**KANTIPUR ENGINEERING COLLEGE**

**DEPARTMENT OF CIVIL ENGINEERING**

**DHAPAKHEL, LALITPUR**

**GUIDELINES FOR PREPARATION OF PROJECT REPORT**

**(Final Year Project)**

**Introduction**

Project report in this manual refers to a documented report of the process followed and the results of final year project conducted by a student in fulfillment of the requirements in bachelor degree. This report will outline the report format for Final Year Project. These rules must be adhered strictly.

**Contents of Project report**

The Project Report should contain the items as outlined below and is to be presented in the order as listed. Details and specimens are shown in the appendices.

**Number of Copies to be submitted to the Department**

Two copies of the report with hard binding are to be submitted to the Department after corrections done as suggested by guide/Department at any time when report submission is called by guide/Department. A soft copy (pdf format) should be submitted to Department in CD along with report.

**Requirements for Report Writing:**

Your report should meet following standards:

**Font Name**: Times New Roman

**Left Margin**: 1.5 inch

**Right Margin**: 1.25 inch

**Top Margin**: 1.25 inch

**Bottom Margin**: 1.25 inch

**Header and Footer**: 0.5 inch

**Line Spacing**: 1.5

**Paragraph Spacing:** 18 pt

**Font Size**: 12 pt (for normal text)

Follow following standard for headings

**1. Heading1 (16 pt, Bold)**

**1.1 Heading2 (14 pt, Bold)**

**1.1.1 Heading3 (13 pt, Bold)**

**1.1.1.1 Heading4 (12 pt, Bold)**

1. **ARRANGEMENT OF CONTENTS:**

The sequence in which the project report material should be arranged and bound should be as follows:

* 1. Cover Page (**Specimen copy-1**)
  2. Title Page (**Specimen copy-2**)
  3. Certificate of Approval (**Specimen copy-3**)
  4. Acknowledgment (**Specimen copy-4**)
  5. Abstract **(Specimen copy-5)**
  6. Table of Contents (**Appendix 1**)
  7. List of Figures (if any) (**Appendix 2** )
  8. List of Tables (if any) (**Appendix 3** )
  9. List of Symbols (if any) (**Appendix 4** )
  10. Abbreviations (if any) (**Appendix 5** )
  11. Main body

11.1Chapter 1 Introduction (**Appendix 6** )

11.2Chapter 2……………….

11.3Chapter 3……………….

…………………………………..

…………………………………..

11.… Conclusion and Recommendation

* 1. Appendices (if any)
  2. References (**Appendix 7**)

*\* Students can add their own topics or sub-topics as per necessity.*

*\* Justify the report for clean look at both left and right side of page.*

\**The level of English writing must be appropriate to the level of the Bachelor’s degree.*

1. **BINDING SPECIFICATIONS:**

Students have to submit tape binding of the report to the department at the time of report submission. Hard binding of the major project report is to be submitted to the department after final year major project defense.

1. **PREPARATION FORMAT:**

**Cover Page -** A specimen copy of the Title page of the project report is given in **Specimen copy-1.**

**Title Page** – A specimen copy of the Title page of the project report is given in **Specimen copy-2.**

**Certificate –** A specimen copy of the Acknowledgment of the project report is given **Specimen copy-3.**

**Acknowledgment**- A specimen copy of the Acknowledgment of the project report is given **Specimen copy-4.**

**Abstract –** It is a heart of the report. Abstract should be one page synopsis of the project report and it must clearly give the overview of the project (Avoid unnecessary things in abstract) **(Specimen copy-5)**.

**Table of Contents –** The table of contents should list all material following it as well as any material which precedes it. The title page and Certificate of approval will not find a place among the items listed in the Table of Contents but the page numbers of which are in lower case Roman letters. One and a half spacing should be adopted for typing the matter under this head. A specimen copy of the Table of Contents of the project report is given in **Appendix 1.**

**List of Figures –** The list should use exactly the same captions as they appear below the figures in the text. One and a half spacing should be adopted for typing the matter under this head **(Appendix 2)**.

**List of Tables –** The list should use exactly the same captions as they appear above the tables in the text. One and a half spacing should be adopted for typing the matter under this head **(Appendix 3)**.

**List of Symbols -** The list should provide the detail of the symbols used in the report. One and a half spacing should be adopted for typing the matter under this head **(Appendix 4)**.

**Abbreviations** – Abbreviation list should provide the details of the abbreviations used in the report in alphabetical order. One and a half spacing should be adopted or typing the matter under this head **(Appendix 5)**.

**Page numbering -** The preliminary parts (Acknowledgement, Abstract, Table of Contents, List of symbols, List of figure, List of Tables) are numbered in roman numerals (i, ii, etc). The first page of the first chapter (Introduction) onwards will be numbered in Arabic numerals 1 2 3 etc at the bottom, centered.

**Numbering sections, subsections, equations, figures etc. -** A word on numbering scheme used in the project is in order. It is common practice to use decimal numbering in the project. If the chapter number is 2, the section numbers will be 2.1,2.2, 2.3 etc. The subsections in section 2.2 will be numbered as 2.2.1, 2.2.2 etc. Unless essential, it is not necessary to use numbers to lower levels than three stages.

Similarly, it is useful and convenient to number the figures also chapter-wise. The figures in chapter 4 will be numbered as Figure 4.1: Figure Name, Figure 4.2: Figure Name etc. This helps you in assembling the figures and putting it in proper order. Similarly, the tables are also numbered as Table 4.1: Table Name, Table 4.2: Table Name etc. All figures and tables should have proper captions. Usually the figure captions are written below the figure and table captions on top of the table. All figures should have proper description by legends, title of the axes and any other information to make the figures self explanatory.

The same numbering scheme can be used for equations also. Only thing to be remembered is that references to the figures are made like Figure 4.2: Figure Name, and equations as Eqn (5.8).

**Chapters** – The main text will be divided into several chapters and each chapter may be further divided into several divisions and sub-divisions.

Chapter 1: Project Overview (Introduction, Objectives and Scope, Project Features, Feasibility, System Requirement)

Chapter 2: Literature Review

Chapter 3: Preliminary design

Chapter 4: Final Analysis and Design (Results, Result Analysis, Application, Problems faced, Limitations, Conclusion)

Bibliography (Optional)

References

**List of References** –The reference material should include the author name, title, year in details as shown in **Appendix 7**. **Do not mention the references of the websites in the report.**

**Appendices** – Appendices are provided to give supplementary information, which is included in the main text may serve as a distraction and cloud the central theme. Appendices should be numbered using Arabic numerals, e.g. Appendix 1, Appendix 2, etc. Tables and References appearing in appendices should be numbered and referred to at appropriate places just as in the case of chapters.

**KANTIPUR ENGINEERING COLLEGE**

**(Affiliated to Tribhuvan University)**

**SPECIMEN-1 (Cover Page)**

**Dhapakhel, Lalitpur**

****

##### Final Year Project Report

**on**

“Project Title”

[Code No:…….]

###### **Submitted by**

**Ram Adhikari (20/BCE/064 or Exam Roll No.)**

**Shristi Ghimire (29/BCE/064 or Exam Roll No.)**

**Submitted to**

# Department of Civil Engineering

**March 2012**

**Project Title**

**[Code No.:]**

**SPECIMEN-2 (Title Page for Minor Project)**

A final year project submitted in partial fulfillment of the requirement for the

Degree of Bachelor in Civil Engineering

Submitted by

Ram Adhikari (20/BCE/064 or Exam Roll No.)

Shristi Ghimire (29/BCE/064 or Exam Roll No.)

Submitted to

Department of Civil engineering

Kantipur Engineering College

Dhapakhel, Lalitpur

Nepal

March 2012

**Project Title**

**SPECIMEN-2 (Title Page for Major Project)**

[Code No.:]

Submitted by

Ram Adhikari (20/BCE/064 or Exam Roll No.)

Shristi Ghimire (29/BCE/064 or Exam Roll No.)

# Project Supervisor

Supervisor Name

Full Designation

Organization Name with Full Details

A final year project submitted in partial fulfillment of the requirement for the

Degree of Bachelor in Civil Engineering

Department of Civil Engineering

Kantipur Engineering College

Dhapakhel, Lalitpur

Nepal

March, 2012

**KANTIPUR ENGINEERING COLLEGE**

**SPECIMEN-3 (Certificate of Approval for Final Year Project)**

**CERTIFICATE OF APPROVAL**

The undersigned certify that they have read and recommended to the Department of Computer and Electronics Engineering for acceptance, a project report entitled “…………………….” submitted by ………. (students name) in partial fulfillment for the Degree of Bachelor in Civil Engineering.

…………………………..

(Supervisor Name)

Supervisor

Full designation

Organization

……………………………..

(External Examiner Name)

External Examiner

Full designation

Organization

……………………………..

(HOD Name)

Head of Department

Full designation

Organization

ACKNOWLEDGEMENT

**SPECIMEN-4 (Acknowledgement Sample)**

It gives us immense pleasure to express our deepest sense of gratitude and sincere thanks to our highly respected and esteemed guide Er. …….(Supervisor name with full designation if any), for his/ her valuable guidance, encouragement and help for completing this work. His/ her useful suggestions for this whole work and co-operative behavior are sincerely acknowledged.

We would like to express our sincere thank to Er……..(with full designation and department), for giving us this opportunity to undertake this project. We would also like to thank Er. ………..(Head of Department name with full designation) for whole hearted support.

We are also grateful to our teachers (teachers name with full designation) for their constant support and guidance.

At the end we would like to express our sincere thanks to all our friends and others who helped us directly or indirectly during this project work.

Student(s) Name with Exam Roll No.

Ram Adhikari (20/BCE/064 or Exam Roll No.)

Shristi Ghimire (29/BCE/064 or Exam Roll No.)

**SPECIMEN-5 (Abstract Sample)**

**ABSTRACT**

The project dealt with the analysis and design of an industrial building for Beer factory at Chitwan, Nepal. The project work also included design of over head tanks or elevated circular tanks, underground tanks and access roads.

For the design of columns of square, circular as well as rectangular shape and beams of rectangular shape were selected. The sizes of column chosen were 600 \*400 mm, 500 \*500 mm and 500 \*350 mm and of beams were 250\*600 mm, 350\*600 mm and 300\*600 mm size. Roofs were designed for making sheds using iron truss and CGI sheets throughout the factory except in malt handling and staircase where slab were designed.

The building frames were designed for dead loads, live loads (or imposed loads), and wind and earthquake loads. A model diagram equivalent to frame section of the building was developed and analyzed for the forces by using SAP 2000.

Access road was designed as flexible pavement or Asphalt concrete type as per ISWM assuming traffic load to be 82 KN Equivalent Single Axle Load. Road was designed for 3.75m for single lane two way traffic with well compacted shoulders of length 1.5m.

**Keywords:** Industrial building, Over head tanks, Underground tanks, Access road, Model diagram, SAP 2000

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**LIST OF SYMBOLS**

**Appendix – 4: List of symbols**

Ag Gross area of the section

Ac Net area of concrete

Ast Area of tensile steel in flexure member

Asc Area of compression steel

Asv Area of vertical stirrups

B Breadth of the beam

D Overall depth of the beam or slab

Φ Diameter of the bar

d Effective depth if the beam or slab

d’ Effective Cover

E Young’s modulus of elasticity of steel

emin Minimum eccentricity

ex, ey Eccentricity along their respective axes

fck Characteristic compressive strength of the concrete

fsc Design stress in compressive steel at the level of centroid of compression steel

fcc Design stress in concrete at the level of centroid of compression steel

fy Characteristic yield strength of the steel

h Height of the column

Ix,Iy Moment of inertia about respective axes

l Length of the column or span of the beam(clear)

Ld Development length of the bar

Leff Effective length of the beam or slab or effective length of the column

I Moment of inertia of the section considered

Mu Factored design moment

Mu,lim Limiting factored moment of resistance

Pu Factored design axial load

p percentage of steel in the section

Sv Spacing of the stirrups

**ABBREVIATIONS**

**Appendix – 5: Abbreviations**

BM Bending moment

CM Center of mass

DL Dead load

EQ Earthquake load

LL Live load

SF Shear Force

……………………………………..

………………………………………

………………………………………

**Chapter 1: INTRODUCTION**

**Appendix – 6: Format of Body Text**

1. **1 Background**

One being a designer, we have to deal with various structures of different ranges as ranging from simple ones (like the simple beam ) to more complex ones (like multistoried frame buildings, ribbed slab, shell roofs, steel towers, bridges) etc. These structures are subjected to various loads like concentrated loads, uniformly distributed loads, uniformly varying loads, random loads, internal or earthquake load and dynamic loads. The structure transfers its load to the supports and ultimately to the ground. While transferring the loads acting on the structure, the members of the structure are subjected to internal forces like axial forces, shear forces, bending and torsion moments.

Structural Analysis deals with analyzing these internal forces in the members of the structures. Structural Design deals with sizing various members of the structure to resist the internal forces to which they are subjected in the course of their life cycle [1]. Unless the proper Structural Detailing method is adopted, the structural design will be no more effective and for our purpose minimally The Indian Standard Code of Practice should be thoroughly implemented for proper analysis, design and detailing with respect to safety, economy, stability, strength[2].

The Project work has been undertaken as a partial requirement for Bachelor Degree in Civil Engineering. This project work contains structural analysis, design and detailing of a Industrial Building located in Chitwan district. All the theoretical knowledge on analysis and design acquired during the course works are utilized with practical application. The main objective of the project work is to acquaint in the practical aspects of Civil Engineering.

* 1. **Objective**

1. Integrate the knowledge of structural engineering offered in BE civil Engineering and make familiar to practice of design of building.
2. As our country lies in seismic zone so it is necessary to construct the earthquake resistant building. So the project teaches us how to design the earthquake resistant building by considering different varieties of loads imposed in the building and different forces acting on it.
3. Also many softwares are available for the quick and accurate way of analysis and design of building. This project also keeps aim to make us capable to use software of structural engineering in the analysis of structure.
4. Ductile Design of building: Detailing of reinforcement provided in structural member is done as per standard codes to make it behave ductile under lateral forces.
5. ……………………………………………………………………………….

**References**

[1] S.N Sinha, “Reinforced Concrete design”, Second revised edition, McGraw-Hill, Boston, 2002

[2] A.K. Jain, “Reinforced Concrete Limit State Design”, Third Edition, Nem Chand Bros, Roorkee, 1989.

[3] …………………………………………………………….