

## **FACULTY OF MEDICINE AND HEALTH SCIENCES**

# **GUIDELINES FOR RESEARCH ASSIGNMENTS FOR STRUCTURED MASTER'S PROGRAMMES**

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## 1. INTRODUCTION

This document ties in directly with two sets of formal provisions governing master's degrees. Therefore, please read these provisions **together with**:

- those under "The Degree of Master" in Part 1 of the University Calendar (General); and
- those in Part 12 of the Calendar (Medicine and Health Sciences).

Keep this document handy for **future reference**.

Candidates in all fields of structured master's studies must, as part of their final examination, complete an assignment or one or more publications which the relevant postgraduate programme committee (PPC) and environmental head (of the department, division or centre) have confirmed to prove to their satisfaction that the candidate is able to:

- plan research;
- apply the literature review to the research;
- apply principles of relevant health evidence as well as elementary statistical methods and/or qualitative analysis, as applicable;
- conclude a project; and
- draw meaningful conclusions.

In achieving these objectives, candidates must demonstrate that:

- they have developed an ability for independent critical judgment;
- they can discuss both existing and newly acquired knowledge rationally and objectively; and
- the research contributes to existing knowledge.

## 2. ASSIGNMENT FORMAT

2.1 The research for and preparation of a manuscript or assignment must be done, either in full or in part, while the candidate is registered for a structured master's programme. These activities may, however, be based on research that was conducted beforehand.

2.2 Candidates must furnish the following declaration on the first page of the assignment after the title page, and sign and date it:

### Declaration

I, the undersigned, hereby declare that the work contained in this assignment is my original work and that I have not previously submitted it, in its entirety or in part, at any university to obtain a degree.

**Signature:** .....

**Date:**.....

2.3 **Candidates may submit their assignment in one of two formats:**

**Option 1** – a completed manuscript for a peer-reviewed scientific journal (preferably subsidy-bearing, i.e. that is included in the Department of Higher Education and Training's list of approved scientific journals) with the candidate as first author, or

**Option 2** – a full-length research assignment.

For **option 1**, assignments must comply with the following:

- the requirements of the relevant scientific journal, and
- the specific requirements for the relevant degree (besides the word count, which must comply with that required by the journal), such as a background to the study, an extensive literature review and a conclusion.

For **option 2**, assignments must contain the following:

- a **declaration** of the nature and extent of contributions by the candidate and that of their collaborators;
- a **table of contents** with accurate page references;
- an **abstract** in both English and Afrikaans;
- an **introduction** to and overview of the study, preferably one page at most in length, that define the research topic briefly;
- a **literature review** that focuses on the specific, demarcated area of investigation, that elucidates the research topic and that culminates in the formulation of a **problem statement, research question(s) and/or hypothesis**;
- the **aim of the investigation**, which must arise logically from the literature review and may serve as the **motivation** for the study;
- a methodology and a declaration of the **method** and **materials** to be used (experimental animals, patients, students, tissue culture, therapeutics, data collection, analytical and interpretative approaches, interventions, evaluations, ethical considerations, etc.);
- the **results** or findings after quantitative or qualitative analysis, elucidated by clearly comprehensible tables, diagrams, graphs, et cetera that are accompanied by appropriate annotations;
- a **discussion** that succinctly argues and interprets the results or findings in the light of the literature review, including a description of any limitations;
- a **conclusion** that summarises the findings, the interpretation thereof and unresolved issues concisely; this chapter may close with **recommendations** suggesting new approaches, clinical applications and/or further research projects; and
- a **list of references** in accordance with any acknowledged style.

## 2.4 Research criteria

2.4.1 All efforts must be based on clearly formulated problems and aimed at gaining insight by methodically gathering and systematically processing data, whether quantitative or qualitative, with a view to the following:

- expanding the body of scientific knowledge; and/or
- scientifically developing the application possibilities of theoretical knowledge; and/or
- developing or improving techniques, systems, processes or methods for practical use in a manner that is scientifically planned and sound.

2.4.2 The research assignment for a master's programme is defined as follows:

- The assignment forms an independent and cohesive component of programme activities; cohesion will preclude unconnected activities (especially those that are not directly linked to the clearly formulated problem or problems) from infiltrating the research.

- The research is independent of any taught modules in the programme.
- The research is conducted under the guidance of a supervisor.
- The research comprises 20% to 49% of the total credits of the programme.
- The research should allow the candidate to –
  - gain insights by methodically gathering and systematically processing data and focussing on clearly formulated problems, which would result in basic scientific knowledge being expanded and in application possibilities of scientific knowledge or techniques, technology, theory and understanding being developed or improved;
  - conduct research autonomously, professionally and ethically;
  - communicate the research results in an academic or professional way; and
  - produce an academically acceptable assignment based on the activity.

2.4.3 The following requirements reflect the Higher Education Qualifications Subframework (HEQSF, 2013:32) requirements for the written research component of a masters' programme:

- The assignment may be presented in various formats – research assignment, mini dissertation, treatise, creative work, a series of peer-reviewed articles or other research-equivalent outputs.
- The research must be consistent with the characteristics of the discipline and field as well as the purpose of the programme.
- The candidate must handle complex issues both systematically and creatively, design and critically appraise the research, show sound judgment in selecting from the available data and information, communicate conclusions clearly to specialist and non-specialist audiences, demonstrate self-direction and originality in engaging with and solving problems, act autonomously in planning and implementing tasks with a theoretical underpinning and continue to advance their knowledge, understanding and skills.
- The component must comprise at least 60 credits at NQF level 9.

2.4.4 In addition to the knowledge, methods and procedures to be demonstrated by masters' students in performing independent research and submitting a written component, they must demonstrate the abilities defined in paragraphs (f) and (e), respectively, of the SAQA level descriptors for NQF level 9 (*South African Qualifications Authority [SAQA] Level Descriptors for the National Qualifications Framework, 2012*):

- “Communicate and defend substantial ideas produced or developed by research in the area of specialisation, using a range of advanced and specialised skills and discourses in the field, discipline or practice, with audiences of varying knowledge and expertise” (par. f).
- “Identify and make ethical decisions that affect knowledge production or professional practice and contribute critically to the development of ethical standards” (par. e).

### 3. TYPES OF RESEARCH

The various types of research include:

- 3.1 laboratory-based research relating to the candidate's discipline;
- 3.2 prospective preclinical or clinical research;

- 3.3 goal-directed retrospective research, based on information available in data banks or files;
- 3.4 epidemiological research;
- 3.5 health service system research; and
- 3.6 secondary research such as a systematic review (with or without meta-analysis), scoping review, methods study (such as a methods review or meta-epidemiological study) and qualitative systematic review (qualitative evidence synthesis) and which can take various forms –
  - 3.6.1 a manuscript that has already been accepted for publication in a (preferably subsidy-bearing) peer-reviewed scientific journal with the candidate as first author; this option, just like the other options, must be undertaken in accordance with a pre-planned protocol (submitted as such beforehand) that clearly specifies matters such as the aim, methodology and procedure; also, the work must make a scientific contribution to the subject area concerned, for instance by being presented as a systematic review, scoping review or meta-epidemiological study,
  - 3.6.2 qualitative and mixed-methods research, or
  - 3.6.3 research on instruction/education/teaching and learning.

#### 4. PROCESS

- 4.1 Candidate must submit the documentation listed below to the environmental head concerned:
  - 4.1.1 The research **protocol**, which may not exceed five double-spaced pages of typescript (unless otherwise stipulated for the specific degree) and must specify the following:
    - the proposed place where research will be conducted,
    - the topic and scope of the proposed research,
    - a concise literature review,
    - the aim of the proposed research and/or one or more statements of the hypotheses,
    - the materials and methodology,
    - the projected results, where possible,
    - ethics involved in the research, and
    - the budget, available finances and experimental materials.

The environmental head must sign off the protocol before it may be submitted for ethical clearance.
  - 4.1.2 Candidates must submit their **completed proposal** (available at the Division of Research Development and Support: Tygerberg Campus) to the Health Research Ethics Committee (HREC), who will evaluate the ethical aspects of the project and register it.
 

**The supervisor concerned will assist candidates with difficulties compiling, formatting or organising their protocol according to formal requirements.**

The Stellenbosch University (SU) HREC uses an electronic ethics review management system, Infonetica®, to support the application and review process. The portal for accessing the system is at [http://www.sun.ac.za/english/faculty/healthsciences/rdsd/ethics\\_application\\_package](http://www.sun.ac.za/english/faculty/healthsciences/rdsd/ethics_application_package).
- 4.2 To ensure that examiners be appointed in good time, candidates must inform their supervisor in writing and at least four months in advance that they intend to submit their research assignment on a specific date – or earlier, as stipulated for the relevant degree. See section 8 below, “Examiners”.

- 4.3 To ensure that the examination process be completed in good time, candidates must submit electronic copies of their assignment for examination as follows (master's and doctoral dissertations have other Faculty-specific submission dates that do not apply here):
- to graduate at the December ceremony: before 1 October, and
  - to graduate at the March ceremony: before 1 December.
- The supervisor must approve the research assignment before it may be submitted for examination.
- 4.4 Examiners must have **at least one month to assess** an assignment. They must submit their reports to the environmental head or the delegate of the executive head, who must submit the examiners' reports for recommendation to the Deputy Registrar: Tygerberg Campus or their delegate at least 10 working days before the deadline for the submission of final marks. The environment (department, division or centre) concerned is responsible for uploading the final mark before the deadline set by the University. Failure to follow these guidelines may jeopardise the candidate's being awarded their degree at the next graduation ceremony.
- 4.5 The candidate is responsible for submitting the final assignment electronically to the environmental head and the supervisor by the date that the University sets each year.
- 4.6 The candidate may not submit the assignment for final assessment without written permission to do so from the supervisor(s).

## 5. ENVIRONMENTAL HEAD

'Environmental head' refers to the head of the division, department or centre where a candidate is registered for full-time studies at the Faculty of Medicine and Health Sciences (FMHS).

- 5.1 The environmental head or their delegate (e.g. the supervisor) is responsible for monitoring and further handling the protocol, and for the administrative arrangements associated by this function.
- 5.2 The environmental head must familiarise themselves with all the formal provisions and requirements regarding the protocol, the research, the submission of the assignment and its examination.
- 5.3 The environmental head is responsible for approving and appointing a supervisor, and must ensure that the supervisor can cope with the number of students entrusted to them. The onus rests on the environmental head to decide how this latter requirement is to be met, taking into account the special demands and requirements of the discipline in question as well as the different interests, approaches and capacities of potential supervisors. Supervisors must be in SU's employ, whether full-time or on the joint payroll.
- 5.4 The environmental head is responsible for appointing examiners in consultation with the supervisor, and for obtaining examiners' agreement to their appointment. Subsequently, the environmental head must submit the examiners' names via the relevant PPC to the Committee for Postgraduate Teaching (CPT) and the Faculty Board. (See 6.5 below.)
- 5.5 The environmental head is responsible to oversee, together with the supervisor, the examination process. This includes following up on any outstanding examiner reports and referring examination disputes to the CPT.
- 5.6 The environmental head or their delegate is responsible for uploading the final mark before the deadline set by the University.

## 6. SUPERVISOR

Besides having to be familiar with the information above, the supervisor must acquaint themselves with the following provisions:

- 6.1 The supervisor must consider their availability when accepting candidates for postgraduate studies. Should some subsequent event radically affect their availability, with a concomitant effect upon postgraduate programmes, the supervisor must discuss new arrangements with the environmental head and inform every candidate thus affected accordingly in writing before making new arrangements. Such instances must be reported to the CPT.
- 6.2 Should the nature of the research topic or methodology require expertise in more than one area, consideration must be given to involving one or more co-supervisors who have the appropriate qualifications and experience.
- 6.3 Should equipment and laboratory, digital or technological facilities be required, the supervisor must ensure they be available and accessible.
- 6.4 The supervisor bears responsibility for the originality, scientific merit and standard of the research that is to be conducted.
- 6.5 The supervisor must initiate the appointment of independent examiners in consultation with the environmental head and the PPC, and must restrict their interaction with examiners to the originality, scientific merit and standard of the research.
  - Examiners are *independent* if they were not involved in planning, conducting or realising the research or the assignment in any way.
  - An *internal independent* examiner is a person who is in SU's employ or on the joint payroll, but who is independent as regards the above-mentioned facets.
  - *External* examiners may not be in SU's employ or on the joint payroll. Also, they must comply with the definition of being *unattached* to the University. Extraordinary professors, other extraordinary appointments and honorary professors at SU do not qualify as external examiners. External examiners must be rotated regularly – at least every three years.
- 6.6 The supervisor must also acquaint themselves with all provisions regarding the protocol, the research, the submission of the assignment and the examination thereof.
- 6.7 The supervisor must report annually in writing to the relevant PPC on the progress of the study.
- 6.8 The supervisor must return all work submitted by a candidate, with comments, within a reasonable time.
- 6.9 In case of a disagreement between the supervisor and the candidate, they must try to resolve it between themselves. Should they fail to do so, they may bring it to the attention of the environmental head and the PPC concerned. Should the matter remain unresolved, the parties may approach the Vice-Dean: Learning and Teaching at the FMHS.

## 7. CODE OF CONDUCT FOR THE RELATIONSHIP BETWEEN SUPERVISOR, CO-SUPERVISOR AND CANDIDATE

The nature of the relationship between supervisor and candidate should be conducive to successful postgraduate studies and is structured by a memorandum of understanding (MoU)

for which the University provides a template. Each party – supervisor, co-supervisor and candidate – must complete and sign the MoU to commence their relationship.

The candidate and supervisor must collaborate in compiling an MoU for their specific situation within a reasonable time of starting the project (usually at most 60 days). The memorandum must indicate deadlines – for example, for the submission of a project protocol, the completion of a literary review, the completion of specific chapters and the submission of progress reports. Times of absence (e.g. annual or study leave) must also be noted.

The current standard MoU template is available at <http://www.sun.ac.za/english/faculty/healthsciences/studentadministration/Documents/Memorandum%20of%20collaboration%20between%20students%20undertaking%20research%20and%20the%20supervisors%20who%20guide%20their%20studies..pdf>.

## 8. EXAMINERS

8.1 The environmental head must nominate, in consultation with supervisor and the PPC, two independent examiners (see 6.5 above), one of whom must be an external examiner. Exceptions to the rule require strong motivation. Examiners must be suitable persons who are capable of objective judgement.

8.2 The environmental head must submit, in consultation with the PPC, the nominees' names via the CPT to the Faculty Board for approval. (See 5.4 above.)

8.3 The environmental head or their delegate (who may not be the supervisor) must submit the assignment, along with a copy of the guidelines for assessment and a copy of the standard (pro forma) report form, to the examiners. The examiners must return the completed report form to the environmental head together with a more detailed report.

8.4 Examiners must be allowed at least one month for assessing an assignment.

8.5 Each examiner must submit an independent **written assessment** of the assignment as well as the **standard report** form to the **environmental head**.

8.5.1 The independent **written assessment** must be drafted with reference to the following criteria, taking into account also the relative weight apportioned to each category.

	CATEGORY	RELATIVE WEIGHT (%)
(a)	Introduction – including abstract, background or literature review, context, aim, objectives	20
(b)	Methodology – research design, including experimental methods for laboratory- based analyses, sampling, data collection, data management, data analysis, ethical considerations	30
(c)	Results – presentation, clarity, logical description, understanding of output of statistical analysis (for quantitative studies) and themes supported by appropriate examples (for qualitative studies)	15
(d)	Discussion – logical and meaningful interpretation of findings and arguments in light of current knowledge and literature, description of implications of findings, generalisability of findings, strengths and weaknesses of study	20
(e)	Conclusion – summary of key findings, recommendations for further research, 'take home' message from study	5



(f)	Other – presentation of references, legibility, spelling, grammar and syntax, overall presentation, relevance, originality	10
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8.5.2 The **standard report** must contain the final recommendations. Guidance for mark allocation is provided and examiners are requested to indicate the most appropriate block as well as a mark for the individual assignment.

	CHARACTERISTICS OF WORK	MARK RANGE	INDIVIDUAL MARK (%)
(a)	Pass with distinction. Relevant material as well as background literature and/or related issues are covered authoritatively. Presentation is outstanding as regards argument, organisation, originality and style. Demonstrates full understanding of subject matter. <i>Only minor typographical corrections required.</i>	≥75%	
(b)	There is evidence of originality and insight, but there are omissions or areas where revision would clearly improve the work. The substantive area of work is competently covered, well organised and well argued. Corrections to be made to the satisfaction of the supervisor.	70%–74%	
(c)	Execution is solid, organisation is adequate, methodology is competent and conclusions are adequately drawn. Shows minimal originality and insight, if any, but the overall performance from conception to conclusion is adequate. Should not require major revisions. Corrections to be made to the satisfaction of the supervisor.	60%–69%	
(d)	The literature review is satisfactory, and clarification of the research aims and objectives is adequate. The methodology is adequate, but leaves much room for improvement. The organisation and description of the study shows limitations, but the work presents the main features sufficiently for a pass mark. Requires major revisions. Corrections to be made to the satisfaction of the supervisor.	50%–59%	
(e)	The assignment is weak in all respects, but the candidate has done enough to suggest that it would pass after major revision and re-examination by the same examiner. No mark has been awarded for the time being. Should the candidate pass upon resubmission, a mark of 50% will be awarded.	45%–49%	
(f)	Fail. The assignment is so poor that the examiner does not believe the candidate has the ability to make the changes required to pass. No possibility of resubmission.	<45%	

8.6 The marks assigned respectively by the internal and the external examiner both contribute 50% to the final mark for the assignment. The final mark is calculated in accordance with the applicable provisions elsewhere in this document.

8.7 The mark that the examiners allocate after the first round of assessment will be regarded as the final mark. Should both examiners initially fail the student, a final mark of no more than 50% may be awarded after re-examination.

8.8 Should one examiner award a pass mark and another examiner a fail with no possibility of resubmission (<45%), the CPT must appoint two of its members to serve as an ad hoc committee

together with the environmental head (or another senior staff member if the head is the supervisor).

- This committee must appoint a third examiner, who has to assess the assignment de novo. The third examiner is to be appointed upon consultation with the environmental head and the supervisor.
- The committee then reviews alle three reports before reporting to the CPT.
- If the third examiner awards a pass mark, the candidate's final mark is calculated as the average of the original pass mark and a maximum of 50% for the third examiner, while the failing examiner's mark is disregarded.
- If, however, the third examiner fails the assignment, the ad hoc committee will recommend that the candidate fail the assignment and redo it in its entirety.
- The committee communicate its decision to the environmental head, who must execute the decision before reporting to the CPT.

8.9 Should both examiners pass the assignment, but allocate marks that differ by more than 20%, the environmental head must point this out.

- If the candidate or supervisor(s) want to initiate a dispute, they must be informed that doing so might delay the finalised results and thus completion of the degree; that the candidate cannot withdraw the dispute once the process has been initiated; and that the outcome may benefit the student (a higher mark being award) or penalise them (a lower mark being awarded).
- If no dispute is initiated, the marks awarded by the two examiners are regarded as the final marks and no further dispute may be declared.
- Should a dispute be initiated, the environmental head must inform the examiners, explaining that it was precipitated by the large difference in the marks allocated. The head will request the examiners to have a mediated collegial discussion (in person or electronically, arranged by the environmental head) to review the reasons for the large difference and try to resolve it. This may result in one or both examiners offering to adjust the mark they have awarded (either upwards or downwards) to reduce the difference to less than 20%. The adjusted mark will be regarded as the final mark from that examiner and no further dispute may be declared. Should the discussion not present a solution (i.e. if neither examiner is prepared to change their mark), the average of the original marks will be taken as the final mark.

8.10 The environmental head must submit written reports by the additional examiner(s), together with their responding comments (and a revised manuscript if necessary), via the executive head of the department to the Deputy Registrar: Tygerberg Campus or their delegate to be handled further.

## 9. MANUSCRIPTS FOR SCIENTIFIC JOURNALS

9.1 The candidate must be the first author.

9.2 If the assignment is presented as per option 2 (see 2.3 above) – a completed manuscript for a peer-reviewed scientific journal (preferably subsidy-bearing i.e., that is included in the Department of Higher Education and Training's list of approved scientific journals) – has been **submitted to the journal but not yet accepted for publication**, external examination is required. The same provisions concerning examiners for option 1 also apply here.

9.3 If the manuscript **has already been accepted for publication** by a scientific journal as described

at 9.2, the candidate is deemed to have passed the assignment. The examiners assess it only to award a mark. The manuscript, with proof of acceptance by a subsidy-bearing peer-reviewed scientific journal, must be presented to the environmental head for final approval and disposal.

- 9.4 Since the preparation and submission of a manuscript or assignment forms part of the final examination process, no publication (e.g. a master's research) that have been submitted for obtaining another degree (e.g. MSc) may be presented again in partial fulfilment of the requirements for a structured master's programme.

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