



Registration and study guidelines

POSTGRADUATE STUDIES

DEPARTMENT OF GEOGRAPHY, GEOINFORMATICS AND METEOROLOGY (GGM)

Faculty of Natural and Agricultural Sciences
University of Pretoria

2013

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[www.up.ac.za / ggm](http://www.up.ac.za/ggm)



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Denkleiers • Leading Minds • Dikgopolo fša Dihlalefi

SECTION A: General information

1. INTRODUCTION

The Department of Geography, Geoinformatics and Meteorology (GGM) at the University of Pretoria welcomes you as a prospective Master's or Doctoral student. The Department of GGM is established in the Faculty of Natural and Agricultural Sciences, but also includes candidates from the Faculty of Humanities.

Research and education in the Department of GGM revolves around a central theme: "***The sciences concerned with our changing, living environment***". Four focussed disciplines are established around this theme, namely:

- Geography
- Geoinformatics
- Meteorology
- Earth sciences

The Department of GGM also hosts the following centres and institutes:

- The Centre for Environmental Sciences (CFES)
- The Centre for Geoinformation Sciences
- The University of Pretoria Water Institute

Your studies will consist of either a dissertation (Master's degree) or a thesis (Doctoral degree). In a Master's study, a student must demonstrate that he/she is capable of performing and completing a comprehensive research project **independently**. This research does not have to be original. In Doctoral studies a student has to **make a notable contribution** to science. The research therefore has to be original.

The Department of GGM encourages students to complete their Master's studies within two years from registration and their Doctoral studies within three years from registration. It is expected from students to **publish articles in accredited scientific journals** during their studies, and to engage with other scientists or students on a national or international level.

The Department of GGM strives to attain a high standard and it is hoped that your association with us will be to our mutual benefit.

For further enquiries please contact:

Prof Hannes Rautenbach (Head of Department)

Email: hannes.rautenbach@up.ac.za

Ms Nandipha Ndabana (Postgraduate study coordinator)

Email: nandipha.ndabana@up.ac.za

2. POSTGRADUATE PROGRAMMES

The following Master's level programmes are offered by the Department of GGM:

- | | |
|--|--|
| ○ MSc (Geography) | Research dissertation |
| ○ MA (Geography) ¹ | Research dissertation |
| ○ MSc (Geoinformatics) ⁴ | Research dissertation |
| ○ MSc (Meteorology) | Research dissertation |
| ○ MA (Environment and Society) ^{1,2} | Research dissertation (with course work) |
| ○ MSc (Environment and Society) ² | Research dissertation (with course work) |
| ○ MSc (Water Resource Management) ^{2,3} | Research dissertation (with course work) |

The following Doctoral level programmes are offered by the Department of GGM:

- | | |
|---|-----------------|
| ○ PhD in Geography | Research thesis |
| ○ DPhil in Geography ¹ | Research thesis |
| ○ PhD in Geoinformatics ⁴ | Research thesis |
| ○ PhD in Meteorology | Research thesis |
| ○ PhD in Environment and Society ² | Research thesis |
| ○ DPhil in Environment and Society ^{1,2} | Research thesis |

¹ Administered by the Faculty of Humanities

² Administered by the Centre for Environmental Sciences

³ Administered by the Water Institute

⁴ Administered by the Centre for Geoinformation Sciences

3. POSTGRADUATE STUDIES

This guide deals exclusively with research-based Master's and Doctoral programmes in the Department of GGM. The guide should be read in conjunction with the procedures for studies for Master's and Doctoral degrees, and with the policy on research ethics at the University of Pretoria.

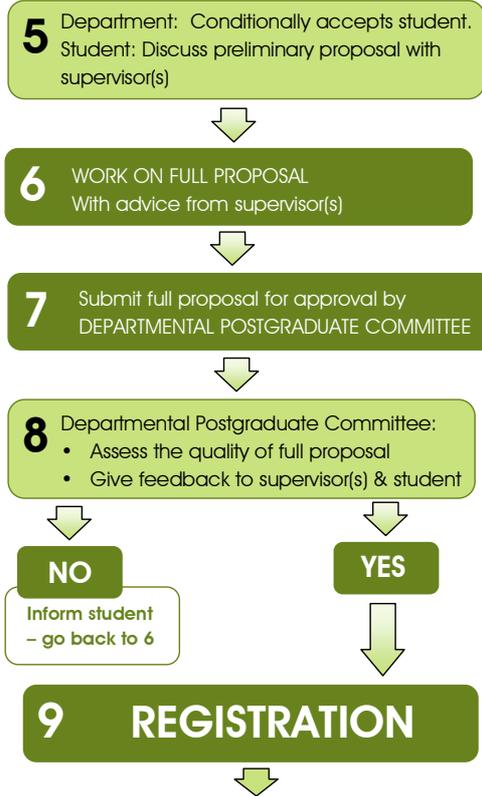
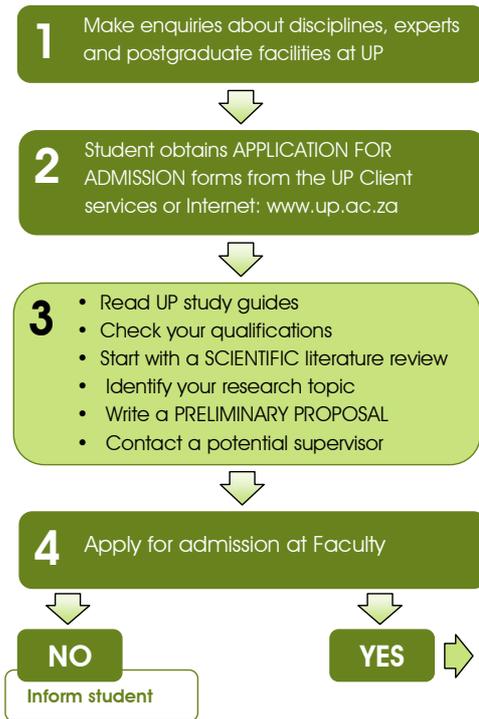
Postgraduate studies in the Department of GGM are taking place in three phases, namely:

- The **postgraduate registration process**
- The **postgraduate research process**
- The **postgraduate examination process**

These phases, with requirements and actions, are illustrated in the following diagram:

Postgraduate registration process

Department of Geography, Geoinformatics and Meteorology



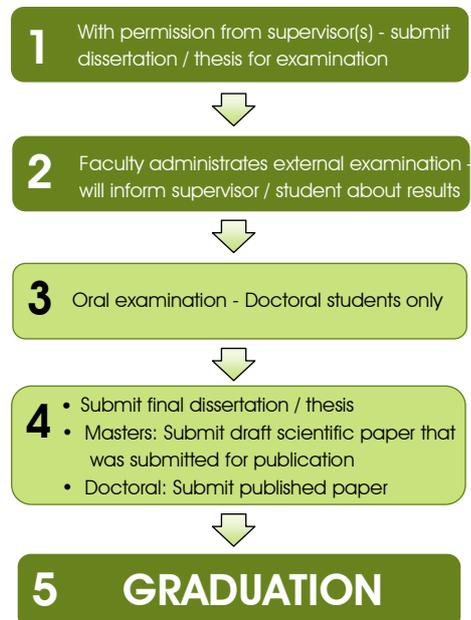
Postgraduate research process

Department of Geography, Geoinformatics and Meteorology



Postgraduate examination

Department of Geography, Geoinformatics and Meteorology



4. POSTGRADUATE REGISTRATION PROCESS

- As entry point, a prospective postgraduate student (you) first have to become familiar with the University of Pretoria admission (UP) requirements and study environment. Information is available on the following web site:

www.up.ac.za (click on “New Students”, “UP Students”, “Postgraduate Students” or “International Students”, and if applicable, “What to Study”).

- The postgraduate registration process for postgraduate studies takes place in two phases, namely:
 - the **application for admission**;
 - the **registration** for studies.

At this point you need to collect information regarding admission requirements (e.g. required qualifications) and obtain the application for admission forms from the University’s Client Services or from the internet:

www.up.ac.za (click on “Postgraduate Students” and then on “Apply at UP”).

- One of the first steps to be taken in preparation for postgraduate studies is to start working on a scientific problem and literature review. This will help you to identify your research field or topic, and then to identify a potential supervisor. This will also form the basis for your *preliminary research proposal*, which must contain the following (see **SECTION B**):
 - Covering page
 - A preliminary title for your research;
 - A background literature study of your research field – references of more than 10 peer reviewed scientific papers;
 - Need for the research / motivation;
 - The formulation of your hypothesis or research problem. This should follow from and be supported by your literature study;
 - Your specific research question(s);
 - Purpose of the research expressed as the research aim;
 - Sub-problems expressed as the research objectives – in order to focus it is recommended that the research objectives are limited to a three;
 - How do you intend to solve or achieve each one of these objectives - research design and methodology;
 - Limitations;
 - A reference list of peer reviewed scientific papers.
- With the *preliminary research proposal* it is your task to identify a suitable (and available) **supervisor** (see **SECTION D**). **Take note that it will be much easier to find a**

supervisor if a well-written, well-referenced and well-structured *preliminary research proposal* is presented.

- The Department of GGM does not allocate or “appoint” supervisors, meaning that it is your responsibility to identify a supervisor through consultation.
- With the support of the supervisor you can now **apply for admission** for postgraduate studies at the University of Pretoria. If the student complies with the entry qualifications, as required by the Faculty of Natural and Agricultural Sciences or Faculty of Humanities, the **Department of GGM will accept the student on the condition that a final research proposal is submitted and approved by the Department’s Postgraduate Research Committee.**
- After approval of the final research proposal by the Department’s Postgraduate Research Committee, as presented by the supervisor, you may **register** for postgraduate studies and continue with your research.

5. POSTGRADUATE RESEARCH PROCESS

- At the beginning of the postgraduate research process you should already have a comprehensive or complete research proposal in place, which could be incorporated into the research dissertation / thesis.
- It would be required from you to sign a **postgraduate contract** with the Faculty of Natural and Agricultural Sciences or the Faculty of Humanities in order to ensure that you comply with UP postgraduate study requirements.
- The nature of research might require **ethics** clearance, meaning that you should submit your research for approval by the Faculty’s Ethics Committee:
<http://web.up.ac.za/default.asp?ipkCategoryID=5127&language=0>.
- It would be expected from you to take the lead in your research, with general guidance and advice from the supervisor(s). During the research process it is your responsibility to convince the supervisor(s) that you are capable of leading and conducting your research through exploration and innovative thinking.
- You should be available to present your research results at departmental **postgraduate forums**, which will happen twice every year.
- You are strongly encouraged to write your research results up for **publication in peer reviewed scientific journals**. Please confirm with Mr Andre Daniels (andre.daniels@up.ac.za) if the journal considered is registered for subsidy from the South African Department of Higher Education.

6. POSTGRADUATE EXAMINATION

- The supervisor must ensure that the **title registration** of the dissertation or thesis takes place well in advance (six months) of submission for examination. The title registration form will contain the final title of the dissertation or thesis, confirmation of the supervisor(s) and the names of internal and external examiners.
- The following must be submitted with the exam copies of your dissertation or thesis:
Master's examination: A draft scientific paper that was submitted for publication.
Doctoral: At least one scientific paper already published in an accredited journal.
- The responsible Faculty will administrate the examination process, and will inform the supervisor or student regarding any feedback or results.
- An oral examination needs to be arranged for Doctoral students. This is not required from Master's students.

SECTION B: Conducting the research

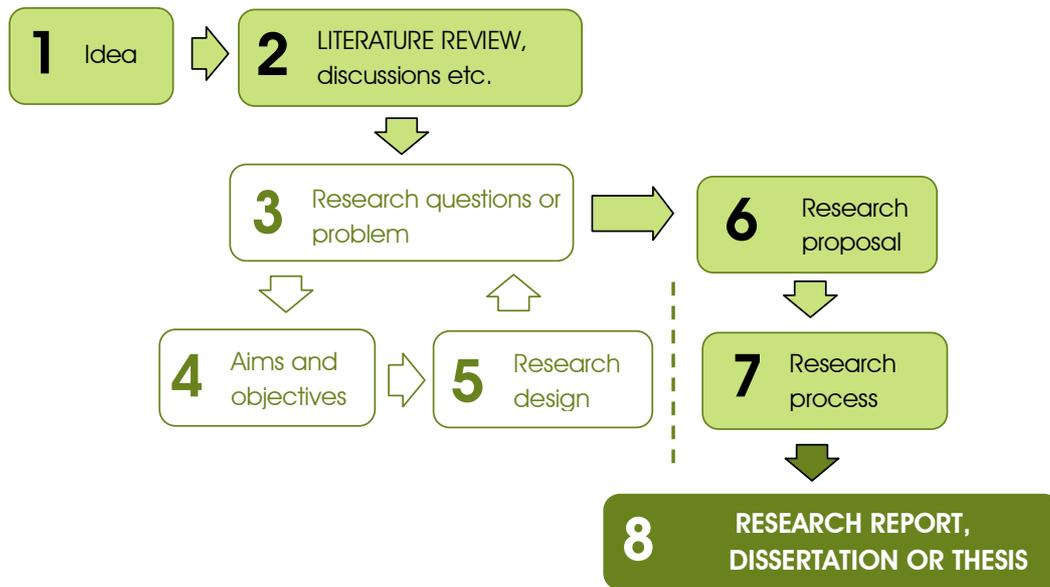
1. WHAT IS RESEARCH?

The word "research" has been used loosely to refer to a variety of activities such as finding an item of information or making notes and then writing a document paper. These activities are not research, but rather "information gathering". It is therefore important that you are not just summarising information or acquiring library skills when conducting research. The characteristics of true research are listed below:

- Research originates from a question or problem;
- Research requires clear articulation of a goal;
- Research follows a specific plan or procedure;
- Research divides the principal problem into more manageable problems;
- Research is guided by a specific research question or hypotheses;
- Research accepts certain critical assumptions;
- Research requires the collection and interpretation of data in an attempt to resolve the research question that initiated the research;
- Research is cyclical or helical.

In every subject field, knowledge is incomplete and problems are waiting to be solved. You could address the lack of knowledge and those unresolved problems by asking relevant

questions and then seeking answers through systematic research, as illustrated in the following flow diagram:



- This section deals with the initial stages of the research proposal writing process and culminates in the drafting of a **research proposal**. A research proposal gives the blueprint for the research process. Your actual research will follow the same pattern or logic as that indicated in the proposal. It therefore outlines your thinking about the research problem.
- In addition to reflecting all aspects of the intended research, such as the “what, why, when, where and how” of the proposed research, the research proposal must also “sell” your project to the reader or potential supervisor. It is your duty to convince the reader or supervisor that you have the necessary knowledge and expertise to be able to conduct the research.

2. STEPS IN THE RESEARCH PATHWAY

2.1 Choosing your research topic

All research starts with a problem. Such a problem can either reflect a real problem in everyday life or it can be a gap in knowledge. However, keep in mind that you are going to conduct research on your topic for the next two to three years. You are going to live, eat, sleep and dream it. It therefore has to be something in which you are really interested in. Otherwise you might give up as soon as you encounter the first obstacle.

- ***Identifying your research topic***

The first step is to identify your research topic, in other words, the problem that you are going to solve by means of this research project.

Your motivation for pursuing postgraduate studies is relevant in the choice of a research topic. If you have a professional reason for studying further – such as improving your career options or your marketability – you should choose a subject that is of immediate relevance and value to your present or desired work situation. However, if you want to do research because of your interest in a specific topic, you have the luxury of choosing any relevant topic.

- ***How to start***

Unless you know exactly what you want to do, a good way to start is to decide where your interest lies. Which undergraduate or honours courses did you really enjoy? What topics do you feel passionate about? This will indicate your broad field of interest. You should now narrow this down and identify an issue or problem that requires research. The following questions might give some guidance:

- Look at what problems exist in your area.
- What new developments are taking place?
- Read scientific articles on related issues.
- Speak to people who are working in your field of interest.
- Ask role players in government and NGOs what kind of research needs to be done – many organisations are understaffed and don't have the time or resources to conduct research.

Once you have an idea of what you would like to study, you should spend a lot of time trying to extract the essence or focus of the idea or problem.

- ***Think carefully about what exactly you wish to study***

Is it an object, a phenomenon, an entity, a process, a theory, or an event or do you want to devise social interventions?

- ***Read as much on the topic as possible***

By reading on your topic, you will formulate an idea of how other scholars have approached the subject, which aspects of the broad topic have already been studied, from what angle the topic was approached and what the latest findings are. Published scientific articles might also suggest areas of study or particular problems that you did not think of previously. **It is important to know what has already been done so that you can identify what has not been done, and thus to know where the gaps in knowledge are.**

Remember:

- Select a topic that is relevant to your own short or medium term career prospects.
- Select a topic that you find interesting, worthwhile and intellectually stimulating.
- Be realistic about what you can and cannot do.
- Ensure that your topic is at an acceptable scientific level.

2.2 Formulating the problem and defining the aim

- You should now have an idea of what you want to study. The next step is to transform the research idea into a research problem – into a question or questions to be answered. For example, what are the gaps in previous research that you can address? The literature that you have read will indicate where some of the gaps in knowledge are. This will assist in justifying your research.
- You should also be able to point out what the advantage will be of conducting your study. Be very clear about this since you will have to motivate your study with sufficient evidence for it to qualify as a research project. You should express your research idea into a **problem statement** or **research question(s)**.
- You should also have a clear idea of **why** your problem needs to be solved. This constitutes the motivation or rationale for your study. Reasons such as “*because it is interesting*” or “*because no one else has studied it*” or “*because someone has suggested it*” are not acceptable motivations.
- The **aim** of the study spells out precisely **what** you want to research, while the **objectives** break this down into achievable sub-sections. Formulating the aim as a question helps you to focus on the exact nature of the research. Use scientific action verbs such as to *explore / identify / examine / investigate / audit / describe / evaluate / assess*.
- The **title** of your dissertation or thesis must reflect the **aim** of the research.
- Keep in mind that you are studying towards a Master’s or Doctoral degree. Although there are exceptions, the majority of postgraduate studies will not solve the world’s problems. Refrain from vague motivations and aims such as “...to alleviate poverty in Africa”. Try to limit your study to one problem or one aspect or one area – especially for Master’s studies. You will find that as you progress with the literature study and the research, more questions about the specific topic will be raised than are answered, and your study will expand.

2.3 Drawing up the research framework and methodology

- You now have to think about how you are going to answer the research question. Usually there are a number of aspects that must be considered in order to answer the research question. Each one of these steps constitutes the different research objectives. The following example illustrates these concepts:

Example:

Let's assume that you wish to assess the feasibility of harvesting rainwater in an urban area such as the Gauteng Province (**aim** of your study):

To do this you will have to

- Determine how much municipal water is used in the study region, and its cost.
- Quantify how much water can be harvested from rainfall in the same area.

These constitute the **objectives** of the study. If you have solved these two problems, you will be able to answer your research question, namely: Is rainfall harvesting (environmentally and economically) feasible in the urban area. Obviously, each one of these steps or objectives involves a number of smaller actions and you will have to decide how each one of these can be done.

One of the first aspects that you will have to consider is determining the number and location of your sampling sites. These will have to be representative of the entire region so that it gives representative results. You will therefore have to use statistical techniques to select them.

One way of quantifying the amount of water that can be harvested is by means of calculations using mean annual rainfall and the surface area of roofs. You could determine the latter by means of remote sensing (aerial photography) or from municipal records.

The above gives you an indication of the data that you will require and the methods you will use to achieve your objectives.

Tip: For each objective, identify the types of data that you will need to research each objective and indicate why you need that data, where it is at present, how you will acquire it and what you will do with it (e.g. statistical analyses).

As you read up about your topic you will find that you may have to refine your study. For example, the quality of roof-harvested rainwater is not particularly good and may pose a health risk. You may therefore decide that the rainwater harvested should be used only for gardens and swimming pools. This complicates matters because you

now have to find out what proportions of the water consumed is used for domestic vs other purposes and how much it would cost to install separate water supply systems for inside and outside the house. Alternatively, you may decide that the harvested water needs to be purified. You would then have to investigate the efficiency and cost of different water purification systems.

From the above example, it should be clear that you have to identify all the steps that must be followed to achieve the ultimate aim of your study.

- The **research framework** is a plan of **how** you intend conducting the research project. Each component in the design has its own **methodology**.

Tip: Illustrate these steps in the process by means of a flow chart. This will assist you to identify the sequence in which the research must be conducted.

Remember:

It is vital that you formulate the research problem in such a way that it is feasible in terms of

- the **time** that you have available;
- the financial costs;
- other resources required.

2.4 Writing the research proposal

You should now have enough information to write your research proposal. The following questions will help you to formulate a focussed definition or formulation of your topic:

- I AM STUDYING (what?)
- BECAUSE I WANT TO FIND OUT (why? – research problem)
- IN ORDER TO (outcome / justification / rationale)
- BY (how? - broad approach / methodology)

- ***What is a research proposal?***

The **research proposal** is a clear and concise outline or summary of what topic is to be studied, what the objectives of the research are, what type of study will be conducted and how it is to be conducted. The research proposal looks forward – what **will be** done, while the dissertation or thesis reports on what **has been** done.

It is important that the research proposal express the research logic for your studies. It gives a blueprint for your research in that your actual research will follow the same pattern or logic as that indicated in the proposal. It therefore outlines your thinking about the research problem.

Research is never a solitary activity. It involves many people and requires access to and use of resources beyond your own. For that reason, it must be carefully planned, laid out, inspected and, in nearly every instance, approved by others.

A research proposal also forms the basis for the working relationship between you and your supervisor in that you are telling him/her what you want to study and how. Once he/she has accepted your proposal, and agreement has been reached between the two of you.

- You agree to undertake the proposed study along the lines indicated and outlined in your research proposal;
- The supervisor agrees to provide you with the necessary advice and guidance.

Keep in mind that this is not completely binding since you can (and probably will) change many aspects of the research. However, these changes can only be done after consultation with your supervisor.

- ***Contents of a research proposal***

Based on the previous discussion, the following should be included in the research proposal:

- Covering page
- The title of your dissertation or thesis;
- A background literature study of your research field – references of more than 30 peer reviewed scientific papers;
- Need for the research / motivation;
- The formulation of your hypothesis or research problem. This should follow from and supported by your literature study;
- Your specific research question(s);
- Purpose of the research expressed as the research aim;
- Sub-problems expressed as the research objectives - in order to focus its recommended that the research objectives are limited to a number of three;
- How do you intend to solve or achieve each one of these objectives;
- Research design and methodology;
- Limitations;
- A work plan (time frame and target dates) according to a chapter breakdown – a recommended period of two years for Master's and three years for Doctoral studies;
- A reference list of peer reviewed scientific papers.

If applicable, the following should also be included:

- Terminology;
- Budget;

- Appendices;
- Ethical statement;
- Intellectual property rights.

3. Language

A research proposal (and dissertation or thesis) is regarded as a scholarly scientific document. It has to conform to the style and format required by the scientific community and the academic institution. At the same time it must be clear and concise.

In general:

- Try to keep sentences simple and short – no one will be impressed if you use convoluted thinking or jargon;
- Keep in mind that a sentence expresses a single idea. Don't confuse issues. Sentences within a paragraph should follow a logical order, expanding on the topic under discussion;
- Don't use the same pronouns over and over again. Use a dictionary or a thesaurus to obtain alternative words or phrases;
- Don't repeat yourself;
- Don't copy text from a book or article without giving the reference. **This is plagiarism and is against the law.** See <http://www.library.up.ac.za/plagiarism/index.htm> for the UP policy and advice on how to prevent plagiarism. Rather read articles and see how you should refer to the originators of the ideas or information in your own words.
- Words or expressions that are often used can be replaced by acronyms. Make sure that such an acronym is defined at the FIRST use of the word or expression, and that the word or expression is never again repeated in the text since it should be replaced by the acronym.

It is essential to arrange your material in logic sequence. Clarify your thoughts. Structure your paragraphs so that they follow each other in a logical way. Supply reasons for any decision that you make. For example, explain why you have chosen a specific study area or methodology.

After you have written something, take a break for a day or two and then read what you have written as though you have never seen it before. Ask yourself:

- Does it make sense?
- Are there glaring inconsistencies, errors or omissions?

Check your spelling and grammar. Read the document carefully and give it to someone else to read. If you know that you have difficulties with spelling and grammar, consider having your document professionally edited before submission.

4. REFERENCING SYSTEM

Correct referencing of academic writing is of the utmost importance. When the author of a source is not referred to, it is regarded as plagiarism. It is therefore important that you keep good record of all the sources that you consult and that referencing be kept up to date. A useful hint to assist you with referencing is to make notes of all the sources you access as you progress through your research by writing down the source details of papers and books from the library.

References according to the Abridged Harvard style

It is recommended that the Abridged Harvard referencing style is used for referencing in the text of a dissertation or thesis. Details are available at the following UP Library web site: <http://www.ais.up.ac.za/edu/referencing.htm>

SECTION C: Dissertation or thesis

The **PREFACE** section and **CHAPTER 1** of a dissertation or thesis should be written in a prescribed format or sequence, as indicated below. From **CHAPTER 2** onwards the researcher can decide on the titles and the number of chapters. However, the final chapter should address **CONCLUSIONS AND RECOMMENDATIONS**, followed by **REFERENCES**, and if relevant, **APPENDICES**.

1. Cover page

The title on the cover page should be exactly as indicated on the "Title Registration Form" approved by the relevant Faculty. The layout should be according to the following example:

<p>Predicting the development of weather phenomena that influence aviation at Abu Dhabi International Airport</p> <p>by</p> <p>Michael Pierre de Villiers</p> <p>Submitted in partial fulfilment of the requirements for the degree</p> <p>DOCTOR OF PHILOSOPHY</p> <p>in the</p> <p>Faculty of Natural and Agricultural Sciences</p> <p>University of Pretoria</p> <p>February 2010</p>

2. PREFACE: Declaration

The title page should be followed by the following declaration, on a single page, signed by the student:

All pages in the preface section of the dissertation or thesis should be numbered using Roman numbers: (i, ii, iii, iv, v....)

DECLARATION

I, (*full names of researcher*), declare that the dissertation / thesis, which I hereby submit for the degree (*name of degree as on cover page*) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

SIGNATURE

DATE

3. PREFACE: Summary of research

The declaration page should be followed by a ONE PAGE summary of the research (similar to the abstract of a scientific paper) in the format of the following example:

Predicting the development of weather phenomena that influence aviation at Abu Dhabi International Airport

Michael Pierre de Villiers

Promoter: (*Full name of promoter*)
Department: Geography, Geoinformatics and Meteorology
Faculty: (*Name of Faculty*)
University: University of Pretoria
Degree: (*Name of degree as on cover page*)

SUMMARY

(*A summary or abstract of the research written up in this dissertation / thesis.*)

4. PREFACE: Acknowledgements

Acknowledgements should be listed on a single page:

ACKNOWLEDGEMENTS
<ul style="list-style-type: none">• (Acknowledgement 1)• (Acknowledgement 2)• (Acknowledgement 3).....

5. PREFACE: Table of content

A table of content, with the Chapters and Sections clearly listed, is required:

TABLE OF CONTENTS		
CHAPTER 1	Introduction	
1.1	(Title of Section 1)	(page number)
1.2	(Title of Section 2)	(page number)
.....		

6. PREFACE: Lists

As reference, it is required that all symbols, acronyms, figures and tables used in the dissertation or thesis be listed:

LIST OF SYMBOLS	
Φ:	Latitude
θ:	Longitude
LIST OF ACRONYMS	
GGM:	Geography, Geoinformatics and Meteorology
NAS:	Natural and Agricultural Sciences
LIST OF FIGURES	
Fig 1:	A map of the study area
Fig 2:	Monthly rainfall over the study area
LIST OF TABLES	
Table 1:	Latitude and longitude positions of observation points.

7. CHAPTER 1

The layout of **CHAPTER 1** is very similar to that of the **RESEARC PROPOSAL**, as discussed in **SECTION B**, although more comprehensive. Section titles in **CHAPTER 1** are not prescribed and may vary according to the nature of discussion by the researcher, but the following information should be included in the sequence given:

Example of the recommended page layout of chapters:

CHAPTER 1 Introduction
1. BACKGROUND
Previous research findings have revealed that.....
1.1 Study domain
A map of the study domain is given in Figure 1.....
1.1.1 <i>Observation points</i>
Latitudes and longitudes of observation points are listed in Table 1.....

- A well-referenced background literature study of your research field;
- Need for the research / motivation – outcome based on the literature study;
- The formulation of your hypothesis or research problem. This should follow from and supported by your literature study;
- Your specific research question(s);
- Purpose of the research expressed as the research aim;
- Sub-problems expressed as the research objectives
- How do you intend to solve or achieve each one of these objectives; research design and methodology – in order to focus its recommended that the research objectives are limited to a number of three;
- Limitations;
- ORGANISATION OF THE REPORT (a short summary of the content of each chapter).

SECTION D: Potential supervisors

The following academic staff members are qualified to serve as supervisors:

NAME	E-MAIL ADDRESS	RESEARCH FIELD
• Dr Serena Coetzee	serena.coetzee@up.ac.za	Geoinformatics
• Dr Daniel Darkey	daniel.darkey@up.ac.za	Geography
• Prof Hannes Rautenbach	hannes.rautenbach@up.ac.za	Meteorology
• Prof Paul Sumner	paul.sumner@up.ac.za	Geography
• Prof Coleen Vogel	coleen.vogel@up.ac.za	Geography
• Dr Joel Botai	joel.botai@up.ac.za	Earth sciences
• Ms Nerhene Davis	nerhene.davis@up.ac.za	Geography
• Mrs Liesl Dyson	liesl.dyson@up.ac.za	Meteorology
• Dr Natalie Haussmann	natalie.haussmann@up.ac.za	Geography
• Dr Mary Lawhon	mary.lawhon@up.ac.za	Geography
• Ms Sanet Eksteen	sanet.eksteen@up.ac.za	Geoinformatics
• Mr Michael Loubser	michael.loubser@up.ac.za	Geography
• Mr Philemon Tsela	philemon.tsela@up.ac.za	Earth sciences

The Department of GGM had also appointed a number of Extraordinary Staff members (see www.up.ac.za/ggm) who are well-qualified to supervise postgraduate students.