GHANA COMMUNICATION TECHNOLOGY UNIVERSITY (GCTU)

UNDERGRADUATE PROJECT HANDBOOK

FACULTY OF ENGINEERING

2021/2022

GENERAL INFORMATION

1.0 Introduction

The faculty of Engineering student project is an integral part of the undergraduate studies that a student is required to undertake during his/her program. The aims of the project are:

- ✓ To provide a valuable foretaste of what is to be expected in industrial/research environment upon graduation.
- ✓ To equip students with sufficient knowledge and experience to embark on a research career (especially continuing with Masters, Ph.D., etc.) and in specialized sectors of industry.
- ✓ To apply the knowledge acquired during the taught phase of the program in practice.
- ✓ To practice problem-solving abilities, project management, and report writing skills.

The BSc. Project is worth 8 credits and therefore key in determining the overall final mark of the student at the end of his/her program. As per University regulations, students must pass both taught element and project to gain the BSc degree. Thus, the project work is a vital part of the undergraduate course.

1.1 Project Proposal

Students are required to make a presentation of their project proposal before a panel of faculty members for review and approval. The project coordinator then assigns an approved project to a supervisor.

The criteria normally used by the committee for the review and approval of the proposal include:

- Ensuring that the proposal provides a clear indication of the goals of the project, details of the method of approach, and a schedule for completion.
- Checking if the project is suitable for undergraduate project work and conforms to the

engineering faculty norm.

- Ascertaining whether or not the schedule is reasonable and there is a good probability of completion of project work.

1.2 Project Period

Students who successfully make it through the proposal presentation phase will commence their project work as scheduled on the semester timetable. All students are required to work under the supervision of their respective supervisors and must consult their Project supervisor on all issues about the project (i.e. Laboratory and equipment usage, introductory letters to companies for clearance to undertake research, etc).

1.3 Supervision Form

Students will be provided with supervision forms. The form is to be completed by the student and signed, following consultation, by both student and supervisors. The forms should be submitted alongside the project work write-up.

It must be noted that students must attend timetabled lectures and scheduled meetings with their supervisors. A student who consistently fails to attend timetabled lectures and scheduled meetings with the supervisor will not be permitted to submit the project write-up and will be excluded from the final project defense.

PRESENTATION OF CHAPTERS ONE AND TWO

1.4 Overview

At the end of the first semester, students will be required to make a presentation of their chapters 1 and 2 which comprises the introduction (background to study, problem statement, objectives, significance of study, scope of study etc.) and the literature review. Students must review at least 3 related works. Review means reading and analyzing texts from a technical perspective and

identifying merits and demerits of the work. This would help greatly in refining the student's work as he/she builds on or learns how not to approach a project in a way that others have done. Students must submit **two (2)** copies of their project write up to the Teaching Assistants before the presentation.

A template of the presentation slides is in the appendix of this document.

1.5 Mock Defense

To monitor student's progress as well as providing him/her with a foretaste of what is going to happen at the final presentation, a mock defense is usually organized. Students are to take note that this exercise is in their sole interest and must patronize fully. **Students who do not participate in the mock defense will not be allowed to take part in the final defense.**

1.6 Final Defense

Students are required to prepare at most 15 PowerPoint slides that should give insight of their entire work after which they will proceed to demonstrate their software applications or hardware. Students doing software-based designs should store their work on a flash drive and present it together with threes copies of their documentation.

The project work write-up must be approved and marked by the students' supervisor before the defense.

The minimum number of pages from chapter one to five must have a minimum of 56 pages

PRELIMINARY SECTION OF WRITE UP

1.7 Title Page

This is made up of the name of the University, logo, name of faculty and department to which it is submitted, the title of the project work, in partial fulfillment of the requirement for what degree/diploma and by (full name of the author(s)), supervisors name and Year of

presentation (centered). A specimen is presented in Appendix A.

1.8 Certification Page

A project must be authenticated by a declaration as being the previously unpublished work of the author. In this regard, students are to ensure that there are no indications of plagiarism in the project as it would lead to disqualification and rejection of the project (plagiarism is the act of taking somebody's work and passing it off as one's own).

The declaration should have the rendition shown in Appendix B. It consists of the student's declaration and certified by the supervisor and the Head of Department who append their signatures and by so doing affirm that in their opinion the project work:

i. is an independent, original contribution to the knowledge of the subject concerned of which
ii. literary presentation is satisfactory

1.9 Abstract

This is a comprehensive summary of the project work and is most likely to be widely published and read. It should have a concise description of the Problem(s) addressed, the Methods for the solution, the Results, and the Conclusions. The whole abstract should be composed as one paragraph and should be between 150 and 250 words.

2.0 Table of Content

This highlights the chapters, subchapters, and the contents of the material within the covers of the project work including the pages where they are located. A specimen is presented in Appendix C.

2.1 List of tables

2.2 List of figures

2.3 List of abbreviation

Note: 2.1/2.2/2.3 should be on separate pages and included only as appropriate

MAJOR COMPONENTS OF THE WRITE-UP

2.1 Text

This comprises the main Chapters (5 chapters are allowed for both Diploma and Degree) and Subchapters (divisions and subdivisions) and their namely:

Introduction, Literature Review (may include Theory), Design and Specification/Data Collection, Results and Discussion/Analysis, Conclusion and Recommendation. A specimen is presented in Appendix C

WRITING MECHANICS

2.2 Overview

The paper type and format to be used for the project work should be International standard paper size A4, dimensions (297 x 210 mm). The final project work material must meet high standards of permanence, legibility, uniformity, and reproducibility.

The first-deposit copies will not be subject to paper or print specifications but must be legible and follow all formatting guidelines prescribed by this manual. Three (3) copies of the final project report are to be book-bound, with type on one side of the page only

2.3 Caption /Legends for the tables and figures

Captions for tables should be numbered and reflect the content of the table and set above the table In the case of figures, the captions should be related to the contents and set below the figure. Numbering for the Tables and Figures should be linked to the chapters i.e. numbers for the Tables and Figures should begin with the number of the chapter where it is cited. Captions for tables should be up i.e. above tables and that of figures down i.e. below figure.

2.4 Pagination

All pages must be numbered consecutively. Each chapter should begin on a separate page.

The University requires that page numbers be centered two lines below the bottom margin.

2.5 Title page

On the title page, the page number is omitted, though it is considered as page "'i".

2.5.1 Front matter (preliminary Pages)

Preliminary pages are numbered with lower case Roman numerals, beginning with (ii) following the title page centered at the bottom. This includes the first page of each back matter chapter/section, (i.e., appendices, endnotes, etc.).

2.5.2 Length of Project Work

It is recommended that the text number ranges between 30 to 50 pages for the Diploma and a minimum of 56 pages for the Degree.

2.5.3 Paragraphing

The first line of paragraphs must not be indicated by indentation. Paragraphs should have at least three sentences. Each paragraph should develop one main idea and should have a topic sentence that expresses this idea. Paragraphs should be line spaced.

2.5.4 Margins

Margins should have the following minimum settings:

Top — 2.5 cm; Bottom — 2.5cm; Left — 4.0 cm; Right — 2.5 cm. Exceptions: A larger top margin may be used on pages with main headings, a larger bottom margin on pages that otherwise would have just a heading at the bottom of the page, larger margins around tables and figures, and smaller margins on appendix

FRONT PAGE OF THESIS

GHANA COMMUNICATION TECHNOLOGY UNIVERSITY (GCTU)

FACULTY OF ENGINEERING (15)

DEPARTMENT OF TELECOMMUNICATIONS ENGINEERING (14)

RESEARCH ON ANTENNAS FOR SOLAR ENERGY GENERATION (15)

A Project Work Submitted in Partial Fulfillment of the Requirements For

BSc. /Diploma in Telecommunication Engineering (12)

BY:

NANA AGYEMAN

SUPERVISOR:

DR. RUHYIA ABUBAKAR

SEPTEMBER,**2021**

(the rest are 12)

Sample Of Declaration

DECLARATION

This project is presented as part of the requirements for BSc. /Diploma in Telecommunication Engineering awarded by Ghana Technology University College. I hereby declare that this project is entirely the result of hard work, research, and inquiries. I am confident that this project work is not copied from any other person. All sources of information have however been acknowledged with due respect.

AUTHOR: XXXXXXX **SIGNATURE**.....

STUDENT ID: XXXXXXX **DATE:** ……..

SUPERVISOR: XXXXXXXX **SIGNATURE**.....

HOD: XX **SIGNATURE**.....

DATE:……

Title Page

APPENDIX D

Compilation of Bibliography/References

You will certainly be using books, journal papers, articles, conference papers, URLs, and so forth, to provide you with information to do your project. In addition, the background section of your project will discuss other people's work in the field.

You must acknowledge all your information sources. This is done by providing a list of references at the back of your project report, and referring to (i.e. citing) the individual items in this list at the appropriate points in your project report. The reference list is usually put at the very end of project reports, after all the chapters and appendices. It is not usual to give a section number to the references. Also if your reference list is trivial/non-existent, it is an indication that you have not really delved into the literature and so would almost certainly affect your grade.

THE REFERENCING SYSTEM AND FORMAT

There are various ways of listing references. If you look in the back of research papers and some textbooks, you will see examples. For example, if reference is to a contribution from a book the following is acceptable:

Surname, initials (author), Title of Book, Publisher's name and city, Publication date, Pages (number)

For a journal, the following details are expected:

Surname, initials (author), Title of article, Periodical Title Volume and issue

numbers, Starting page-End page. Examples

[1] ARMSTRONG, J. M., and MITCHELL, R. J.: Uses and Abuses of Inheritance, Software Engineering Journal, 1994, 9 (1), pp. 19-26

[2] Communications of the ACM, Special Issue on Cognition and Software Development. June 1995, Vol. 38, No. 6.

[3] Cargill, T. A.: Does C++ need multiple inheritances? Proceedings of UK Unix User Group Conference, 1990, pp. 53-59

[4] GOGUEN, J. A., and MESEGUER, J.: Order-sorted algebra I: equational deduction for multiple inheritances, overloading, exceptions and partial operations. Technical Monograph PRG-80, December 1989, Oxford Polytechnic Computing Laboratory, Programming Research Group.

If reference is to a contribution from the internet this is how it is cited:

[5] Inheritance -- multiple and virtual inheritance[online]. Available: http://yosefk.com/c++fqa/inheritance-multiple.html[accessed 3 September 2008]

The reference list is in the order the references are first cited. Note that each reference needs to be this detailed to enable a reader of your project report to find it. You must, therefore, give the author(s), the title, when it was published, where it was published (if a journal article, then state the particular volume and issue number, if a book, state the name of publisher), and (also if a journal article), which page numbers the article covers.

Items in a numbered reference list, such as the one shown above, are cited in the main body of your dissertation with the appropriate number. Here are some sample citations, using this style:

The referencing style is recommended in IEEE standards. IEEE style is several referencing style that uses citation numbers in the text of the paper, provided in a square bracket. A full corresponding referencing is listed at the end of the paper, next to the respective citation number.