POSTGRADUATE INSTITUTE OF SCIENCE
UNIVERSITY OF PERADENIYA

FORMAT OF PROJECT REPORT/THESIS

M.Sc., M.Phil. AND Ph.D. DEGREES

2018

CONTENTS

CHAPTER 1

GENERAL GUIDELINES

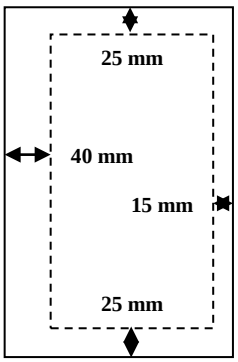
The Project Report/Thesis shall consist of the candidate's own account of his/her research, must form a distinct contribution to knowledge and provide evidence of originality shown by the exercise of independent critical analysis and/or by the discovery of new facts. Project Report/Thesis must be a satisfactory literary presentation.

A candidate shall not submit a Project Report/Thesis or part thereof, on which a degree has been already conferred upon him/her by the University of Peradeniya or any other university/institution. A candidate may incorporate into Project Report/Thesis any of his/her published work, which has not already been embodied in an earlier report/thesis submitted by him/her for the conferment of a degree.

1.1 Paper and Printing

Each copy shall be on clear white paper of good quality having at least **80 gsm and A4 size (210 mm × 297 mm).** One type of paper must be used throughout the Project Report/Thesis. Papers of different quality and size may be used for figures, maps, etc. only if necessary. Illustrations may be reproduced by photographic or other standard processes.

All the pages in the Project Report/Thesis must be computer printed only on one side of the page using Times New Roman (size 12) font with 1.5-line spacing. However, the following components of the project report/thesis should have single-line spacing: declaration, abstract, acknowledgement, table of contents, list of tables, list of figures, list of abbreviations, table titles, figure captions and references. Each reference must be separated by a single-line spacing. Margins on each page must be maintained as follows: left hand, 40 mm; right hand, 15 mm; top and bottom, 25 mm.

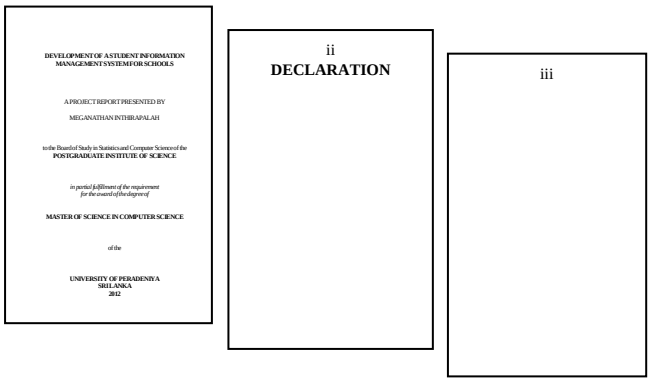


1.2 Numbering of Pages

Each page in a Project Report/Thesis should be numbered in consecutive order including illustrative material as well as text.

Prefatory pages (from 'Title Page' to 'List of Abbreviations') must be numbered using lower-case Roman numerals, which should appear at the midpoint, 10 mm below the top-edge of the page.

- Title Page
- Declaration
- Abstract
- Acknowledgments
- Table of Contents
- List of Tables
- List of Figures
- List of Abbreviations
- List of Appendices


DEVELOPMENT OF A STUDENT INFORMATION MANAGEMENT SYSTEM FOR SCHOOLS

A PROJECT REPORT PRESENTED BY

MEGANATHAN INTHIRAPALAH

to the Board of Study in Statistics and Computer Science of the POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement for the award of the degree of

MASTER OF SCIENCE IN COMPUTER SCIENCE

of the

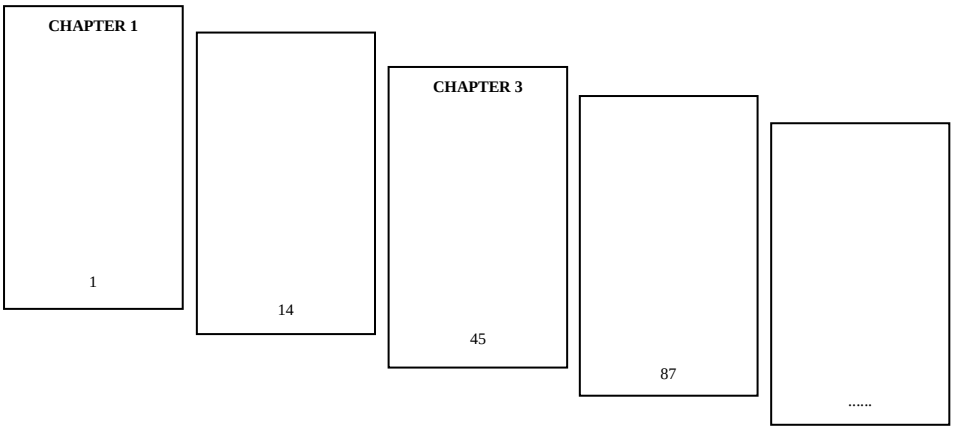
UNIVERSITY OF PERADENIYA SRILANKA 2012

ii

DECLARATION

iii

Main Body of the Text (Chapter 1, 2, 3, etc.): All the pages in the main body of the Project Report/Thesis (from 'Introduction/Chapter 1' to 'Last Page of Thesis') must be numbered using Arabic numerals, beginning with 1, appearing at the midpoint, 10 mm above the bottom-edge of the page.



1.3 Cover Page/Spine

Cover page carries the title of the Project Report/Thesis (Times New Roman - size 14) at the top of the page, candidate's name in the middle, and the degree and the year (Times New Roman - size 14) of the effective date of the degree at the bottom (see Chapter 4 - Specimen 4.1). Title of the Project Report/Thesis should be informative and descriptive of the work done and approved by the relevant Board of Study of the PGIS. Project Report/Thesis must be spirally bound during its initial submission, and hard bound in its final submission. Spine of the hard-bound copy should also carry all this information but with a smaller font size, Times New Roman - size 10 (see Chapter 4 - Specimen 4.2). If the approved title is too long for the spine, the approved short title may be used.

Number of copies of the Project Report/Thesis that is required to submit at each occasion is given below.

Project Report/Thesis	No. of copies of Project Report/Thesis to be submitted	
	Initial submission (Spiral bound)	Final submission (Hard bound)
M.Sc. Project Report	2 Copies	3 Copies (minimum)*
M.Phil. Thesis	3 Copies	3 Copies (minimum)*
Ph.D. Thesis	3 Copies	3 Copies (minimum)*

* One copy each for the candidate, supervisor(s) and science library.

1.4 Specified Colours for Binding

Cover page of the hard-bound Project Report/Thesis must be made of cloth or rexin or a material of equivalent quality in the specified colour assigned for each degree as given below. Inscriptions on both the cover page and spine of the hard-bound copy are made in gold lettering.

Project Report/Thesis	Colour of cover page
M.Sc. Project Report	Maroon
M.Phil. Thesis	Green
Ph.D. Thesis	Blue
D.Sc. Thesis	Black

1.5 Prefatory Pages

Title Page: Title of the Project Report/Thesis is to be displayed at the top of the title page. Title should be in bold, uppercase letters and centre aligned. If the title includes scientific names of organisms, those should be written in lowercase italics except for the first letter of the genus, which is always capitalized. Title page also carries the candidate's name, the Board of Study in which he/she is registered, the degree and the year of the effective date of the degree (see Chapter 4 - Specimen 4.3, 4.4 and 4.5).

Declaration: Each Project Report/Thesis should have a declaration (see Chapter 4 - Specimen 4.6), signed by the candidate and certified by his/her supervisor(s). The declaration should also carry the PGIS date stamp during both the initial and final submission of the Project Report/Thesis.

Abstract of M.Sc. Project Report: Abstract page should carry the title of the project, the candidate's name, the PGIS affiliation and the address where the major part of the research work was carried out before the text of the abstract. The abstract should not exceed 350 words and be printed single-spaced on a single page (see Chapter 4 - Specimen 4.7).

Abstract of M.Phil./Ph.D. Thesis: The abstract page should carry the following before the text of the abstract: the title of the project, the candidate's name, the PGIS affiliation and the address of the work-place where the research study was carried out. The PGIS affiliation will appear as the only address if the research study has been carried out at the PGIS only (see Chapter 4 - Specimen 4.8.1). If the major part of the research study was carried out at a department/institution other than the PGIS, the address of the department/institution should appear before the PGIS affiliation (see Chapter 4 - Specimen 4.8.2). The abstract should not exceed 350 words and be printed single-spaced on a single page.

Acknowledgments: The candidate shall declare in the Project Report/Thesis any assistance--obtained from others--such as for collection of material, design and construction of apparatus, performance of experiments, preparation of thesis and financial support.

Table of Contents: Titles of contents of the Project Report/Thesis including all the prefatory pages must be listed with single-line spacing (see Chapter 4 - Specimen 4.9).

List of Tables: All formal tables used/made in the Project Report/Thesis must be listed with single-line spacing.

List of Figures: All the figures (drawings, maps, photographs, etc.) that appear in the Project Report/Thesis must be listed with single-line spacing.

List of Abbreviations: All abbreviations used/made in the Project Report/Thesis must be listed with single-line spacing.

Notes: If necessary, notes could be included either at the foot of each page or as a group at the end of each chapter.

1.6 Main Body of the Text

CHAPTER 1
……
1.1 INTRODUCTION
1.1.1 ….
1.1.2 …
….
…..
1.2 METHODOLOGY
1.2.1 …
1.2.2 ….
….
…..
1.3 RESULTS AND DISCUSSION
1.3.1 …
1.3.2 ….
….
…..
1.4 CONCLUSIONS
….
…..
REFERENCES
….
….
APPENDICES
…

CHAPTER 2
……
2.1 INTRODUCTION
2.1.1 ….
2.1.2 …
2.2 METHODOLOGY
2.2.1 …
2.2.2 ….
2.3 RESULTS AND DISCUSSION
2.3.1 …
2.3.2 ….
2.4 CONCLUSIONS
…
….
REFERENCES
…
….
APPENDICES
…

If a Project Report/Thesis has several different subprojects, each subproject could be assigned a chapter number (CHAPTER 1, 2, 3, etc.), and each chapter can have an Introduction, Methodology, Results and Discussion, Conclusions, References and Appendices.

Or else, the chapter numbers could simply be assigned to Introduction, Methodology, Results and Discussion and Conclusions.

CHAPTER 1
INTRODUCTION
1.1 ….
1.2 …
1.3 …
…
….

CHAPTER 2
METHODOLOGY
2.1 …
2.2 ….
…
….

CHAPTER 3
RESULTS AND DISCUSSION
3.1 …
3.2 ….
…
….

CHAPTER 4
CONCLUSIONS
…
….

REFERENCES
…
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….

APPENDICES
…
…

Each chapter shall be named in uppercase bold type letters with Roman numerals (e.g.: **CHAPTER 2, CHAPTER 3**, etc.) followed by the title of the respective chapter in uppercase bold type letters (size14) after a single-line spacing. Both the chapter number and the title of the chapter should be centred as given below. The text should start after a two-line spacing. Bold letters may be used for sub-titles and, italics for emphasis, in the text as appropriate (see Chapter 4 - Specimen 4.10).

CHAPTER 1

INTRODUCTION

1.1 ……
……
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……
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1.2 ……
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……
……
……

List of References: References are listed at the end of Project Report/Thesis or at the end of each chapter, as applicable, but using one system throughout the thesis, either the 'Author-Year' system or the 'Numeric' system.

Appendices: Any detailed description, recipe, set of data, etc. that is not directly required for interpreting/explaining the project work/outcome could be included in an appendix.

CHAPTER 2

PRESENTATION OF SCIENTIFIC MATERIAL

2.1 Formulae/Equations, Mathematical Operations and Functions

2.1.1 Formulae/Equations:

Formulae must be printed with sufficient space left around them. Subscripts and superscripts should be clear and not too small. Meaning of all the symbols must be given immediately after an equation at its first use. For simple fractions, use of solidus (/) is preferred to horizontal line. Equations are to be numbered serially at the right-hand side in parentheses. Fractional powers are preferred to root signs. Powers of *e* could conveniently be denoted by *exp*.

2.1.2 Mathematical Operations and Equations:

Keep a single space before and after arithmetic operation symbols. Also keep a single space before and after '=' sign

E.g.: $3 + 5 = 8$ $3 - 5 = -2$

$3 \times 5 = 15$ (Use the multiplication symbol, and do not use the letter x or * for multiplication.)

$3 \div 5 = 0.6$

2.1.3 Trigonometric functions:

Keep a single space after trigonometric function symbols.

E.g.: $\sin x$ $\tan y$ $\tan^{-1}(x + y)$

2.1.4 Inequalities:

Keep a single space before and after inequalities.

E.g.: $x < 5$ $y > 7$

$P \leq 5$ (Underlining inequality sign '≤' is not acceptable.)

2.1.5 Parenthesis:

Keep a single space before and after a parenthesis. However, within the parenthesis, do not keep space between the parenthesis symbol and the adjacent letter/symbol inside the parenthesis.

E.g.: The magnitude of x is less than five ($x < 5$) and ....

2.2 Scientific Units, Notation and Significant Figures

2.2.1 Scientific Units:

Use the international system of units (SI). Keep a single space between two types of units. Do not indicate units as divisions, and instead, use a negative exponent.

E.g.: kg m J mol^{-1} K^{-1} kg m^{-3} (kg/m^3 is not acceptable.)

Note: 1. Although the SI unit of concentration is mol m^{-3}, mol dm^{-3} (or M) unit is acceptable. Use the selected unit consistently.

2. Although the SI unit of volume is m^3, small volumes of solutions are usually expressed in mL or ml, both of which are acceptable. However, be consistent throughout the document.

2.2.1.1 Scientific data:

Keep a single space between the magnitude and the unit of a particular quantity. In expressing percentages, do not keep any space between the number and the % sign.

E.g.: 5.00×10^5 N m^{-2} 56.7%

2.2.1.2 Trace level concentrations:

Use mg L^{-1} (liquids) and mg kg^{-1} (solids) instead of 'ppm'; µg L^{-1} (liquids) and µg kg^{-1} (solids) instead of 'ppb'.

2.2.1.3 Temperature:

Use degree symbol for temperature in centigrade.
E.g.: 25 °C (Do <u>not</u> use superscript of 0 as in 25 ^{0}C)

2.2.2 Scientific Notation:

Express very small and very large numbers in scientific notation. Do not keep any space before and after '˝ ' sign as this does not represent multiplication.
E.g.: 0.000507 to be written as $5.07˝ 10^{-4}$
340000 to be written as $3.4˝ 10^5$

2.2.3 Significant Figures:

In reporting experimental measurements, do not keep digits that are <u>not</u> significant (*i.e*., do not keep digits beyond the precision of the scale of the instrument).
E.g.: 4.6567 to be reported as 4.66 if the scale used is precise up to the second decimal place.

2.2.4 Level of Statistical Significance:

This can be mentioned without further explanation, for example, $p < 0.05$.

2.3 Chemical Formulae and Nomenclature

2.3.1 Chemical Formulae:

Valence of ions can be denoted as Ca^{2+} and CO_3^{2-}, but not as Ca^{++} or CO_3^{-}.

2.3.2 Nomenclature:

Follow IUPAC nomenclature.

2.4 Scientific Names of Plants and Animals

Scientific names of plants and animals should be printed in italics. Some examples are given below.

Botanical Names: *Stemonoporus canaliculatus* Thw.
Elettaria cardamom var. *major* Thw.
Shorea distichta (Thw.) Ashton

Zoological Names: *Varanus salvator* Laurenti
Varanus bengalensis Daudin
Tetragonula iridipennis (Smith)
Xylocopa tranquebarica (Fabricius)

In the first citation, genus, species and authority must be given. e.g.: *Stemonoporus canaliculatus* Thw. In later citations, the generic name may be abbreviated, e.g. *S. canaliculatus.*

2.5 Illustrations, Figures and Tables

2.5.1 Illustrations:

Drawings, diagrams, maps etc. should be clear and may be reproduced by photographic or other processes. They should carry captions on the same page.

2.5.2 Figures:

Figure caption must be placed at the bottom of maps, line drawings, figures, photographs and graphs using Times New Roman font (size 10), and single-spaced if there are more than one line. In the case of maps, information such as coordinates, linear scale, directive arrow and index map showing locality of area must be provided. Line Drawings can only be used to provide essential information illustrating some points in the text. Graphs could be either line graphs or bar graphs depending on the data to be presented. Photographs of good quality could be used only to illustrate some point in the text. See the example below.

Figure 2.3: Action of ..... (Font size: 10)

2.5.3 Tables:

The title of a table should be clear and meaningful and placed at the top of the table using Times New Roman font (size 10), and single-spaced if there are more than one line. Only relevant data should be presented. If there are masses of data (3 - 4 pages or more), place them in an appendix but not in the main body of the text. See the example below.

Table 4.5: Number of samples ..... (Font size: 10)

CHAPTER 3

REFERENCES/BIBLIOGRAPHY FORMAT

One of the two following referencing systems should be adopted in the Project Report/Thesis:

- Author-Year System
- Numeric System

3.1 Author-Year System

3.1.1 In-Text Citations

In the Author-Year System, a citation in the text is indicated by writing the last name of author and year of publication within parentheses. To distinguish papers published by the same author/s in the same year, *a, b,* etc may be followed by the year.

Two authors: use both last names and the year. Do not use *et al.*
More than two authors: use the last name of the first author followed by *et al.* and the year.

The following examples illustrate how author-year citations can be incorporated into a running text:

Xie (1980) and also Peterson (2003a) report ….. Recent studies (Silva and Perera, 2016) have shown …… Peterson (2003b) …..… that the actual value is higher (Senaratne *et al*., 1995; Stowell, 2012).

3.1.2 Reference List

References are listed at the end of Project Report/Thesis or each chapter. References should be arranged first alphabetically under author/s name/s and then in chronological order if several papers by the same author/s are cited. Use *a, b, etc.* after the year to distinguish papers published by the same author/s in the same year.

E.g.

Becker, L.J. and Seligman, C. (1981). Welcome to the energy crisis. *J. Social Issue* **37**(2), 1-7.

Conrad, A.B. (1991a). Fungal inhibition in rice crops. *Postharvest Crop Protection* **1**, 81-93.

Conrad, A.B. (1991b). Heat tolerance in third instars of the oriental fruit fly (*Diptera: Tephritidae*). *Journal of Asian Entomology,* 1298-1303.

Marcus, L., Prusky, D. and Jacoby, B. (1988). Purification and characterization of avocado lipoxygenase. *Phytochemistry* [online] **27**(2), 323-326. Available at: https://doi.org/10.1016/0031-9422(88)83090-5 [Accessed 8 April 2015].

Priesler, H.K. and Robertson, J.L. (1992). Estimation of treatment efficacy when the number of test subjects is unknown. *Journal of Economic Entomology* **85**,1033-1040.

Waite, D.T., Grover, R., Westcott, N.D., Sommerstd, H. and Kerr, L. (1992). Pesticides in ground water, surface water and spring runoff in a small Saskatchewan watershed. *Environmental Toxicology and Chemistry* **11**, 741-748.

Some examples are given below to illustrate the recommended format in the Author-Year System.

· Journal article:

Conrad, A.B. (1991). Fungal inhibition in rice crops. *Postharvest Crop Protection* **1**, 81-93.

Priesler, H.K. and Robertson, J.L. (1992). Estimation of treatment efficacy when the number of test subjects is unknown. *Journal of Economic Entomology* **85**,1033-1040.

Waite, D.T., Grover, R., Westcott, N.D., Sommerstd, H. and Kerr, L. (1992). Pesticides in ground water, surface water and spring runoff in a small Saskatchewan watershed. *Environmental Toxicology and Chemistry* **11**, 741-748.

· Journal article (online database or website):

Marcus, L., Prusky, D. and Jacoby, B. (1988). Purification and characterization of avocado lipoxygenase. *Phytochemistry* [online] **27**(2), 323-326. Available at: https://doi.org/10.1016/0031-9422(88)83090-5 [Accessed 8 April 2015].

· Journal without volume numbers:

Conrad, A.B. (1991). Heat tolerance in third instars of the oriental fruit fly (*Diptera: Tephritidae*). *Journal of Asian Entomology*, 1298-1303.

· Journal with new pagination in each issue:

Becker, L.J. and Seligman, C. (1981). Welcome to the energy crisis. *J. Social Issue* **37**(2), 1-7.

· Translation journal:

Assink, E.M.H. and Verloop, N. (1977). Het aanleren van dee-geheel relaties in het aanvankelijk rekenonderwijs [Teaching part-whole relations in elementary mathematics instruction]. *Pedagogischi Studien* **54**,130-142.

· Conference proceedings:

Wijesekara, H.A.K., Senarathna, K.G.C. and Rajapakse R.M.G. (2015). Synthesis of a metallated porphyrin complex using ferrous sulfate and investigating its characteristics. *Proceedings of the Peradeniya University International Research Sessions, Sri Lanka* **19**, 328.

· Paper not yet published but in press:

Potting, R.P.J., Otten, H. and Vet, L.E.M. (1997). The relation between parasitoid ecology and learning: absence of learning in the stemborer parasitoid *Cotesia flavipes. Animal Behaviour* (in press).

· Monograph:

Gunatilleke, C.V.S. (1996). *A nature guide to the world's end trail, Horton Plains.* Peradeniya Science Publication.

· Chapter in monograph:

Ugi, I. (1971). *Isonitrile chemistry,* Academic Press, New York. Chapter 2.

· Book:

Abeles, F.B. (1973). *Ethylene in Plant Biology*. Academic Press, New York.

· eBook:

Bonaventure, O. (2011). *Computer Networking: Principles, Protocols and Practice* [ebook] The Saylor Foundation. Available at: https://www.saylor.org/site/wp-content/uploads/2012/02/Computer-Networking-Principles-Bonaventure-1-30-31-OTC1.pdf [Accessed 14 February 2018].

· Edited book:

Worthing, C.R. and Walker, S.B. (1987). *The Pesticide Manual*, 8th edn. British Crop Protection Council, Thornton Heath.

· Chapter in edited book:

Ries, S.K. (1976). Subtoxic effects on plants. In: Audus, L.J. (ed.) *Herbicides: Physiology, Biochemistry and Ecology*, 2nd edn. Vol. 2, Academic Press, London. 313-344.

· Edited symposia, special issues, etc., published in a periodical:

Kimball, B.A. and Idso, S.B. (1983). Increasing atmospheric carbon dioxide: effects on crop yield, water use and climate. In: Stone, J.F. and Willis, W.O. (eds.), Symp. Plant Production and Management under Drought Conditions, 4-16 October 1982, Tulsa, OK. *Agric. Water Manage*. **7**, 55-72.

· Patent:

Kysika, J.O. and Sawiciki, C.A. Apparatus and method for measuring optically active materials, U.S. Patent 352 321, 1983.

· Thesis:

Cregg, B.M. (1990). Net Photosynthesis and carbon allocation of loblolly pine (*Pinus taeda* L.*)* branches in relation to three levels of shade. Ph.D. Thesis, University of Georgia, USA.

· Thesis (website):

Smith, J. (2000). Curli's Airships Polegate, Master of Arts. [online] Available at: http://www.curlysairships.com [Accessed 29 May 2001].

3.2 Numeric System

3.2.1 In-Text Citations

In the Numeric System, citation numbers (reference numbers) are used within parentheses in the text when citing references.

E.g.: text [1] …….. text [2] ……., text [2,3] ……., text [1,3-6] ……. text [7].

This system does not preclude mentioning the author's name in the text.

E.g.: The results reported by Conrad [5] are……

3.2.2 Reference List

References are listed at the end of Project Report/Thesis or each chapter. In the Numeric System, references are listed in the order they appear in the text.

E.g.

(1) Conrad, A.B., Fungal inhibition in rice crops. *Postharvest Crop Protection* **1991**, *1*, 81-93.

(2) Priesler, H.K., Robertson, J.L., Estimation of treatment efficacy when the number of test subjects is unknown. *Journal of Economic Entomology* **1992**, *85*,1033-1040.

(3) Waite, D.T., Grover, R., Westcott, N.D., Sommerstd, H., Kerr, L., Pesticides in ground water, surface water and spring runoff in a small Saskatchewan watershed. *Environmental Toxicology and Chemistry* **1992**, *11*, 741-748.

(4) Marcus, L., Prusky, D., Jacoby, B., Purification and characterization of avocado lipoxygenase. *Phytochemistry* [online] **1988**, *27*(2), 323-326. Available at: https://doi.org/10.1016/0031-9422(88)83090-5 [Accessed 8 April 2015].

(5) Conrad, A.B., Heat tolerance in third instars of the oriental fruit fly (*Diptera: Tephritidae*). *Journal of Asian Entomology,* **1991**,1298-1303.

(6) Becker, L.J., Seligman, C., Welcome to the energy crisis. *J. Social Issue* **1981**, *37*(2), 1-7.

Some examples are given below to illustrate the recommended format in the Numeric System.

· Journal article:

Conrad, A.B., Fungal inhibition in rice crops. *Postharvest Crop Protection* **1991**, *1*, 81-93.

Priesler, H.K., Robertson, J.L., Estimation of treatment efficacy when the number of test subjects is unknown. *Journal of Economic Entomology* **1992**, *85*,1033-1040.

Waite, D.T., Grover, R., Westcott, N.D., Sommerstd, H., Kerr, L., Pesticides in ground water, surface water and spring runoff in a small Saskatchewan watershed. *Environmental Toxicology and Chemistry* **1992**, *11*, 741-748.

· Journal article (online database or website):

Marcus, L., Prusky, D., Jacoby, B., Purification and characterization of avocado lipoxygenase. *Phytochemistry* [online] **1988**, *27*(2), 323-326. Available at: https://doi.org/10.1016/0031-9422(88)83090-5 [Accessed 8 April 2015].

· Journal without volume numbers:

Conrad, A.B., Heat tolerance in third instars of the oriental fruit fly (*Diptera: Tephritidae*). *Journal of Asian Entomology,* **1991**,1298-1303.

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· Conference proceedings:

Wijesekara, H.A.K., Senarathna, K.G.C., Rajapakse R.M.G., Synthesis of a metallated porphyrin complex using ferrous sulfate and investigating its characteristics. *Proceedings of the Peradeniya University International Research Sessions, Sri Lanka* **2015,** *19*, 328.

· Paper not yet published but in press:

Potting, R.P.J., Otten, H., Vet, L.E.M., The relation between parasitoid ecology and learning: absence of learning in the stemborer parasitoid *Cotesia flavipes. Animal Behaviour* **1997**, in press.

· Monograph:

Gunatilleke, C.V.S. *A nature guide to the world's end trail, Horton Plains.* Peradeniya Science Publication, 1996.

· Chapter in monograph:

Ugi, I., *Isonitrile chemistry,* New York: Academic press, 1971, Chapter 2.

· Book:

Abeles, F.B., *Ethylene in Plant Biology*, New York: Academic Press, 1973.

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· Edited book:

Worthing, C.R., Walker, S.B., *The Pesticide Manual*, 8th Edn. Thornton Heath: British Crop Protection Council, 1987.

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Ries, S.K., Subtoxic effects on plants. In: *Herbicides: Physiology, Biochemistry and Ecology*, 2nd Edn.; Audus, L.J., Ed.; London: Academic Press, 1976; Vol. 2, 313-344.

· Edited symposia, special issues, etc., published in a periodical:

Kimball, B.A., Idso, S.B., Increasing atmospheric carbon dioxide: effects on crop yield, water use and climate. In: Stone, J.F., Willis W.O., Eds., Symp. Plant Production and Management under Drought Conditions, 4-16 October 1982, Tulsa, OK. *Agric. Water Manage*. **1983,** *7*, 55-72.

· Patent:

Kysika, J.O., Sawiciki, C.A., Apparatus and method for measuring optically active materials, U.S. Patent 352 321, 1983.

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· Thesis (website):

Smith, J., Curli's Airships Polegate, Master of Arts. 2000 [online] Available at: http://www.curlysairships.com [Accessed 29 May 2001].

CHAPTER 4

SPECIMEN PAGES

Boxes given in the specimen pages represent A4-size pages or spine of the Project Report/Thesis, but not to scale. The font to be used is specified at the right-hand side margin of the pages.

4.1 Specimen Cover Page

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PREPARATION AND CHARACTERIZATION OF FERRITE NANOPARTICLES (Times New Roman, size 14)

SAMPATH KUMARA RANASINGHE (Times New Roman, size 12)

M.Sc./M.Phil./Ph.D. 2017

(Times New Roman, size 14)

4.2 Specimen Spine

(Times New Roman, size 10)

4.3 Specimen Title Page - M.Sc.

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(Times New Roman, size 14)

DEVELOPMENT OF A STUDENT INFORMATION MANAGEMENT SYSTEM FOR SCHOOLS

(Times New Roman, size 12)

A PROJECT REPORT PRESENTED BY

MEGANATHAN INTHIRAPALAH

to the Board of Study in Statistics and Computer Science of the

POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement
for the award of the degree of

MASTER OF SCIENCE IN COMPUTER SCIENCE

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2017

(Times New Roman, size 12)

4.4 Specimen Title Page - M.Phil.

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(Times New Roman, size 14)

MOLECULAR PHYLOGENY OF GOBLIN SPIDERS WITH A REVISION OF *Aprusia, Brignolia* AND *Xestaspis* (ARANEAE: OONOPIDAE) OF SRI LANKA

A THESIS PRESENTED BY (Times New Roman, size 12)

SASANKA LAKMALI RANASINGHE

to the Board of Study in Zoological Sciences of the
POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement
for the award of the degree of

MASTER OF PHILOSOPHY

of the

UNIVERSITY OF PERADENIYA
SRI LANKA
2017 (Times New Roman, size 12)

4.5 Specimen Title Page - Ph.D.

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(Times New Roman, size 14)

CHARACTERIZATION AND NUTRITIONAL EFFECT OF CELL WALL POLYSACCHARIDES FROM COCONUT KERNEL

A THESIS PRESENTED BY (Times New Roman, size 12)

CHANDI YALEGAMA

to the Board of Study in Chemical Sciences of the

POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement

for the award of the degree of

DOCTOR OF PHILOSOPHY

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2017 (Times New Roman, size 12)

4.6 Specimen Declaration Page

To be included at both the initial and final submission of the project report/thesis.

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DECLARATION

(Times New Roman, size 14)

I do hereby declare that the work reported in this project report/thesis was exclusively carried out by me under the supervision of …….. It describes the results of my own independent research except where due reference has been made in the text. No part of this project report/thesis has been submitted earlier or concurrently for the same or any other degree.

(Times New Roman, size 12)

Date: ……. ……

Signature of the Candidate

Certified by:

(Times New Roman, size 11)

1. Supervisor (Name):…… Date: ……..

   Signature: ……

2. Supervisor (Name):……. Date: ……..

   Signature: ……

PGIS Stamp:

(Times New Roman, size 14)

4.7 Specimen Abstract - M.Sc.

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INVESTIGATION OF THE VALIDITY ADSORPTION ISOTHERMS OF METHYLENE BLUE DYE (Times New Roman, size 12)

(*Two-line spacing*)

A.B.C.D. Matthews (Times New Roman, size 12)

(*One-line spacing*)

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka
Department of Chemistry, University of Peradeniya, Peradeniya, Sri Lanka
(Times New Roman, size 10)

(*Two-line spacing*)

The influence of preparation conditions on the properties of electroactive poly-N-methylpyrrole (PNMP) films were investigated by varying preparation conditions with a view to obtaining highly conductive films. Characterizations were done using cyclic voltammetry and impedance spectroscopy. Conductivity of PNMP films was very much affected by the polymerization current density, pH and the polymerization temperature. Electrochemical Quartz Crystal Microbalance (EQCM) studies revealed that anions are the moving species during the redox process in PNMP films that were prepared and cycled in aqueous electrolytes containing small anions. Polypyrrole (PPy) films were prepared with large surfactant anion, dodecy1 benzenesulfonate (DBS^-), and their properties were compared with those of PPy films prepared with small anions. EQCM studies on PPy/DBS films showed a dual step scheme for the redox process in aqueous electrolytes. Lithium rechargeable cells were fabricated using PPy/DBS as the cathode. Continuous charge-discharge experiments showed that these cells could be cycled more than 1000 times without any appreciable charge decay. Electrochemomechanical properties of PPy/DBS films were investigated by fabricating bi-layer and dry artificial muscles and obtaining the force exerted by these muscles. The highest force change is always associated with the main peaks of the cyclic voltammogram. It was observed that appreciable force change occurred in a rather narrow voltage interval. Muscles fabricated with PPy films prepared using larger anions and higher polymerization current densities gave higher forces. Higher forces can also be obtained by limiting the cycling potential window so that only cation exchange occurs.

Note: The abstract should not exceed one page. Having a single paragraph is recommended. Do not state keywords.

4.8 Specimen Abstract - M.Phil./Ph.D.

4.8.1 Specimen Abstract - M.Phil./Ph.D.

(If the research work was performed at the PGIS)

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SOCIAL NETWORK ANALYSIS APPROACH FOR CRIMINAL NETWORK ANALYSIS

(Times New Roman, size 12)

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A. Galappaththi (Times New Roman, size 12)

(*One-line spacing*)

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka.

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(*Two-line spacing*)

Organized crime groups are strategic, goal oriented and destructive. The associations among criminals form a network which allows them to achieve their objectives by accessing necessary human resources and transmitting information. Therefore, criminal network analysis is an extension of social network analysis and is important in preventing crimes and immobilizing criminal enterprise. Relational analysis provides the information of members based on their relative position in the network while positional analysis indicates substitutable members with similar associations. Community detection has been used to identify the criminal group structures embedded in networks. Neutrality of a member in a network indicates weak relationships with sub-groups but participate in connecting sub-groups. Blockmodels represent structurally equivalent, substitutable members in a network. The main objective of this research was to find an efficient method which can identify neutral members and to detect blockmodels using spectral properties of social networks. A novel relative measure, "Neutrality" was introduced in this study and it indicates the degree of independence of a member to a sub-group in a network. Neutrality was determined by calculating proportional closeness of a member to central members, derived using the shortest path distance and associations with nearest neighbours. Further, the spectral properties of the network's adjacency matrix were analyzed and hierarchical clustering was used to find the blockmodels. Two artificially simulated networks and four social/criminal networks with real associations were analysed to identify neutral members and blockmodels. Results provided the availability of neutral members and blockmodels. Due to the covert nature of the criminal organizations, criminal network structures were less modular and relative positions of the neutral members were different from social networks. Blockmodels were identified regardless of the structure in the criminal networks. According to the experimental results, the proposed methods successfully identified both neutral members and substitutable members in criminal networks. The findings of this study will help the law enforcement authorities to take an intelligent approach to identify the most suitable infiltration positions in criminal networks.

Note: The abstract should not exceed one page. Having a single paragraph is recommended. Do not state keywords.

4.8.2 Specimen Abstract - M.Phil./Ph.D.

(If the major part of the research work was performed elsewhere)

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ASSESSMENT OF MINERAL ALTERATION AND ANTIMICROBIAL POTENTIAL OF *RASASHASTRA* FORMULATIONS

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A.U. Wijenayake (Times New Roman, size 12)

(*One-line spacing*)

Departments of Botany, Chemistry and Geology, Faculty of Science,
University of Peradeniya, Peradeniya, Sri Lanka.
Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka.

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Minerals have been incorporated into formulations of traditional medicine since ancient times. However, the use of minerals as pharmaceuticals in modern medicine is limited due to the insufficient knowledge of the role of minerals and major technical procedures used in traditional drug preparations. The objective of the current study was to examine chemical and mineralogical alterations of biotite mica during traditional drug preparation of *Rasashastra* and to assess the antimicrobial activity of the drug and the intermediates. Selected mineral based drugs and plant extracts (*Ficus benghalensis* and *Ricinus communis* leaves) were assessed for antimicrobial activity against *Staphylococcus aureus*, methicillin-resistant *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Escherichia coli* and *Candida albicans.* Mineralogical characterization by spectrometric methods revealed that biotite mica was altered mineralogically into many secondary products such as iron oxides and aluminosilicates during the preparation of drugs. Compositional segregations of chemical constituents suggest that some cations in the raw minerals were expelled from the biotite structure by a preferential partial melting process. Geochemical characterization revealed the removal of heavy metals from the biotite and accumulation of plant-based cations in the drug during treatments. Incineration with organic matter under produced nano-particles of secondary products and porous fragments of altered amorphous mica. Vinegar and cow urine played a major role in removing toxic elements. The drug products were more water-soluble and appeared more bio-accessible than the raw biotite. Mica ash together with other herbal and minerals ingredients possessed higher antibacterial potential against bacterial species than mica ash alone. Calcined product of *C. moneta* sea shells showed antimicrobial activity against all the tested microorganisms, and thus the calcined product could be used as an effective antimicrobial material in medicinal applications. The antimicrobial activity of water and ethanol extracts of *F. benghalensis* was more effective against Gram positive bacteria than Gram negative bacteria and *C. albicans*. Extracts of *F. benghalensis* contained secondary metabolites such as flavanoids, tannins, alkaloids and glycosides, which might be contributing to the antimicrobial activity. Assay techniques and the method of extract preparation had a considerable effect on the minimum inhibitory concentration values of the above drugs and their intermediates.

Note: The abstract should not exceed one page. Having a single paragraph is recommended. Do not state keywords.

4.9 Specimen Table of Contents

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TABLE OF CONTENTS

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CHAPTER 1

INTRODUCTION

1.1 Introduction to Adsorption Isotherms

Adhesion of atoms, ions or molecules of gas, liquid or dissolved solids to a surface is called adsorption. Adsorption is different from absorption. In absorption, the molecules of a substance are uniformly distributed in the bulk of the other, whereas in adsorption molecules of one substance are present in higher concentration at the surface of the other substance.

Two substances are involved in an adsorption process. One is the solid or the liquid on which adsorption occurs and it is called the adsorbent. The second is the adsorbate, which is the gas or liquid or the solute from a solution which gets adsorbed on the surface. Therefore, film of the adsorbate, the molecules or atoms being accumulated on the surface of the adsorbent, is created during adsorption.

1.1.1 Langmuir adsorption isotherm

The Langmuir adsorption model is the most common model used to quantify the amount of adsorbate adsorbed on an adsorbent as a function of partial pressure (p) or concentration (C) at a given temperature, T. It considers adsorption of an ideal gas onto an idealized surface. The gas is presumed to bind at a series of distinct sites on the surface of the solid as indicated in Figure 1. The adsorption process can be treated as a reaction where a gas molecule A^- (g) reacts with an empty site to yield an adsorbed complex A^- (ad).