

TITLE OF THE THESIS, FONT: CALIBRI,  
FONT SIZE: 22,

A THESIS SUBMITTED  
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE AWARD OF DEGREE OF

MASTER OF TECHNOLOGY

In

..... Engineering

SUBMITTED BY

Name of Candidate

Roll Number: 70707070



PUNJAB TECHNICAL UNIVERSITY  
JALANDHAR, PUNJAB, INDIA

Month Year

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PUNJAB TECHNICAL UNIVERSITY REGIONAL CENTER  
Baba Banda Singh Bahadur Engineering College  
Fatehgarh Sahib (Punjab)

Month Year

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### CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis entitled, "Title of the thesis", by **Name of the student (Uni. Roll No. )** in partial fulfillment of requirement for the award of degree of M.Tech. (**Specialization e.g. Electronics & Communication Engineering**) submitted in Punjab Technical University Regional Center at Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib is an authentic record of my own work carried out during a period from ..... to ..... under the supervision of ....., Designation, Department. 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

The M.Tech Viva-Voce Examination of (**Name of the student**) has been held on \_\_\_\_\_.

Signature of the Supervisor

Signature of External Examiner

Signature of Officer Incharge

## ACKNOWLEDGEMENTS

(It is just a format for hierarchy of the acknowledgement and can be extended/ reduced accordingly)

I express my sincere gratitude to the Punjab Technical University, Jalandhar for giving me the opportunity to work on the thesis during my final year of M.Tech. Thesis work is an important aspect in the field of engineering.

I would like to thank ....., Coordinator, PTU Regional Center, Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib for their kind support.

I also owe my sincerest gratitude towards ..... for his valuable advice and healthy criticism throughout my thesis which helped me immensely to complete my work successfully.

I would like to thank the Dean Academics and members of the Departmental Research Committee for their valuable suggestions and healthy criticism during my presentation of the work..

I would also like to thank ....., designation, department, institute for his help.

I would also like to thank my wife/husband, kinds, parents etc who helped me in my thesis.

I would also like to thank everyone who has knowingly & unknowingly helped me throughout my thesis.

Last but not least, a word of thanks for the authors of all those books and papers which I have consulted during my thesis work as well as for preparing the report.

At the end thanks to the Almighty for .....

(Name of the student)  
Uni. Roll No.

## ABSTRACT

The abstract is the précis of the complete work presented in the thesis. It should be concise but at the same time should provide information about the work done and the methodologies used. The same may be written in multiple paragraphs and each paragraph should begin with a "one tab space". The abstract may be written in the single spacing paragraph format.

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Note 1: The number of Chapters is just indicative. There may be more number of Chapters in the Thesis but the format of the index has to be followed as given above.

Note 2: Page numbering should be as per the given format i.e pages from candidates' declaration to list of abbreviations should be in Roman and page numbering of the Chapters should be in decimal numbers. The title pages of the Thesis should NOT be numbered.

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## LIST OF ABBREVIATIONS

ANN	Artificial Neural Network
DRC	Departmental Research Committee

This list is optional. It should be included only if absolutely necessary, i.e. there being plenty of abbreviations that have been used in the thesis. It should be contained in a single page if possible. The list should be in alphabetical order.

# Chapter 1

## TITLE OF CHAPTER 1

Please note that whatever be the content written in this template is just an example. In this chapter, scope of the work is first explained, and then the background and the proposed work are described. The methodology and the purpose of the work are also discussed. Thereafter a brief description of all the chapters is also given.

### 1.1 Title of Article 1.1

The "Chapter 1" should be written in font size 18 and the "TITLE OF CHAPTER 1" should be written in font size 20. Line spacing of the paragraphs should be 1.5 all through the text and do not miss the "one tab" space at the beginning of all the paragraphs. The headings of the articles should be in size 14 and the subheadings should be in size 12. All the headings should be in bold face.

### 1.2 Title of Article 1.2

The citations should appear as Ignizio [3,4], Osyczka[6], Ignizio and Cavalier [5] and Badri et al. [1]. Note here that only the last names of the authors are being used. While citing a research article/book authored by more than 2 authors, "et al." should be used with the last name of the first author so as to indicate the article/book is authored by more than 2 people but the names of all the authors should appear in the References section while describing the respective article/book. If more than one article by the same author(s) is being cited at a single place then the numbers of both the articles (separated by a comma) should appear in the same square bracket. Note Ignizio [3,4] as cited above. If more than one

citation by different authors is occurring together, then the citations should appear chronologically, i.e. the older article should be cited first.

### 1.3 Title of Article 1.3

The mathematical equations (if any) should be written using Equation Editor or Math Type only. All the equations should be centrally aligned and only those equations should be numbered which are being referred to in the thesis. Due care should also be given to the variables that appear in the running text. Such variables should also be written using the Equation Editor or Math Type using the inline equation option. It is also important to note that the bold face variables represent the vector quantities so the variables should not be written in bold face letters. Some examples are given below.

$$\sum_{i=1}^m x_{ij} \leq b_j \quad (j = 1, 2, \dots, n) \quad (1.1)$$
$$x_{ij} - y_j \leq 0 \quad (i = 1, 2, \dots, m; j = 1, 2, \dots, n)$$

where  $x_{ij}$  represents the binary variable,  $y_j$  represents the variable assuming any real value. Also important to note the “small w” in “where” written after the equations to describe the variables present in the equations.

### 1.4 Title of Article 1.4

Sometimes a definition/comment is to be cited in the text. The same should be done as given below.

Oszczka [] has defined the multi-objective optimization as a problem of finding:

“A vector of decision variables which satisfies constraints and optimizes a vector function whose elements represent the objective functions. These functions form a mathematical description of performance criteria which are usually in conflict with each other. Hence, the term “optimize” means finding such a solution which would give the values of all the objective functions acceptable to the designer.”

Note the single spacing in the above paragraph and the reduced margins in which the text appears.

## 1.5 Title of Article 1.5

# Chapter 2

## TITLE OF CHAPTER 2

### 2.1 Title of Article 2.1

### 2.2 Title of Article 2.2

#### 2.2.1 Title of Article 2.2.1

The bullet marks may be used to list items. Try to use as simple bullet marks as possible as given below.

- List item 1
- List item 2
- List item 3
  - List item 3.1
  - List item 3.2
- List item 4

#### 2.2.2 Title of Article 2.2.2

If some code/algorithm is to be given in the text, the same should be written in italics with "one tab" space and should be a single space paragraph. The font size may also be reduced to 10. The most common example is written below.

```
#include<iostream.h>  
#include<conio.h>  
void main()  
{  
    clrscr();  
    cout<<"Hello World - This should bring some smiles";  
    getch();  
}
```

### 2.3 Title of Article 2.3

All the tables that are present in the thesis should be cited at the relevant places. The caption of the tables should be written above the table and should be written in font size 10 as given below in an example. While citing a table, complete "Table 2.1" should be written rather than "Tab. 2.1" or "table 2.1".

Table 2.1 : Example of Table

Col1	Col 2	Col3	Col4	Col5

The alignments of the columns may be adjusted as per the type of data being projected. More importantly, do not use the complete text width until unless it is required. The squeezed tables appear better than the other ones. Table 2.1 is an example of such a case. A table should preferably be completed in a single page, so the space should be adjusted accordingly. If however, a complete table cannot be put at the current position, then the running text should be continued there and the table should be provided at the top of the next page.

#### 2.4 Title of Article 2.4

All the figures that are present in the thesis should be cited at the relevant places. The caption of the figures should be written below the figure and should be written in font size 10 as given below in an example. While citing a figure, complete "Figure 2.1" should be written rather than "Fig. 2.1" or "figure 2.1".

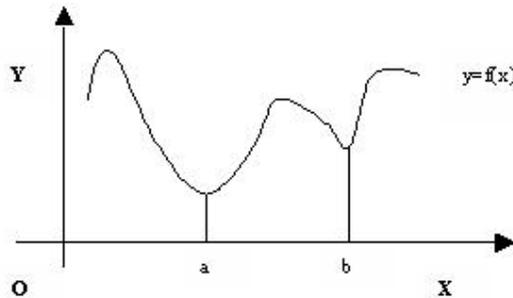


Figure 2.1 : Example of Figure

#### 2.5 Title of Article 2.5

In case of using an abbreviation and if the list of abbreviations has not been included in the thesis, the full form of the abbreviation should be mentioned at the first instance where it is introduced, thereafter the abbreviation can be used anywhere in the thesis. ANN (Artificial Neural Network) is a mathematical model that is inspired by the functional aspects of biological neural networks. In most cases, an ANN is an adaptive system that changes its structure based on external or internal information that flows through the network during the learning phase.

## REFERENCES

The references should be sorted alphabetically by the last name of the first author. A few examples of the references that include research articles in journals or in conference proceedings, books, M.S./Ph.D. Thesis etc. are given below.

- [1] Badri, M.A., Mortagy, A.K. and Alsayed, A., 1998. "A multi-objective model for locating fire stations", *European Journal of Operational Research*, Vol. 110, No. 2, pp. 243-260.
- [2] Chatani, E., Hayashi, R., Lange, R. and Balny, C., 2002. "Thermal and pressure stability of Phe46 mutants of ribonuclease A", *Proceedings of First International Conference on High Pressure Bioscience and Biotechnology*, Kyoto, Japan, pp. 27-32.
- [3] Ignizio, J.P., 1968. "A Method to Achieve Optimum Air Defense Sensor Allocation", MS Thesis, University of Alabama, Alabama.
- [4] Ignizio, J.P., 1971. "A Heuristic Solution to Generalized Covering Problems", Ph.D. Dissertation, Virginia Polytechnic Institute, Blacksburg.
- [5] Ignizio, J.P. and Cavalier, T.M., 1994. "Linear Programming", Prentice-Hall, Englewood Cliffs, New Jersey, pp. 457-505.
- [6] Osyczka, A., 1985. "Multicriteria optimization for engineering design", *Design Optimization*, Academic Press, Cambridge, pp. 193-227.

It is very important that all the references should be cited in the text and those cited in text should be mentioned in the references. Complete information of all the references should be provided, i.e. name of the journal, vol. no, issue no., pp. etc. The same goes for the books as well the details of the publisher should be provided here, however, the pp. in this case is optional. In case of a reference from a conference then the complete title of the conference should be provided together with the venue where it was held.

## Appendix A

### TITLE OF THE APPENDIX

The appendices are entirely optional except the Publications one. If there are no other appendices, then the Publications will become Appendix A.

## Appendix B

### TITLE OF THE APPENDIX

The appendices are entirely optional except the Publications one. If there are no other appendices, then the Publications will become Appendix A.

## Appendix C

### PUBLICATIONS

The list of publications should be given in the same format as those given in the references.