

**[WRITE THE TITLE OF YOUR PROJECT]**

Project proposal submitted

**By**

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Name .....Roll no.....



**DEPARTMENT OF CHEMICAL SCIENCE AND ENGINEERING**

**SCHOOL OF ENGINEERING**

**KATHMANDU UNIVERSITY**

**MONTH YEAR**

Date: DD:MM:YYYY

To

The Project Supervisor,

Department of Chemical Engineering

Kathmandu University

Subject: Cover letter for project proposal approval

Dear sir/madam,

We are pleased to submit our project proposal for reviewing entitled “**PROJECT TITLE**”. The project report is submitted as required for credit requirement fulfillment of course entitled Engineering Project ‘Code’. The proposal includes the basic introductions, objectives, process and methodologies available, process selection and its reason, and expected outcome of the project work.

We hope for your keen review and continual future assistance in our work along with the approval.

Sincerely,

(Write group members name and signature)

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## LIST OF ABBREVIATIONS

KE	Kinetic Energy
KU	Kathmandu University
SOE	School of Engineering
TDS	Top Dead Centre

(Please mention in alphabetical order, capitalizing initials of each word)

## LIST OF SYMBOLS

B	Breadth of the object	[m]
C	Absolute component of velocity	[m/s]
D	Diameter of the shaft	[m]
E	Kinetic energy	[Joules]
Pa	Actual power output	[kW]
Q	Flow rate	[m <sup>3</sup> /s]
$x_1$	Reduced parameter at inlet	[-]
$\alpha$	Rake angle	[°]
$\rho$	Density of liquid	[m <sup>3</sup> /kg]
$\varphi$	Shear plane angle	[°]
$\sigma$	Stress	[N/m <sup>2</sup> ]

(Note: Please mention in alphabetical order, first English letters, then Greek letters/symbols in alphabetical order. Only the initial of first work is capitalized).

# CHAPTER 1 INTRODUCTION

## **1.1 Context/Rationale/Background**

Chapter headings must be in capital case, 14 pts, bold. Give a line spacing of 1.5 between sub chapters. Use single kind of font type, Times New Roman, in your entire thesis. Body of your thesis should be in 12 pt font size while chapter number/titles should not be larger than 2 pt font size of the body (14 pt is preferable). The line spacing should be precisely 1.5.

Do not give any tab spacing when you start a new paragraph. Provide a line spacing of 1.5 for each new paragraph.



Figure 1. 1 Central Administration Building, Kathmandu University

When you add pictures/graphs/ figures, centre align the figure and give caption below the figure as mentioned above. Provide a line spacing of 1.5 before the figure and after the figure's caption.

Justify your texts so that the texts are equally aligned at both left and right margins. Do not give any space between the consecutive paragraphs within a sub topic. However, when you change topic within a



chapter, give a space after the last paragraph of previous topic and before the first paragraph of new topic.

In this section the author shall discuss the statically historical background related to the work along with the introduction of the topic in brief.

## 1.2 Objectives

Project work / Thesis should be written in English. Care must be taken while mentioning the repeated use of same word. For example, use either 'program' or 'programme' throughout the report. Also, maintain consistency in using the symbols.

In this section the author shall enlist to sets of objectives- 1. Citing the exact specific objectives attainable at the end of the project and 2. Citing the general objective which is automatically achieved during the work for fulfilling the specific objective(s).

## 1.3 Significance/Scope

Single-sided printing of a thesis (including drafts, initial submissions and the final thesis) is advised.

In this section the author shall discuss the relevance and the underlying problems that may rise to the need to do this project/work.

Table 1. 1 Data distribution by age group

Data distribution	Frequency
0-10	5
11-20	8

## 1.4 Limitations

Deadlines will be notified on the first day of the project. Contact respective department in this regard.

You need to prepare 5 copies of your thesis. Bind all the copies of your thesis in hard binding with black color cover. Each copies of thesis need to be provided to

- The Department
- The Library ( with CD/DVD)

- The external examiner
- The Supervisors
- One for the self (the undergraduate students can print copies for sufficient for each group members)

In this section the author shall enlist or elaborate the possible limitations of the project or the difficulty foreseeable during the work.

## CHAPTER 2 METHODOLOGY

### 2.1 Theoretical/Conceptual Framework

A font type of Times New Roman, size 12-point must be used and 1.5 line spacing should be used throughout the thesis including thesis, acknowledgement and similar chapters.

In this section the author shall describe the theoretical principle behind the whole work relative to the project. The author shall make sure that the project was not randomly picked rather it was a decision coming out of carefully engineered team work and literature review.

The information collected from literature review shall be relevant in this section.

### 2.2 Study Design

Paragraph spacing should be 12 points and justified. When inserting table, Bold Table number and give names as Table 1.1, Table 1.2 in sequential order, above the table, for all the tables appearing in chapter 1 and center the text.

In this section the author shall chronologically list or create a block diagram representing the series of event or activities that needs to be performed during the entire work period.

Table 2. 1 Data distribution by size

Name	Value
B	2000
C	3000
D	4000

### 2.3 Gantt Chart/Work Schedule/ Activity Plan

Follow following guidelines for tables, equations and figures you include in your thesis.

- All tables (tabulated data) and figures (charts, graphs, maps, images, diagrams, etc.) should be prepared, wherever possible, on the same paper used to type the text and conform to the specifications outlined earlier. They should be inserted as close to the textual reference as possible.
- Tables, figures and equations should be numbered sequentially either throughout the thesis or chapter-wise using Arabic numerals. They are referred to in the body of the text capitalizing the first letter of the word and number, as for instance, Table 1.7, Figure 2.4, Equation (3.3), or Table 5.3, Figure 3.11, Equation (4.16), etc. Here, Table 1.7 indicate 7<sup>th</sup> table of Chapter 1, Figure 2.4 indicate 4<sup>th</sup> figure of Chapter 2.
- If tables and figures are of only half a page or less, they may appear on the same page as text but separated above and below by triple line spacing. Font size for text should be the same as for the general text.
- Good quality Line Drawings/figures must be drawn using standard software that provides vector rather than bit-map graphics. Figures must be scalable.

Images, Photographs, etc. must be scanned in resolution exceeding 200dpi with 256 grayscales for the monochrome images and 24 bit per pixel for the color images.

All margins should be consistently 25mm (or a maximum of 30mm) in width. The same margins should be used throughout a thesis. All preliminary pages (title, approval, abstract, acknowledgement, etc.) should be numbered using lowercase Roman numerals (e.g. i, ii, iii, iv, ...) but i is not shown on the title page. On all other pages use Arabic numerals, i.e. 1, 2, 3, 4, ...

Pagination of the body of the text and appendices is to be in Arabic numerals centered at the bottom of the page. The pagination begins with the first page of the first chapter and continues throughout the rest of the text. Pages with tables, maps, photographs, etc. are to be numbered as well. Open a new page only after each chapter or section but not a sub-section. Pagination of materials preceding the body of the text is to be in small Roman numerals centered at the bottom of the page.



Figure 2. Francis Turbine Test Rig in Turbine Testing Lab (TTL), KU

When you need to incorporate any equation or formula, use equation editor. The equation should be mentioned as below. Based on the geometric parameters of the orthogonal model, the shear plane angle can be determined as:

$$\tan\phi = \frac{r\cos\alpha}{1-r\sin\alpha} \quad (2.1)$$

In this section the author shall create an estimation of activity along with time line on weekly basis. This chart though liable for deviation should look realistic and contain all the needed activity.

## CHAPTER 3 BUDGET ESTIMATION

In this section the author shall list the tentative materials, the dimensions or units of materials along with the unit cost and overall costs in a tabular form.

## CHAPTER 4EXPECTED OUTCOME

In this section the author shall enlist or describe the probable outcome of the overall project/work, if possible with the expected figures and facts.

## REFERENCES

These should conform to a scholarly style appropriate to the discipline. Footnotes may be placed at the bottom of the page, at the end of each chapter or after the end of the thesis body. Consistency of formatting for footnotes and references is required throughout the thesis. Use font size of 10 pt for references

The IEEE style is recommended for the references. Reference citations within the text should be in the form of numbers within square brackets (e.g. [1]).

References should be in a separate section at the end of the thesis, with items referred to by numerals in square brackets, using the IEEE style as follows

Papers: Author(s) (first initials followed by last name), title, periodical, volume, inclusive page numbers, month, year.

Books: Author(s) (first initials followed by last name), title, location, publisher, year, chapter, page numbers.

If you would like include glossary and notes, followings are the recommendation

[1] R. K. Maskey, "Hydropower Development: A Boulevard for Prosperous New Nepal" in *Souvenir 2065, Club Fifty*, Nepal, 2007.

[2] H. Neopane, O. G. Dahlhaug, & B. Thapa, "Alternative Design of a Francis Turbine for sand laden water" in International Conference on Small Hydropower- Hydro Sri Lanka, Sri Lanka, 2009.

[3] J. Thake, "The Micro-Hydro Turbine Manual", ITDG Publishing, London, UK, 2000.

[4] A. Zahnd & M. Kimber, Assessed on 08 Aug. 2012. "A mountain to climb- How pico-hydro helps rural development in the Himalayas."

<<http://www.renewableenergyworld.com/rea/magazine/story?id=52026>>



- [5] Turbine History. Assessed on 08 Aug. 2012. <<http://science.jrank.org/pages/7030/Turbine-History.html>>
- [6] A. Rezi and M. Allam, "Techniques in array processing by means of transformations, " in Control and Dynamic Systems, Vol. 69, Multidemsional Systems, C. T. Leondes, Ed. San Diego: Academic Press, 1995, pp. 133-180.
- [7] G. O. Young, "Synthetic structure of industrial plastics," in Plastics, 2nd ed., vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15-64.
- [8] D. Sarunyagate, Ed., Lasers. New York: McGraw-Hill, 1996.
- [9] E. P. Wigner, "Theory of traveling wave optical laser," Physical Review, vol.134, pp. A635-A646, Dec. 1965.
- [10] J. U. Duncombe, "Infrared navigation - Part I: An assessment of feasibility," IEEE Transactions on Electron Devices, vol. ED-11, pp. 34-39, Jan. 1959.

The references should be placed according to their occurrence in the texts in respective chapters. For more details about referencing according to IEEE format, please follow the following URL:

<<http://libguides.murdoch.edu.au/content.php?pid=144623&sid=1229947>>

## **APPENDIX A**

If you choose to include Appendix, the following suggestions are based on best practice or historic precedent.

- As a page heading, use “APPENDIX” in all capital letters, centered on the page.
- Place in an appendix any material that is peripheral, but relevant, to the main text of the dissertation or thesis. Examples could include survey instruments, additional data, computer printouts, details of a procedure or analysis, a relevant paper that you wrote, etc.
- The appendix may include text that does not meet the general font and spacing requirements of the other sections of the dissertation or thesis.

## **GLOSSARY**

A glossary is not required for your thesis or dissertation. If you choose to include one, include it in appendix and the best practices and historic precedent suggest using a page heading, use “GLOSSARY” in all capital letters, centered on the page.

## **INDEX**

An index is not required for your thesis or dissertation. If you choose to include one, include it in appendix and the best practices and historic precedent suggest using a page heading, use “INDEX” in all capital letters, centered on the page.

Make separate appendices for each topics.