1.7 Rheology of Carrier Media 21

2.1.8 Initial Surface Condition 23

2.2 Modeling of AFM 24

2.2.1 Stochastic Modeling 24

2.2.2. Analytical Modeling 25