UNIVERSITY OF SAN CARLOS
COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF COMPUTER SCIENCE

Final Thesis Document Format

This final thesis document format aims to guide the research students of the Department of Computer Science in writing research paper. Comments and suggestions are continually welcome for the improvement of the research program.

Prepared by: Mary Jane G. Sabellano

A.Y. 2013 - 2014

REQUIRED SECTIONS, RECOMMENDED DOCUMENT ORDER AND PAGE NUMBER GUIDELINES

Section	Page Numbering
2 BLANK PAGES	No page number
TITLE PAGE	No page number but counted as page i
APPROVAL PAGE	No page number but counted as page ii
ACKNOWLEDGEMENTS	Counted as page iii, page number is shown
ABSTRACT	Counted as page iv, page number is shown
TABLE OF CONTENTS	Counted as page v, page number is shown
LIST OF FIGURES	Counted as page vi, page number is shown
LIST OF TABLES	Counted as page vii, page number is shown
CHAPTER 1 INTRODUCTION	Begin page number at 1, page number is shown
1.1 Rationale of the Study	Continue page numbering, page number is shown
1.2 Statement of the Problem	Continue page numbering, page number is shown
1.2.1 General Objectives	Continue page numbering, page number is shown
1.2.2 Specific Objectives	Continue page numbering, page number is shown
1.3 Significance of the Study	Continue page numbering, page number is shown
1.4 Scope and Limitation	Continue page numbering, page number is shown
CHAPTER 2 REVIEW OF LITERATURE	Continue page numbering, page number is shown
CHAPTER 3 RESEARCH METHODOLOGY	Continue page numbering, page number is shown
3.1 Research Environment	Continue page numbering, page number is shown
3.2 Research Respondents	Continue page numbering, page number is shown
3.3 Research Instruments	Continue page numbering, page number is shown
3.4 Research Procedure	Continue page numbering, page number is shown
3.5 Design and Implementation	Continue page numbering, page number is shown
3.6 Testing and Evaluation	Continue page numbering, page number is shown
CHAPTER 4 PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS	Continue page numbering, page number is shown
4.1 Applicable Title related to Specific Objective No. 1	Continue page numbering, page number is shown
4.2 Applicable Title related to Specific Objective No. 2	Continue page numbering, page number is shown
4.3 Applicable Title related to Specific Objective No. 3	Continue page numbering, page number is shown

…	Continue page numbering, page number is shown
4.N Applicable Title related to Specific Objective No. N	Continue page numbering, page number is shown
CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS	Continue page numbering, page number is shown
DEFINITION OF TERMS	Continue page numbering, page number is shown
REFERENCES	Continue page numbering, page number is shown
APPENDICES	Continue page numbering, page number is shown
USER'S MANUAL	Continue page numbering, page number is shown
CURRICULUM VITAE	Continue page numbering, page number is shown

THESIS DOCUMENT FORMAT GUIDELINES

- **Chapter 1 – 3.** Is rewritten in present or past tense voice with revisions made.
- **Chapter 4 – 5.** Is written after the research is completed.
- **Paper and Font.** Use 8.5 X 11. Use one side of the page only. Use Arial for font style and font size 12-point.
- **Margins.** Left 1.5 inches; top, bottom, and right, 1 inch.
- **Spacing.** Use 1.5 spacing for the text. Use single space for table and figure captions.
- **Figures and Illustrations.** Figures, tables, graphs, etc., should be positioned and labeled appropriately.

ORAL EXAMINATION/DEFENSE GUIDELINES

A thesis proponent is eligible for **ORAL EXAMINATION/DEFENSE** only if

a. Thesis adviser recommends the thesis by signing the **CERTIFICATE OF ACCEPTABILITY** Form;

b. Three copies of the thesis are submitted to the CS143 Adviser at least one (1) week before the actual defense date.

c. The three possible verdicts after the defense are:

ACCEPT WITH REVISIONS. Minor revisions are necessary to enhance the document and/or software, but they do not have to be presented in front of the panelists. The panelists are tasked to make sure that all the revisions are made.

REDEFENSE. Another formal defense is necessary because the proponent failed to present his/her thesis properly and/or the documentation and/or software contain major errors.

NOT ACCEPTED. Either the objectives of the study have not been met or the proponent cheated. The verdict is a unanimous decision among the three members of the thesis defense panel. Once issued, it is final and irrevocable.

It is encouraged that the students schedule their defenses earlier, this is to give the students more time to revise the final thesis for verdicts of 'ACCEPT WITH REVISIONS' or 'REDEFENSE'. It also allows the student to improve or redo their final thesis in cases of 'NOT ACCEPTED'.

d. After revisions are made, process **THESIS COMMITTEE RECOMMENDATION COMPLIANCE FORM** (see instruction in the form)

e. Present to your CS143 ADVISER the **APPROVED THESIS DOCUMENT** with three (3) original copies of the **APPROVAL SHEET** and **THESIS COMMITTEE RECOMMENDATION COMPLIANCE FORM** for PRINTING APPROVAL

HARDBOUND COPY GUIDELINES

A thesis proponent is expected to secure a PRINTING APPROVAL from the CS143 ADVISER **before submitting 3 BOUND copies of FINAL THESIS DOCUMENT**.

a. Please refer to **HARDBOUND COVER PAGE** and **HARDBOUND SIDE LAYOUT** Guidelines.

b. HARDBOUND COLOR: GOLDEN YELLOW

c. Submit **three (3)** HARDBOUND COPIES to the Chair of the Department of Computer Science

d. Request a CERTIFICATION OF THESIS HARDBOUND COPY SUBMISSION from the Department of Computer Science through the Department Secretary

e. Submit the certificate to the Registrar's Office (needed before filing for application for graduation)

f. Compile all necessary files in a CD such as: PDF format of Thesis Document and Project files (softwares, database, system project files and etc.)

g. Provide one CD for each Hardbound Copy enclosed neatly in a white envelope CD case. Attach it to the last page of the Hardbound copy. See illustration CD CASE ATTACHMENT AREA.

AUTOMATIC BLOCK SCHEDULING AND COURSE-FACULTY TIMETABLING

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A Thesis
Presented to the Faculty of the
Department of Computer Science
University of San Carlos
Cebu City, Philippines

_____

In Partial Fulfillment
of the Requirements for the Degree
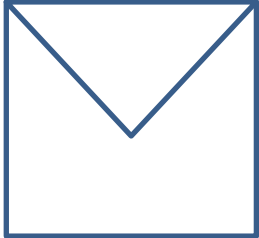BACHELOR OF SCIENCE IN COMPUTER SCIENCE

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By

MARY JANE G. SABELLANO
March 12, 2013

HARDBOUND COPY SIDE LAYOUT

USC BSCS	AUTOMATIC BLOCK SCHEDULING AND COURSE-FACULTY TIMETABLING	SABELLANO, M.	May 2012

CD CASE (WHITE ENVELOPE) ATTACHMENT AREA

HARDBOUND COPY FRONT COVER (INSIDE VIEW)	DOCUMENT PAGES	HARDBOUND COPY BACK COVER (INSIDE VIEW)

AUTOMATIC BLOCK SCHEDULING AND COURSE-FACULTY TIMETABLING

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MARY JANE G. SABELLANO
March 12, 2013

APPROVAL SHEET

This thesis entitled, **"AUTOMATIC BLOCK SCHEDULING AND COURSE-FACULTY TIMETABLING"** prepared and submitted by **EDWARD CULLEN AND BELLA SWAN** in partial fulfillment for the degree of **BACHELOR OF SCIENCE IN COMPUTER SCIENCE**, has been examined and is recommended for acceptance and approval for ORAL EXAMINATION.

THESIS COMMITTEE

MARIAN SIONZON, MBA
Adviser

JACQUELINE YARA, MS   ODITHA DELIGERO, MS
Member   Member

ROSANA FEROLIN, MS
Committee Chair

_____

PANEL OF EXAMINERS
Approved by the Committee on Oral Examination with a grade of **PASSED.**

ROSANA FEROLIN, MS
Committee Chair

JACQUELINE YARA, MS   ODITHA DELIGERO, MS
Member   Member

Accepted and approved in partial fulfillment of the requirements for the degree **BACHELOR OF SCIENCE IN COMPUTER SCIENCE.**

MARY JANE SABELLANO, MS
Chair, Department of Computer Science

May 4, 2012
Date of Oral Examination

ACKNOWLEDGEMENTS

This section of the thesis document may be written in first-person voice. One has to use one's own words in writing an acknowledgement. This section is an expression of thanks to those who contributed to the completion of the thesis.

ABSTRACT

This section of the thesis document must provide a concise summary of the final thesis. The abstract must be from 150 to 200 words of short, direct and complete sentences. Do not put citations or quotes in this section. The abstract structure consists of the following:

    (1) Background/ setting the scene (one or two sentences)

    (2) The focus and innovation (one or two sentences)

    (3) The problem (one or two sentences)

    (4) The method (one or two sentences)

    (5) The results or what you have accomplished (one or two sentences)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1 INTRODUCTION

1.1 Rationale of the Study

Discuss the content in your own thoughts in your own words, confirmed by other background information. It is organized to move from general information to specific information. The background must be summarized succinctly, but it should not be itemized. Limit the introduction to studies that relate directly to the present study. Emphasize your specific contribution to the topic. The last sentences should be a statement of your general objective. Format of citations and quotations will be based from the APA format. Must be 1- 2 pages long.

1.2 Statement of the Problem

This section states what the research intends to do. This section consists of 2 sub sections: General Objective and Specific Objectives.

1.2.1 General Objective

This section is a general statement on the intent and direction of the research. It describes the purpose of the research.

1.2.2 Specific Objectives

This consists of clear statements of the intended outcomes, all which can be measured in some way. The SMART (Specific, Measurable, Achievable, Realistic and Time-bound) objectives should break your research proposal into major stages and state an output, which would guide you in planning and negotiating your work with your supervisor.

1.3 Significance of the Study

This section presents the importance and contribution of the research to the individuals, groups, institutions and to the discipline. Mention who are to benefit from the research and how each maybe benefited.

1.4 Scope and Limitation

This section discussed the extent of the study and what limitations are there. This section must state the weaknesses and limitation of the study.

CHAPTER 2 REVIEW OF LITERATURE

This section describes the problem being researched. The first few sentences or paragraph describe the problem, issue or question the research project is focusing on. Identify what concepts are needed in your research and group the related literature based on identified concepts.

Usually starts in general and gradually progresses into published research most related to your specific research's emphasis. Describe the general themes in the research related to your topic. Any gaps in the published research are noted, particularly if the project addresses the gaps. The literature review moves from what is currently published and known about the topic to what your research is going to add to the topic. Include why the particular research focus is important and how it differs from previous research on the topic.

You may present figures and tables if necessary in this section. Figures must be labeled. Figure labels are placed at the bottom of the figure center aligned. Table labels are placed at the top of the table and left aligned.

For relevant sources refer to Journals in Computer Science or make extensive use of the online sources available in the USC library these include: ACM Digital Library, Academic OneFile, Proquest, Science Direct, EBSCO & Springerlink. For more information on how to use and access this online sources visit Josef Baumgartner Learning Resource Center (JB-LRC) and ask assistance from Ms. Marcie of Serials Library Section.

CHAPTER 3 RESEARCH METHODOLOGY

This section is a presentation and discussion of your subjects, instruments (hardware and software used), procedures (step-by-step), and design/hypotheses. Clearly explain how you conducted your research, so that others can replicate it. Explain how you actually implemented your design and made it work.

3.1 Research Environment

Describes the locale/venue of the research

3.2 Research Respondents

Defines the study population and describes the type and characteristics of the respondents/participants. Describes the sampling technique used in selecting study subjects/participants and identifies possible limitations in the choice of respondents/participants

3.3 Research Instruments

Describes the research instrument(s)/tools (Questionnaire, Interviews, Observation, and Measurement) for gathering data and identify whether they are standardized or researcher-made. The description of the instrument(s) should describe the purpose of the instrument (what it is intend to measure), and available validity and reliability coefficients. It describes the content and preparation of each instrument. It describes other sources of data (e.g. records, documents). It identifies limitations of the research instruments and/or sources of data

3.4 Research Procedure

This section consists of two subsections: Gathering of Data and Treatment of Data.

3.4.1 Gathering of Data

This section describes in detail the phases of data gathering employing the research tools described earlier. The description of procedures should describe in detail all steps which were executed in conducting the study. Consider the following in composing this section:

1. Did you use Qualitative or Quantitative data collection?
2. Did you conduct interview? survey or questionnaire? document review?
3. Respondents were interviewed several times?
4. What other source of relevant documents do you have? name it..

3.4.2 Treatment of Data

This part explains the procedures for processing and analysis of data. Describe the steps necessary in processing your data and the statistical procedures to be used to answer each specific sub-problem of the study. Include a justification of the statistical procedures used and state your level of significance. For qualitative data, include the methods on how data will be presented and analyzed. Consider the following in composing this section:

1. What tool will you use to analyze the data:
    - Consider using Statistical Softwares like IBM SPSS Statistics 19 (analyze using descriptive statistics) see tutorials available
2. How will you present the result of the analysis:
    - Presentation of data : tabular form, graphs or charts
    - SPSS can auto generate this

3.5 Design and Implementation

This section describes the type of development process you will use. Provide descriptions on what you will design: (Model, Algorithm, User Interface, Database Design and etc.) Indicate what technology or tools you will use.

3.6 Testing and Evaluation

This section describes what testing and evaluation methodology you will use in the research.

CHAPTER 4 PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

This section is the presentation and discussion of the results of each Specific Objectives. For an organized presentation, provide discussion of results in separate subsections. This part of the thesis document, presents results in raw data, summarized and clarified in tables and figures. It is also a discussion what the proponent has found or built. May also include sample runs, performance analysis and comparisons. Describe architectural design and detailed design enhanced with UML model diagrams. Justify design decisions with supporting data collected. Describe the specific tools and techniques used. Describe testing and evaluation approach. Describe sample test plans and test and evaluation results.

4.1 Applicable Title related to Specific Objective no. 1
4.2 Applicable Title related to Specific Objective no. 2
4.3 Applicable Title related to Specific Objective no. 3
…

4.N Applicable Title related to Specific Objective no. N

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

This section is a summary of the results and discussion. State what the proponent has achieved. Describe the most important findings of the research in descending order of importance. This section also provides a statement about the possibility of future researches. The proponent presents all questions that was not address in the work and discuss its significance. What needs to be done and what does this research contribute?

DEFINITION OF TERMS

This section of the thesis document provides operational definitions of key terms that appear in your title and statement of the problem and sub-problems (terms are arranged alphabetically) as used in your study.

(Sample DEFINITION OF TERMS)

Block Section is a grouping with arrangement of schedules of courses intended for a group of students. Example Block A has the same set of courses to be taken but of different schedules compared to Block B.

Block Scheduling is the process of organizing a certain number of schedules of classes that would be enrolled by students on a first-come first served basis for all year levels per curricular program that conforms to required courses stated in the prospectus.

Capabilities refer to the power or ability to generate an outcome. The ability or characteristic associated with desirable performance on a job.

Constraints are the conditions that a solution to an optimization problem must satisfy. It is divided into two types:

    Hard Constraints have to be satisfied under any circumstances.

    Soft Constraints need to be satisfied as much as possible. Due to the complexity of the real-world timetabling problem, the soft constraints may need to be relaxed since it is not usually possible to generate solutions without violating some of them.

REFERENCES

This section includes only sources that were used or cited in the research work. At least containing 20-30 author citations for undergraduate thesis (Masters may contain at least 50, PhD at least 100). Categorized references according to the following order:

- Books
- Periodicals
- Unpublished Materials
- Internet/Web-based Sources
- Documents

Reference entries shall be sorted alphabetically by author's names, and book title. The style of reference entries shall conform to American Psychological Association (APA) Format.

APPENDICES

Some writers are prone to append peripheral documents of various kinds to their proposals. Plural (appendices) singular (appendix). If two or more appendices are included in a proposal, they should be designated Appendix A, Appendix B, etc.

Appendix A Transmittal Letter(s)

Appendix B Research Instrument(s)

Appendix C Timetable of Activities

Appendix D Budget

Appendix E Others (relevant documents which may be included in the Final Thesis Document)

USER'S MANUAL

Most of the contents of the User's Manual are based from chapter 4 of the main thesis document(specifically on the system functions and features). The difference lies in the manner of presentation. The User's Manual is oriented towards end users, who might be naïve users. Therefore, it gives a detailed step-by-step instruction on how to use each function and feature of the system.

The suggested outline of the User's Manual is as follows:

1.0. Introduction This section gives an overview of the system. It includes the following subsections:

    1.1. System Requirements

    This section lists the minimum hardware and software requirements needed to properly execute the system.

    1.2. Installation

    This subsection contains instructions on how to install the system, and the list necessary files and their respective directories.

 2.0. Getting Started

This section tarts with instructions on how to run the system, and the initial screen that will be displayed. It then explains the major components of the system, e.g., tool bars, menu options, statusbar, etc.

3.0. <Module / Feature 1>

Succeeding sections, from 3.0 to N-1, focus on the major modules or features of the system. Eachsection contains detailed instructions on how to use the particular modules, the available features and limitations of the module.

N.0. Messages This section lists all system messages —error message, status message, information, and instruction

    message —that the user may encounter while using the system. For each message, include a brief

description and the possible courses of action that the user may take in response to the message. Below is a sample format:

<Message Text>

Description:

Action.

The messages must be arranged in ascending order, and may be grouped into subsections (e.g., N. 1Error Messages, N.2 Status Messages, etc.).

CURRICULUM VITAE

A curriculum vitae (CV) provides an overview of a person's experience and other qualifications.

CONTACT INFORMATION

Name:

Address:

Telephone:

Cell Phone:

Email:

PERSONAL INFORMATION

Birthday:

Religion:

Civil Status:

EDUCATION

University of San Carlos

Bachelor of Science in Computer Science

Tertiary Level (year started – present)

University of San Carlos

Secondary Level (year started – year ended)

University of San Carlos

Primary Level (year started – year ended)

TECHNICAL SKILLS

WORK EXPERIENCE

TRAININGS