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UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Natural and Agricultural Sciences

Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tša Tlhago le Temo



Postgraduate Handbook

Department: Geology

Departement: Geologie

**Guidelines for Current and Prospective Masters and
Doctoral Students (Postgraduate Handbook)**

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1. Introduction

1.1. About the Department

The Department of Geology is housed in the Faculty of Natural and Agricultural Sciences on the Hatfield Campus of the University of Pretoria.

Training in Mineralogy and Mining Geology are strong in the Department and are supported by the excellent analytical facilities within the Department (XRF, XRD and electron microprobe) and the close working relationships with the mining industry.

Additional to this, the four present research focus areas of the Department are:

- Engineering Geology and Hydrogeology
- UP Natural Hazard Centre, Africa
- Carbon Capture and Storage
- Unconventional and Renewable Energy Resources.

Energy, water and environment – these are the challenging topics for geoscientists in the 21st century on a regional to global scale. South Africa's energy and mineral resources need to be addressed in the context of global resource management to ensure sustainability. Universities are the academic platform for blue sky research on the one hand, and partners for applied research in collaboration with industry on the other hand. Both approaches are necessary to provide a broad basis of knowledge to students and to produce highly competitive graduates and future leading geoscientists for the academic and industrial labour markets, nationally and internationally.

1.2. Macro-alignment

The Department of Geology acknowledges the vision of the University of Pretoria and aims to train students at all levels to be internationally competent and locally relevant. The Department therefore focuses on a strong fundamental background applied to global and local issues of relevance.

The master's and doctoral degrees offered in the Department are respectively level 9 and 10 according to the South African Qualification Authority's (SAQA's) Higher Qualification and Education Sub Framework (HQESF).

All presented degrees allow for eventual professional registration with the South African Council for Natural Scientific Professions (SACNASP).

1.3. Undergraduate programmes

Two undergraduate programmes are offered, each comprising 120 credits or 1 200 notional hours. The B.Sc. Geology progresses to a B.Sc. (Hons.) Geology. The B.Sc. Engineering and Environmental Geology, which requires an additional major in mechanics, continues to one of four options:

- B.Sc. (Hons.) Geology
- B.Sc. (Hons.) Engineering and Environmental Geology (Engineering Geology)
- B.Sc. (Hons.) Engineering and Environmental Geology (Hydrogeology)
- B.Sc. (Hons.) Environmental Soil Science.

Further information regarding studies at honours level has to be obtained from the course coordinator directly. Note, however, that all honours programmes are presented full-time and, given the logical succession of the modules, run from January to December of the relevant year, and cannot be offered part-time. Separate study guides are available for the respective honours programmes forming the prerequisite for the M.Sc. and Ph.D. options.

Following on this, postgraduate programmes are offered with specialisation in Geology, Engineering Geology, Environmental Geology or Hydrogeology. The Department of Geology encourages students to complete their Masters 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 international scientific journals during their studies, and to engage with other scientists or students on a national or international level. More details are supplied below.

Postgraduate studies, notably at masters and doctorate level, should support the University of Pretoria's vision of being internationally acceptable and locally relevant. Research topics should therefore be publishable in international literature and contribute to local and international science and application.

1.4. Master's degrees

Master's programmes in the Department of Geology are research-only programmes. One exception is the M.Sc. Water Resources Management degree (which is a combination of coursework and research) offered through the UP Water Institute and Department of Microbiology with a research project supervised through the Groundwater Thrust of the Water Institute under special conditions.

The UP guidelines for postgraduate supervision states that the "... award of a research master's degree requires that a student demonstrates that s/he has achieved mastery in a specific academic or professional field. The master's graduate will have demonstrated that s/he has acquired a body of advanced-level knowledge, has completed a piece of independent research, and has applied skills of critical analysis and evaluation to the results of the research. Following a masters degree, the graduate should be able to integrate knowledge, handle complexity, formulate judgements and communicate their conclusions to an expert and non-expert audience, and possibly even continue into further studies.

The following Masters degrees are offered in the Department of Geology:

M.Sc. in Geology (code 02250141)

- GLY 890 Dissertation: Geology 890 (180 credits)

M.Sc. in Engineering Geology (code 02250371)

- IGL 890 Dissertation: Engineering Geology 890 (180 credits)

M.Sc. in Engineering and Environmental Geology (code 02250372)

- IGL 890 Dissertation: Engineering Geology 890 (180 credits)

M.Sc. in Engineering and Environmental Geology (Hydrogeology) (code 02250373)

- GTX 890 Dissertation: Hydrogeology 890 (180 credits)

180 credits translate to 1 800 notional hours. For a 45-week academic year comprised of 40 hours per week, this implies that the minimum period of enrolment for a Masters degree is one year and completion is expected within two years, irrespective of whether studies are full-time or part-time.

1.5. Doctoral degrees

UP's guidelines for postgraduate supervision defines a Doctor of Philosophy (PhD) degree as "... a research-based qualification, awarded for an independent study conducted in the sciences or humanities". Additionally, awarding the degree requires "... the creation and interpretation of new knowledge, making a significant and original contribution at the forefront of the academic discipline or area of professional practice, manifest(ing) ability to conceptualise, interrogate and answer high level research questions, and understanding of relevant research techniques" and should merit peer review and publication. The degree can only be awarded based on passing a thesis and an oral defence.

In exceptional circumstances, a doctoral degree can be conferred on a candidate who enjoys international recognition by virtue of outstanding and extensive research (doctoral degree by virtue of publications), or through upgrading of a master's dissertation.

The following Doctoral degrees are offered in the Department of Geology:

Ph.D. in Geology (code 02260521)

- GLY 990 Thesis: Geology 990 (360 credits)

Ph.D. in Engineering and Environmental Geology (code 02260542)

- IGL 990 Thesis: Engineering Geology 990 (360 credits)

Ph.D. in Engineering and Environmental Geology (Hydrogeology) (code 02260522)

- GTX 990 Thesis: Hydrogeology 990 (360 credits)

360 credits translate to 3 600 notional hours. For a 45-week academic year comprised of 40 hours per week, this implies that the minimum period of enrolment for a Doctoral degree is two years and completion is expected within three years, irrespective of whether studies are full-time or part-time.

1.6. Educational approach

In terms of the educational policy of the University it is accepted that "a student should undergo an academic-scientific moulding as to be able later in professional context to function as an independent scientist and to contribute to the creative development of the chosen profession... in effect it refers to a purposeful and pro-active education approach which brings with it a change in emphasis from the traditional lecturer-centred teaching approach to a more dynamic student-centred learning approach." (A new approach, Tukkie-onderrig, Vol. 1(2), 1986). A syllabus for this programme has accordingly been developed as worded in this study guide.

2. Admission Process**2.1. Are you eligible for the proposed studies?**

Navigate to "Postgraduate Applications" at www.up.ac.za/geology, or alternatively the following link, to ensure you comply with the admission requirements:

<http://www.up.ac.za/en/geology/article/46151/postgraduate-programmes-msc-and-phd>

This document is also attached in Appendix A. Resubmit the completed application to your proposed project promoter or supervisor prior to registering with the Faculty. Ensure that the form is completed in full by ticking appropriate orange-shaded boxes with "X" or entering information as requested.

Elaboration is required where green-shaded open boxes are supplied. If the space is insufficient, attach the required information as a separate text file. The Word-template can be requested from madip@up.ac.za.

Typically, admission depends on the availability of a supervisor experienced in your specific topic, as well as adequate funding for tuition, field work and analysis, an adequate preceding degree in your proposed field of study, and proof of adequate research leave from employers if studies aren't on a full-time basis.

2.2. Do you have a research proposal?

A research proposal has to be submitted with any query relating to M.Sc. or Ph.D. opportunities. The following outlines the expected contents and is also available in the Word-template (§4):

- Proposed title or topic
- Hypothesis or problem statement
- Rationale and literature review
- Main objectives
- Methodology
- Work plan.

2.3. Making contact

Following completion of §2.1 and 2.2, contact can be made with a prospective supervisor. All academic staff members are listed on www.up.ac.za/geology under “Staff”. On provisional approval of the prospective supervisor or promoter, a meeting can be scheduled and the applicant can submit the registration for the proposed programme to the Client Service Centre.

As soon as registration is successful, the student can meet with the supervisor or promoter.

2.4. Entry requirements and acceptance

It is expected from all M.Sc. applicants to have an honours degree and from all Ph.D. applicants to have a M.Sc. degree. The specialisation of the preceding degree should be in a field of geology or applied geology and will be validated by the prospective promoter/ supervisor. Academic transcripts and a curriculum vita will aid in establishing background knowledge.

Note that acceptance cannot be guaranteed. Even though the applicant can successfully submit the requirements as discussed above, a research supervisor still has to accept the student and the proposed project. Given the time and effort dedicated to postgraduate supervision, it is possible that a staff member is at some stage not available for supervision, or is focussed around a specific research topic which does not at that stage allow for new projects.

Given the high number of applications received, preference will be given to candidates who:

- Have performed above average in preceding studies
- Have completed preceding studies at well recognised tertiary institutions
- Have their own research funding or will be beneficial to occasionally funded projects
- Are willing to study full-time.

Should the Faculty and the Department accept the applicant, a meeting can be scheduled to commence with the research.

2.5. Re-registration

Re-registration will only be allowed if the student progressed satisfactorily and if approved by the Faculty Administration. Written requests have to be directed to the Faculty Administration in the event of enrolment for the fourth year of a masters or the 5th year of a doctoral degree.

2.6. Memorandum of understanding

It is imperative that the student and supervisor co-sign a memorandum of understanding for supervision of postgraduate students annually. This document serves as a contract between the University of Pretoria and the enrolled student and ensures that progress is properly monitored, and that ethical conduct is followed throughout the postgraduate studies. The document is available from the Department or from the Faculty and should be submitted to the Head: Student Administration diligently.

2.7. Submission guidelines

Faculty guidelines for the submission of dissertations and theses can be obtained from the supervisor or the Faculty help desk. Note the requirements of an approved title, 350-word summary, signed approval of submission form and, for doctoral candidates, a short curriculum vitae to accompany the submission.

Examination copies are ring-bound whereas final copies are hard-bound as per guidelines.

3. Contact Sessions with Supervisor

3.1. Project supervisor

The applicant should make contact with a potential supervisor from the Department to ensure that the application is directed to the correct person and that the Department is aware of the application in advance. The supervisor should approve the topic prior to registration for the proposed degree. Additional internal or external supervisors may be recommended by the applicant, supervisor or the University of Pretoria, where specialist input is required or where the main supervisor does not yet hold a Ph.D. degree.

The role of the supervisor is to be the primary source of guidance and mentorship. The student should show the willingness and ability to conduct independent research which should be monitored by the supervisor. The function of the supervisor is, therefore, to ensure good quality is maintained without significant actual contribution to the data collection or interpretation. As a result, the student will receive fair acknowledgement for their research, although the same courtesy should be extended to the research supervisor in all submitted dissertations, theses, publications and seminars.

According to UP's guidelines for postgraduate supervision, articles submitted for examination have to be approved by the supervisor if s/he is not added as a co-author.

3.2. Progress meetings

According to University policy, class attendance is compulsory. The same applies to scheduled contact sessions with the promotor/ supervisor. Contact should be made at least once per month during which progress will be monitored. Failure to attend or inadequate progress may result in registration being refused and studies terminated.

3.3. Compulsory research seminars

Two annual compulsory research seminars are hosted in the Department of Geology. The first (around April) is focused mainly around research proposals for new students and for final presentations for students writing up final dissertations and theses. The second (around October), on the other hand, represents a project progress seminar during which non-performing students may be refused reregistration for the study programme.

Seminars are presented in 10-20 minutes using a prepared slideshow, and are followed by 5 – 10 questions from the supervisor, other academic staff and attending students.

The supervisor may insist on additional departmental presentations of the project proposal, progress and results as seen fit. This notably applies where the project is conducted under external research funding or grants, for example presentation of projects at Water Research Commission steering committee meetings.

3.4. Consulting hours

The lecturers are available by appointment during the consulting times indicated on their office doors. Appointments should be made via email to ensure that a suitable date and time can be arranged. Due to other academic duties, lecturers cannot guarantee to be available at any given time.

4. Writing a Research Proposal

4.1. Scientific writing

It is expected from postgraduate students to master the English language and to be able to express their knowledge in scientific English.

The prescribed style sheet and format for written assignments will be supplied on request. The part on referencing is of particular importance because all inadequately referenced written submissions will be returned to the student for revision. If the referencing is still not complete or according to the guidelines the assignment will be awarded a zero mark. An English Handbook is available for download under *I am looking for...* on the Geology Department homepage (www.up.ac.za/geology).

4.2. Establishing a topic

The purpose of the research project should be clearly defined. The topic is generally broad and relates to a general interest in a subject. However, establishing a topic is important to redirect the application to the most relevant person where supervision will be most beneficial to the student. “Sedimentary Ore Bodies” or “Rock Mechanics” are not topics; more specification is needed, for instance “rock slope stability in coal mines”. The broad topic is then refined into a scientific question which is rephrased as a problem statement, hypothesis and/ or research question.

Research topics are variable and, to ensure measurable progress, it should be defined very clearly. Examples of types of research topics include:

- Hypotheses make statements and prove or disprove the likelihood. Conclusions should always specifically address the hypothesis, even if results are inconclusive, and should not opt for irrelevant replacements.
- Assessing methods employ different techniques to evaluate a specific method’s applicability and efficacy in addressing a given problem. Data validation becomes very important, as do the distinct mention of all assumptions and potential errors. Conclusions should address the specific results at the hand of validating a method or technique.
- Case studies should be vast enough to be of academic interest and should supersede mere studies rephrased into dissertation or thesis format. Care should be taken with case studies that all data and interpretation is the student’s own work, and not that of predecessors, employees at companies or already published findings. When case studies are used for academic research purposes, the student should obtain written permission of the data owner to publish the findings in academic literature.
- Research questions entail a very specific unanswered question which has been clearly noted as a research gap in recent academic literature. The objectives and methodology should work directly towards answering the question and the conclusions should supply a distinct answer. Care should be taken with research questions to conclude merely by stating that more work is required.

Recommendation: Identify the topic and elaborate on it in the purpose statement, hypothesis and rationale. It is easier to refine the title after the rationale has been written and the objectives have been outlined.

A purpose statement is a statement completely comprehensible in its own right which introduces the “what?”, “where?”, “how?” and “why?” of the proposed research. This establishes the topic through accentuating possible shortcomings or issues in the present understanding of the proposed topic without making any subjective or unsupported claims. Examples of purpose statements include:

- The dissertation will evaluate the possible connectivity between the Fountains East and Fountains West karst compartments in Pretoria through temporal geochemical and isotope data from the Upper Fountain and Lower Fountain.
- This research is based on the lack of correlation between calcretes in different basalt terrain in South Africa, and will address the formation of the pedocrete based on composition, strength and permeability to better understand the usability as construction material.

As opposed to this, a research hypothesis hypothesises, and provides a very distinct research question to address. These statements should be well-validated through the literature review and is generally much more specialised on a single method or aspect of the research. Examples include:

- This research aims to prove that steady-state flow conditions cannot be encountered in surface infiltration tests.
- This dissertation aims to prove that interflow can result in ferricrete formation on granitic hillslopes.

Recommendation: < 100 words, properly phrased as a self-standing sentence.

4.3. Rationale and literature review

The rationale provides background on the topic selected and motivates why the proposed research will be a contribution to the understanding of the topic. This can also be seen as a motivation for the research and is based on classical literature, research of recently published international literature and/or work experience during which a niche was identified. The rationale should be elaborate as this is the motivation for the research, without which the validity of the research topic may be questioned.

The preliminary literature review is often merged with the rationale as the development of the topic in international peer-reviewed literature commonly identifies the gaps. It is important that the classic literature and numerous recent (less than 5 years old) literature sources are cited as motivation.

Recommendation: 2000-3000 words, properly referenced by ten or more recent (last five years) journal papers. The rationale should include a preliminary literature review and the need for the research.

4.4. Objectives

Objectives supply an outline of what you want to achieve theoretically and does not overlap with the methodology. Objectives are not deliverables and should not be stated as products completed, nor should they simply summarise the methodology. Contrary to deliverables (which are actual deadlines for something which can be supplied in draft format to the supervisor), objectives supply milestones as well as the reason why these steps are required to be able to continue to the next objective. A typical sequence (where each follows on the preceding) is:

- Detailed literature survey on urban water supply from karst spring systems and the associated use of isotopes
- Collation of available data using ArcGIS to depict spatial variation and the use of Piper and trend diagrams to address the temporal variability
- Conceptual modelling of karst system with the inclusion of geotechnical boreholes data, known subsidences and inferring the chemistry
- Etcetera.

Recommendation: Each objective has to be addressed in the conclusions or findings of your research. List few but important objectives that will focus the research efforts on the most fundamental milestones.

4.5. Methodology

The methodology should represent the background to what will later form the “Materials and Methods” section and should include, where applicable:

- Proposed study area
- Sampling methods, frequency and analysis
- Modelling or interpretation techniques mentioning specific statistical methods, software and the like
- Means of data interpretation and validation
- Reporting.

Proper elaboration on methods is required and a simple bulleted list will not suffice. In-depth descriptions of field and laboratory techniques, analytical methods, modelling software and validation will ensure that

the project progresses at an adequate scientific level. Reasons for the use of single methods should be clearly addressed. Research focused around the efficacy of modelling in addressing a certain issue, for example, cannot be successful when using a single modelling software.

4.6. *Work plan and deliverables*

A work plan ensures that the student and supervisor have a clear understanding of what is required from whom at which stage. The work plan can be updated continuously, although deadlines have to be set to ensure adequate progress. A typical work plan lists deliverables against periods of action or periods of completion as shown below. It is always helpful to indicate time spent on the activity (indicated by "X" below) as well as a date of completion (indicated by shaded cells below).

	Year 1												Year 2					
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Del. 1	x	x	x															
Del. 2			x	x	x	x												
Del. 3							x	x	x	x	x							

Deliverables refer to agreed-upon milestones in the progress of the research project. Addressing an objective is achieved through the appropriate methodology and is the culmination of proper scientific method, appraisal and deduction. Deliverables should not be confused with objectives and methodology, and should be distinct sections of the work which can be considered completed and which is required to continue. The deliverables may include, for instance:

- Completion of literature review on <specific topic>
- Collation of available historical data
- Site walkover and surface geological mapping
- Intrusive field work and sampling
- Laboratory analyses of selected samples
- Draft Chapters 1 – 3 while laboratory testing continues
- Modelling
- Draft paper submitted to specified journal
- Analysis and interpretation
- Draft dissertation or thesis.

5. Plagiarism

5.1. *Policy on plagiarism*

Plagiarism refers to the appropriation of the work or ideas of others. Plagiarism is both unethical and illegal and may be regarded as a criminal offence in terms of the Copyright Act 98 of 1978. The University of Pretoria places a high premium on its academic standards and subscribes to a value system that requires strong action against plagiarism. Being regarded as a serious contravention of the University's rules, plagiarism can lead to expulsion from the University. For more information, see <http://upetd.up.ac.za/authors/create/plagiarism.htm> and Appendix B.

Plagiarism for written assignments is evaluated through Turnitin. Turnitin is a powerful antiplagiarism tool, but it does require some thought in using it properly. Basically, the system runs a piece of work against its database, and highlights all cases where a sequence of words matches a previously published work (the length of the sequence can be set by the user – default is 3 words in a row). The system then collates the number of words taken from a certain work, and compares this word count to the total word count in the paper to calculate a percentage (i.e. 300 words out of 3000 words= 10% for that source). The system will then calculate a gross plagiarism score, the Similarity Index, from the sum of all the different sources. Thus, 50 different sources each with 1% plagiarised will yield a Similarity Index of

50%, but so will 2 sources of 25% each. Thus, a lecturer cannot simply make judgements based on the Similarity Index- the plagiarism counts for individual sources must be examined.

Therefore the following values will be used to judge plagiarism in the Geology Department:

- Turnitin will be set to look for matching sequences of 3 or more words
- The bibliography/references will be excluded from the match
- The student may be allowed to run each piece of work through Turnitin ahead of the submission date, according to the lecturer's discretion.
- No individual source may contribute more than 3% to the total
- The overall similarity index must be 25% or less, unless all individual sources contribute less than 1% each to the total.

Contravention of these guidelines will result in legal action.

5.2. Referencing norms

Unless noted otherwise or discussed with the relevant lecturer(s), the following are almost always considered unacceptable references:

- Class notes
- Google search and Wikipedia results
- Any other improperly referenced website, including for photos and figures
- Verbal communication from persons who are not an expert related to the topic
- Unpublished and/ or anonymous reports
- Topical textbooks (i.e. first year textbooks)
- Technical consulting reports (unless as sources of data)
- News items and popular media (i.e. newspapers, magazines, Discovery Channel, etc.).

Note also that, when specific referencing requirements are given, the following definitions apply:

- Recent publications – those published in internationally recognised journals within the past 5 years.
- Classical texts – fundamental concepts from the most important defining literature sources (typically the first important concepts defined by the first scientist in that particular subdiscipline, and not merely generic collation of principles of a topic)
- Topical textbook – broad, generic overview of a subdiscipline, often inadequate for postgraduate purposes, and typically as prescribed or recommended for undergraduate courses.

6. Conducting Research

Research can commence once you have been registered for the proposed degree at UP and once you have signed the postgraduate contract with the Faculty.

It is expected from the student to take the lead in the research with guidance by the supervisor. The supervisor should not be responsible for gaining literature, conducting field work or interpreting results. Part of the postgraduate degree is the student's ability to conduct research independently and of good quality and this should be reflected clearly.

Students are encouraged to attempt writing papers for peer-review, notably in the review form based on the vast literature review undertaken for postgraduate degrees. The supervisor may require participation in departmental or other conferences, colloquia, congresses, symposia or forums.

7. Writing a Dissertation or Thesis

The dissertation or thesis should be complete on its own and should address the development of the research question, a proper case study (or case studies) to address the question and proper analysis. Examples of title and declaration pages are shown in

APPENDIX C. These pages precede the Table of Contents and have to be included containing the information shown, even if placed on separate pages or reformatted.

The following questions should supply requirements throughout the research process.

7.1. Purpose Statement, Hypothesis, Scope or Terms of Reference

Is the purpose of the investigation or research project clearly defined, within context of the expected outcomes and adequately addressed in the discussion?

7.2. Methodology

Are the correct methods applied and are the methods applied correctly to properly address the problem? Are the methods applied in a scientifically sound manner and are the shortcomings of the applied methods addressed? Are the methods well explained and understood?

7.3. Literature review

Is the literature review thorough yet concise and containing all the required information? Are the state-of-the-art documents cited? Are the required legislation and guidelines incorporated? Is the development of the methods well discussed? Is an adequate number of recent (ca. 5 years) publications included to address recent advances? Are concepts clearly discussed?

7.4. Data acquisition

Are the correct data utilised? Were data collected in the correct ways (e.g. correct excavation, sampling and preservation techniques)? Is the database statistically significant (e.g. not a single sample extrapolated over a complete study area)? Was data acquisition well planned and well executed? Was the student involved directly in the data acquisition?

7.5. Data analysis

Are the correct methods of data analysis employed? Is the statistical significance or representativeness of the data adequately described? Are analyses well formulated and explained to ensure duplication of results?

7.6. Results or appraisal

Are the results well described in context of the purpose statement and results obtained? Is the discussion well written to clarity and technical soundness? Are the results meaningful, even if in contradiction to the initial purpose statement? Are the conclusions and recommendations valid?

7.7. Bibliography and plagiarism

Is the list of references thorough and up to date? Were the correct methods of summarising, paraphrasing and quoting employed? Is the student guilty of plagiarism?

8. Writing a Research Paper

A research paper is generally 4 000-10 000 words (depending on detail) and written with the following headings:

1. Introduction
2. Literature review
 - 2.1. Classical literature
 - 2.2. Recent advances
3. Materials and methods

- 3.1. Study area
- 3.2. Methodology
- 3.3. Sampling and data acquisition
4. Results
5. Discussion/ Conclusions
6. Recommendations/ The Way Forward.

Your supervisor will be able to guide you through this process and in the selection of adequate journals for submission. It is ethical – given the amount of effort from the supervisor's behalf – to make him/ her co-author to your publication, provided that he/ she approves the content. Furthermore, the student should note the University of Pretoria as his/her affiliation to credit the institution at which the research was conducted.

9. Examination

Assessment of dissertations and theses will be by internal and external examiners and excludes the promotor/ supervisor. The student may not be supplied the details of the examiners and the promotor/ supervisor has no contribution to the final mark.

The supervisor is responsible for the title registration and for nomination of the examiners. The student should ensure that the title is formalised well in advance and used on the dissertation or thesis exactly as it is typed on the title registration form.

At least one scientific paper should be submitted to an accredited, internationally recognised, peer-reviewed journal. Proof of acceptance for review should be submitted with M.Sc. dissertations and proof of publication should be submitted with Ph.D. theses together with examination copies. Only journals accepted for subsidy by the Department of Higher Qualifications will be acknowledged.

An oral defence has to be scheduled for Ph.D. candidates before the candidate can be allowed to pass.

10. Important Dates

10.1. Submission dates for graduation

For April graduation, examination copies have to be submitted to the Faculty mid-August of the preceding year and have to be accompanied by permission for submission by the supervisor. Comments will be returned via the supervisor and three bound final copies have to be submitted to the Faculty mid-February of the year of anticipated graduation.

For September graduation, examination copies have to be submitted to the Faculty mid-May of the same year, and also have to be accompanied by permission for submission by the supervisor. Comments will be returned via the supervisor and three bound final copies have to be submitted to the Faculty mid-August of the year of anticipated graduation.

It is highly recommended that a draft final is submitted to the supervisor for comments at least two months in advance of submission of the examination copies. For M.Sc. dissertations, a submitted manuscript has to be submitted with the examination copies, and for Ph.D. theses, at least one published paper has to be submitted.

10.2. Departmental research seminars

The research seminar dates will be communicated to all registered postgraduate students early in 2014.

11. Outcomes and Requirements

11.1. Critical Cross-Field Outcomes

The critical cross-field outcomes include, but are not limited to:

- Identifying and solving problems by using critical and creative thinking.
- Working effectively with others as a member of a team.
- Organising and managing oneself and one's activities responsibly and effectively.
- Communicating effectively using visual, mathematical and language skills in the modes of written persuasion.
- Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- Contributing to the full personal development of each learner and the social and economic development of society at large by making it the underlying intention of any programme of learning to make an individual aware of the importance of:
 - Reflecting on and exploring a variety of strategies to learn more effectively;
 - Participating as responsible citizens in the lives of local, national and global communities;
 - Being culturally and aesthetically sensitive across a range of social contexts;
 - Exploring education and career opportunities; and
 - Developing entrepreneurial opportunities.

11.2. Ethical Behaviour

It is expected from students to behave in an ethical and considerate manner. For this purpose, the following should be noted:

- Lecturers supply their personal contact details for communication pertaining to the study programme. Standard office hours apply and no telephone calls will be answered outside of these times or when the lecturer is not available. No text messages or instant messages will be answered and only telephone calls at reasonable times will be responded to.
- Email is still the preferred mode of communication. Given present technology, response via email can be traced and can be within reasonable time. All queries should be directed to the lecturer's official University of Pretoria email address and reasonable time should be allowed for response.
- Lecturers will not be available for consultation directly prior to tests, seminars or other official meetings. Lecturers should not be contacted at night and no rude comments about non-response will be tolerated.
- Students are under no circumstances allowed to mention or post comments or images of lecturers or fellow students on the Internet or on any social medium (e.g. Facebook, Twitter, LinkedIn, YouTube). Failure to comply with this will be acted on as it may compromise the image of the individuals or the University in general.
- Any other ethical misconduct, including for instance prejudice or plagiarism, will be submitted to the University's office responsible for conflict resolution and they will decide the outcome.
- Grievances can be aired to the relevant course programme supervisor or the head of the department who will guide the student regarding the proper channels towards resolution.

APPENDIX A. APPLICATION TICK LIST

Name of applicant:	
Highest qualification:	
Where obtained:	
Year obtained:	
Institution awarded:	
Activities since:	(e.g. working; studying further; unemployed)
Contact email:	
Contact telephone:	

1.	DEGREE ACCREDITATION	YES	NO
1.1.	Did you complete your previous degree at the University of Pretoria, majoring in a geological discipline?		
1.2.	If "NO" has your latest degree been approved by SAQA?		
1.3.	Does your previous degree directly precede the degree you are enrolling for?		

2.	ENGLISH ABILITIES	YES	NO
2.1.	Is English your first language or did you complete your previous degree in English?		
2.2.	If "NO", did you pass the TOEFL test?		

3.	PROJECT AND STUDY FINANCE	YES	NO
3.1.	Will your employer or bursar pay for your studies and your project work?		
3.2.	If "NO", do you have funding for your postgraduate studies and project work?		

4.	VISAS, PERMITS AND FURTHER DOCUMENTATION	YES	NO
4.1.	Do you have all required study permits, visas and/ or insurance documents in place?		

5.	DEGREE PURSUED	YES	NO
5.1.	Which degree topic are you applying for?		
	Engineering and Environmental Geology		
	Engineering Geology		
	Geology		
5.2.	What level of study are you applying for?		
	M.Sc.		
	Ph.D.		
	Post-doctoral		
5.3.	Will you be studying:		
	Full-time		
	Part-time		

	ADDITIONAL INFORMATION AND ATTACHMENTS (* optional)	YES	NO
6.1.	Identity document (attached)		
6.2.	Complete academic transcripts (attached)		
6.3.	Degree certificates (attached)		
6.4.	Curriculum vita		
6.5. *	Do you have a valid South African driver's license?		
6.6.	Will you be available for consulting as required?		
6.7.	Will you be available for all research seminars as required?		
6.8. *	Additional comments or queries noted below?		

APPENDIX B. DECLARATION ON PLAGIARISM

The **Department of Geology (University of Pretoria)** places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation. While academic staff teaches you about referencing techniques and how to avoid plagiarism, you too have a responsibility in this regard. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author's work (e.g. a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim), but also when you submit someone else's work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it. You are not allowed to use work previously produced by another student. You are also not allowed to let anybody copy your work with the intention of passing it off as his/her work.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University's rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the **Department of Geology (University of Pretoria)**. No written work will be accepted unless the declaration has been completed and attached.

I, the undersigned, declare that:

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this assignment (e.g. essay, report, project, assignment, dissertation, thesis, etc) is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with Departmental requirements.
3. I have not used work previously produced by another student or any other person to hand in as my own.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.
5. I understand the Department of Geology's policy on plagiarism and the criteria set for using Turnitin by the Department, and acknowledge that I am allowed to use Turnitin to evaluate my own work prior to submission.

Full names: _____

Student number: _____

Date submitted: _____

Topic of work: _____

Signature: _____

Supervisor: _____

APPENDIX C. EXAMPLES OF TITLE AND DECLARATION PAGES

Example of Title Page

Comprehensive project title written exactly as per title
registration submitted by supervisor

Submitted as partial requirement for the degree
M.Sc./ Ph.D. Geology/ Engineering Geology/ Hydrogeology

Submitted to:

Department of Geology
School of Physical Sciences
Faculty of Natural and Agricultural Sciences
University of Pretoria

Submitted by:

Student First Names followed by Surname
Student Number

Date of Final Version

Example of Declaration Page

DECLARATION:

I, the undersigned, declare that the thesis/ dissertation, which I hereby submit for the degree MSc/ PhD 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.

Full names: Name Name SURNAME

Student number: 12345678

Date submitted: 7 February 2014

Degree: M.Sc./Ph.D. Geology/ Engineering Geology/ Hydrogeology
Comprehensive project title written exactly as per title registration submitted by supervisor

Topic of work: Prof Name Name SURNAME, Department of Geology

Supervisor(s): Dr Name Name SURNAME, Institution

Co-supervisor(s): Signature: _____

ACKNOWLEDGEMENTS:

List important contributions, e.g. sources of data, supervisors and co-supervisors, permission for access, funding agencies, etc.

ABSTRACT:

Supply a concise (<500 words) summary abstract of the purpose of the research, methodology, study area and results without references (unless the study is focussed around previously published work and reference is required for context), figures or tables. Formatting is kept at a minimum and no redundant information is supplied. The reader is expected to find elaboration in the dissertation or thesis; the abstract should merely supply an overview and a summary of the most important findings and serves the additional function of electronic indexing. For research purposes, abstracts should not be open-ended and should be conclusive containing definitive results.