

Hong Kong Baptist University

Department of Physics

BSc Honours Degree Programme Guidelines for Theses (2021-2022)

1. *Introduction on the Use of Thesis Guidelines*

The purpose of writing a thesis is to report the essentials of an investigation in a simple, direct and easily understood manner. The thesis as a whole will serve as a permanent record of information. It also serves to enable the supervisors and observers to evaluate the student's ability in the presentation of findings. With some modifications, these guidelines may also be used for library-search projects.

Two copies of the thesis and **two separate copies** of the abstract are to be submitted to the student's departmental office. The abstract will be included in a bound volume after the oral examination.

Owing to the diversity of topics introduced in the Faculty of Science, the thesis format is flexible. Suggested sub-headings are itemized below in Section 2.

2. *Thesis Writing*

All theses should be typed in black ink, paginated, and on A-4 white paper. The page layout should use double-spacing, font size 12 and have 1 inch margins on all sides. The thesis should not exceed 50 pages excluding the appendices.

2.1 *Thesis Title Page*

See Sample Layout 3.1

2.2 *Acknowledgement*

This should include the contributions made from supervisor(s), appreciation extended to supervisor(s), and parties who should receive recognition for their part in the project. See Sample Layout 3.2

2.3 *Table of Contents (optional)*

Major headings and titles of all the tables and figures should be listed.

2.4 Abstract

An abstract should contain not more than 250 words on a separate page summarizing the essentials of the research work including the objectives, methodology, results, discussions and conclusions. See Sample Layout 3.3.

2.5 Introduction

The introduction should state clearly the objectives and significance of the project with reference to the past or ongoing work.

2.6 Main Text

Presentations may vary according to the topic. For experimental studies, the methodology of pursuing the work should give a detailed account of the instrumentation, measurement technique, reagents used, and computer programmes where applicable. The formats of tables and figures should follow Sample Layouts 3.4 and 3.5. If the study involves theoretical work, detailed discussion (with illustrations if appropriate) leading to the final interpretations and conclusions is essential. The student must clearly demonstrate to what extent the objectives have been achieved.

2.7 Conclusion

This should include description of the objectives met and discussion of the significance of the results obtained and their achievements. The student should summarize the merits of the model or theory and the devised technique which might be the theme of the investigation.

2.8 References

References should be listed at the end of the thesis. See Sample Layout 3.6 for details.

2.9 Appendices (optional)

Not all theses need to have appendices. However, when there are materials which are too technical or too detailed to be included in the main text and would help some readers to understand the topic more thoroughly, the author can accommodate them in an appendix section. These could be auxiliary tables, figures, computer programmes, and sample calculations etc., which are related to the course of investigation. However, it must be stressed that the main text itself should be self sufficient and readers should be able to follow the arguments without frequent use of the appendices.

3. *Sample Layouts*

The order and layouts of the title page, acknowledgement, abstract, tables, figures and references should be prepared as shown in the examples:

3.1 *Title page*

3.2 *Acknowledgement*

3.3 *Abstract*

3.4 *Tables*

3.5 *Figures*

3.6 *References*

3.1 Title page

PAH in the Environment

by

CHEUNG Tsz Wing
(Student number)

A thesis submitted in partial fulfillment of the requirements
for the degree of

Bachelor of Science (Honours)
in Physics and Green Energy

at

Hong Kong Baptist University

Date

3.2 Acknowledgement

ACKNOWLEDGEMENT

Part of the work presented in this thesis was done in collaboration with Drs. Y.E. Zhang and C. Sweet while they were Visiting Fellows in the Microbiology Department, John Curtin School of Medical Research, and with Dr. G.A. Tannock (University of Newcastle). The experiments described in Table 11 and Fig. 4 of Chapter 3, and Table 2, Fig. 3, of Chapter 7 were done jointly with Drs. K.N. Leung, and C. Sweet, respectively. The experiment described in Fig. 6 of Chapter 5 was performed by Miss E. Schiltknecht. The titrations of serum HI antibody and infectious virus in tissue culture were done by Dr. G.A. Tannock. All other experiments described in this thesis were my own original work and were carried out by myself under the supervision of Professor G.L. Ada.

Signature of Student

Student Name

Department of Physics
Hong Kong Baptist University

Date: _____

3.3 *Abstract*

SEPARATION AND DETERMINATION OF COPPER AND NICKEL IN SEA WATER BY REVERSE PHASE HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

CHEUNG Tsz Wing
(Student number)

Department of Physics

ABSTRACT

The concentrations of copper and nickel in water and seawater were determined simultaneously without preconcentration as complexes of ethylenediamine salicylic aldehyde H_2enSal_2 . The metal complexes were separated by 50% aqueous methanol with a 30-cm μ - Bondapak C18 column and determined by the UV absorbance detector at 254 nm. The stability constants of Ni ($enSal_2$) and Cu($enSal_2$) in 1:1 methanol and seawater were evaluated under these conditions. The stability constants $KCuL$ and $KNiL$ were found to be $3.4 \times 10^5 \pm 0.8 \times 10^5$ litre per mole and $2.1 \times 10^4 \pm 0.2 \times 10^4$ litre per mole respectively.

3.4 Tables

| Element | Wavelength (nm) | Slit width (nm) | Lamp Current (mA) | Flame |
|-----------|-----------------|-----------------|-------------------|--|
| Aluminium | 309.3 | 0.5 | 10.0 | N ₂ O/C ₂ H ₂ |
| Chromium | 357.9 | 0.2 | 7.0 | N ₂ O/C ₂ H ₂ |
| Lead | 217.0 | 1.0 | 5.0 | Air/C ₂ H ₂ |
| Nickel | 232.0 | 0.2 | 5.0 | Air/C ₂ H ₂ |
| Titanium | 364.3 | 0.5 | 20.0 | N ₂ O/C ₂ H ₂ |
| Zinc | 213.9 | 1.0 | 5.0 | Air/C ₂ H ₂ |

Table 1 Operation Parameters of Atomic Absorption Spectrophotometer for the Analysis of Different Metals in Plastic Bags.

3.5 *Figures*

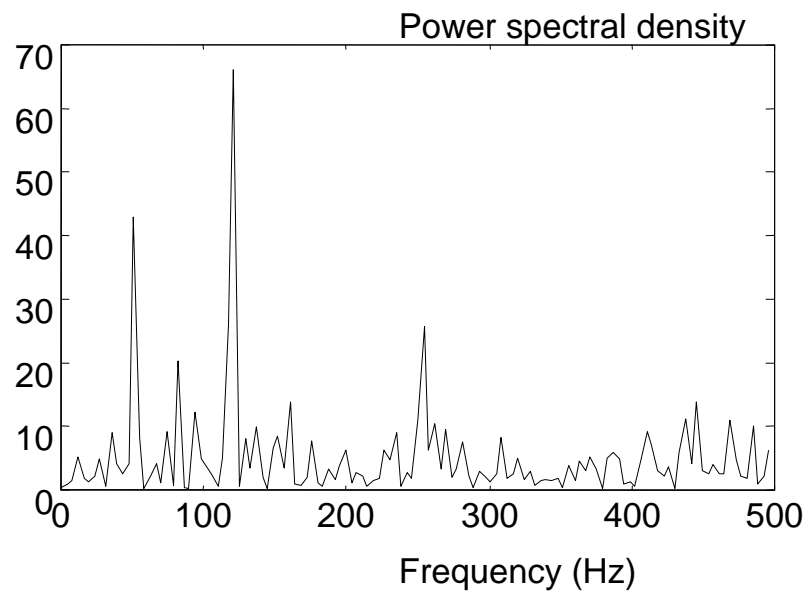


Figure 1 Power spectral density

3.6 *References Style for Physics Programme*

The following reference style should be used:

- | | |
|---------------------------|---|
| Journal article citations | ⁴ R. Plomp, "Rate of decay of auditory sensation, "J. Acoust. Soc. Am. 36, 277-282 (1964). |
| Book reference | ⁸ L. S. Birks, <i>Electron Probe Microanalysis</i> , 2nd ed. (Wiley, New York, 1971), p. 40. |

4. *Further Readings About Thesis Writing Guidelines*

Please refer to the library for more detailed information concerning thesis writing, e.g.

- a. Campbell, W.G., *Form & Style: Thesis, Reports & Term Papers*, 6th ed., Houghton Mifflin, Boston (1982).
- b. Lewins, F.W., *Writing a Thesis: A Guide to its Nature & Organization*, The Australian National University, Canberra (1988).
- c. Watson, G., *Writing a Thesis: A Guide to Long Essays & Dissertations*, Longman, London (1987).
- d. Van Wagenew, R.K., *Writing a Thesis, Substance & Style*, Prentice-Hall (1991).
- e. Willes M.J., *Writing a Thesis*, API Press (1991).

Semester Project Progress Report (and Extension)

| | Page |
|---|------|
| 1. SAMPLE TITLE PAGE | 11 |
| 2. SAMPLE ABSTRACT | 12 |
| 3. SAMPLE PROGRESS REPORT | 13 |
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1. Sample Title Page
(To be completed by students)

**HONG KONG BAPTIST UNIVERSITY
SCIENCE FACULTY**

**Bachelor of Science (Honours)
in Physics and Green Energy**

**SEMESTER PROJECT PROGRESS REPORT
(academic year)**

by

**CHEUNG Tsz Wing
(Student number)**

Department of Physics

Date

2. Sample Abstract

(To be completed by students)

Student Name: _____

Student Number: _____

SEPARATION AND DETERMINATION OF COPPER AND NICKEL IN SEA WATER BY REVERSE PHASE HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

CHEUNG Tsz Wing
Department of Physics

ABSTRACT

The concentrations of copper and nickel in water and seawater were determined simultaneously without preconcentration as complexes of ethylenediamine salicylic aldehyde H_2enSal_2 . The metal complexes were separated by 50% aqueous methanol with a 30-cm μ - Bondapak C18 column and determined by the UV absorbance detector at 254 nm. The stability constants of Ni ($enSal_2$) and Cu($enSal_2$) in 1:1 methanol and seawater were evaluated under these conditions. The stability constants $KCuL$ and $KNiL$ were found to be 3.4×10^5 and 0.8×10^5 litre per mole and 2.1×10^4 and 0.2×10^4 litre per mole respectively.

3. Sample Progress Report
(To be completed by students)

Summarizing the work done, experiments performed and significant results obtained.

Student Name: _____

Student Number: _____

PROGRESS REPORT

4. Sample Proposed Extension of Project
(To be completed by students)

Student Name: _____

Student Number: _____

PROPOSED EXTENSION OF PROJECT

Signature of Student

Date: _____

5. Sample Supervisor's Comments

(To be completed by supervisor)

Student Name: _____

SUPERVISOR'S COMMENT

1. Application for Extension of Semester Project into Year Project

Accept

Reject

2. Feasibility of the project to be widened:

3. Confidential statements regarding the student's ability:

4. Indicate any special considerations which have led to the recommendation of the Student:

Signature of Supervisor

Date: _____

6. Sample Programme Examination Committee's Comments

(To be completed by Programme Coordinator or Head of Department)

| |
|---|
| Student Name: _____ |
| PROGRAMME EXAMINATION COMMITTEE'S COMMENTS: |
| Application for Extension of Semester Project into Year Project |
| <input type="checkbox"/> Accept |
| <input type="checkbox"/> Reject |
| <input type="checkbox"/> Others, please specify |
| _____ |
| _____ |
| _____ |
| _____ |
| _____ |
| _____ |
| _____ Signature of Programme Coordinator or Head of Department |
| Date: _____ |

Plagiarism

The Cost of Plagiarism

Plagiarism is a form of academic dishonesty, and is therefore viewed by all teachers and educational authorities as a serious offence, and with good reason. A plagiarist is in effect attempting to obtain a scholastic grade by fraud, as well as to make a mockery of education itself. There are severe penalties in place at the university regarding the submission of plagiarized work by students.

The gist of these penalties is as follows:

Taught Undergraduate/Postgraduate Studies by Coursework

- (i) If academic dishonesty is found in respect of subject based assessment, an 'F' grade will be assigned to the subject.
- (ii) For more serious or repeated cases, the student concerned will be given an 'F' grade for the subject and more stringent disciplinary action will be taken.

Postgraduate Studies by Research

- (iii) If academic dishonesty is found in the submission of a thesis/dissertation, the Board of Examination could fail the student concerned and allow for a re-submission of work or terminate the candidacy of the student concerned.

An Illustration

1. Examples of Plagiarism

Given below is an excerpt from the book *The Meaning of It All*, by the Nobel Prize-winning scientist Richard Feynman:

- 1.1 What is science? The word is usually used to mean one of three things, or a mixture of them. I do not think we need to be precise – it is not always a good idea to be too precise. Science means, sometimes, a special method of finding things out. Sometimes it means the body of knowledge arising from the things found out. It may also mean the new things you can do when you have found something out, or the actual doing of new things.

[Richard P. Feynman, *The Meaning of It All* (Reading, Mass.: Perseus Books, 1998), 4-5]

After reading the above passage, if a student wrote something like the following paragraph without acknowledgement, he would definitely be guilty of plagiarism:

- 1.2 The word ‘science’ is usually taken to mean one of three things. Firstly, it may mean a special method of finding things out. Secondly, it may refer to the body of knowledge resulting from what is found out. And thirdly, it may mean the new things people can do when they have found this knowledge.

Notice that the student has merely cut or changed a few words here and there from the original text. Basically, it is still Feynman’s writing, not that student’s. And nowhere does he mention that the main idea in this paragraph actually came from Feynman’s book.

Now, what about the following attempt:

- 1.3 The word ‘science’ is often loosely used with one (or more) of three possible meaning. Firstly, it may refer to a special method of investigation and discovery; this we may call the ‘scientific method’. Secondly, it may mean the body of knowledge which results from this method of investigation, that is, ‘scientific knowledge’. Lastly, it may also refer to what can be done with this type of knowledge, i.e. ‘technology’.

You will agree that this is much better than 1.2. The student has made a genuine attempt to avoid copying the original. He has expressed the main idea basically in his own words, and in fact added some pertinent elaborations. However, he has still failed to acknowledge that the basic idea is not his, but Feynman's. He gives the impression, whether deliberately or unwittingly, that the points made are all his own. So this student too is guilty of plagiarism, though less blatantly than the first. He has 'stolen' someone else's ideas, though not his words.

2. Acceptable Practice

Now, what would constitute an acceptable use of someone else's idea? One option, of course, is to quote the original passage literally, with proper acknowledgement (as in 1.1 above). But this option should not be over-done. Used too frequently, direct quotations can be taken as a sign of mental laziness, and they give no indication that the writer has really understood and assimilated what he is quoting. An essay filled to the brim with quotations is hardly an essay – it is more like an anthology.

A better option, in most cases, would be to rephrase the idea *in your own words* and set it in an appropriate context, not forgetting to acknowledge its source. Taking the passage in 1.1 again, here is an example of how this can be done:

- 2.1 How can we define the term 'science'? Different people have different answers. A simple yet comprehensive definition was given by the Nobel Prize-winning physicist, Richard Feynman. He points out (Feynmna, 4-5)¹ that the word 'science' is often loosely used with one or more of three possible meanings. Firstly, it may refer to a special method of investigation and discovery (which we may call the 'scientific method'). Secondly, it may mean the body of knowledge which results from this method of investigation (that is, 'scientific knowledge'). Lastly, it may also refer to what can be done, or what has in fact been done, with this type of knowledge (in other words, 'technology').

¹Richard P. Feynman, *The Meaning of It All* (Reading, Mass.: Perseus Books, 1998).

How is this better than 1.3 (and needless to say, 1.2)? Firstly and most obviously, it gives due credit to the author from whom the main idea of the paragraph was taken, and provides all the necessary information about the source. Secondly, this writer has successfully integrated Feynman's idea into an appropriate context, which is clearly set out in the first two sentences of the paragraph, so that it reads like part of an organic whole, rather than something tagged on. Thirdly, the basic idea may be Feynman's, but the words are the writer's own. He shows clearly that he has understood the given idea, and written about it in his own way without being glued to the original text.

It is not all that difficult to produce something like 2.1, even though it does take a little more thought and effort than 1.2 and 1.3. But then, that is the whole point of any academic exercise – to learn how to think, and to do so honestly.

For more details, you can refer to AR website:

http://buar.hkbu.edu.hk/index.php/current_students_and_alumni/academic_guidelines/avoiding_plagiarism