

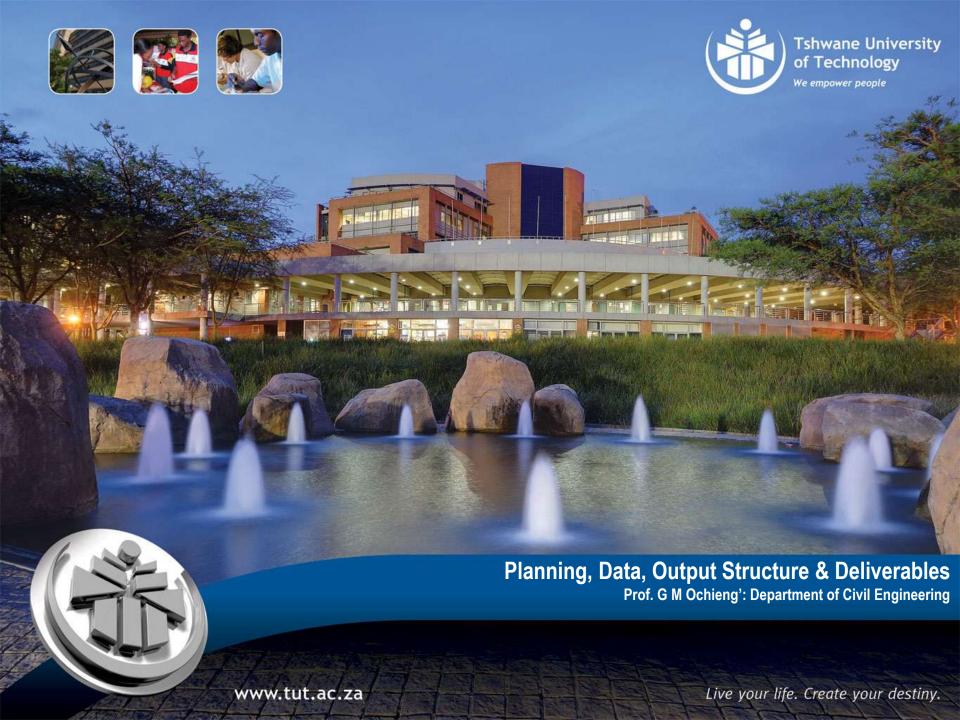


Post Doctoral Research Fellowship

Research Group Workshop 15 to 16 August 2012 DUT, Steve Biko Campus

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Civil Engineering Department







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RESEARCH PLAN (1):

Goal (Why?):

You should have a goal; which is why you are doing the study?

Plan (How?):

Advantage: Planning is capacitated by preliminary research and it gives insight on potential problems and outcome of each task.

Methods: Define the methods to be used; you will able to identify matters of concern only if you know how you are going to do the study.







RESEARCH PLAN (2):

Challenges (Risk Mitigation): Note all potential challenges and plan for them, consider your strengths and weaknesses in this regard.

Timelines: Subdivide your study and attach dates to deliverables; do them on time. Be realistic about the target dates. Plan backwards from the expected date of completion.

Determination: Key feature required towards a successful research.

Consistence: It Keeps the study flowing.

Consideration: Consider people and circumstances around your circle, family, mentors, etc.





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RESEARCH PLAN:

What to consider when planning:

Topic determination

Preliminary research

Hypothesis

Detailed research

Structure outline

Literature review

Study methods

Proposal (writing, submission and defending)

Writing schedule and chapter drafts

Bibliography

Editing

Publication

Always discuss with your supervisors and let them know about your planning and schedules.







DATA REQUIREMENTS AND ANALYSIS (1):

Considerations:

- Research problem and the methods to be used.
- Project delineations and limitations.
- Availability of resources.
- Time frames.
- Data sources.







DATA REQUIREMENTS AND ANALYSIS (2):

Data Collection:

- Acknowledge data.
- Consider relevance.
- Significance to your study.
- Reliability.
- Time/ currency





STRUCTURE OF THESIS (M & D)



Institution dependent

(TUT – Guidelines for the preparation of dissertations and thesis):

Dissertation:

Written scientific report on research, which is the requirement for obtaining a master's degree

Mini dissertation:

Written scientific report (or paper) associated with a structured master's degree (research report supplemented by course work)

Thesis:

Written scientific report on creative and original research, which is the requirement for a doctorate







WRITING A DISSERTATION OR THESIS:

DISSERTATION / THESIS AS A SCIENTIFIC COMMUNICATION:

- Factors for consideration:
 - Document must inform the reader about the problem. Implications must be explained in such a way that everyone reading the document has the same orientation towards the problem
 - Motivate necessity of the study. Explain the goal clearly.
 - Provide basic scientific background to understand the problem
 - Methodology used and other aids must be clearly described
 - Present data in such a way that all researchers' interpretations and inferences are supported
- NB: Nature of the research will determine the format.





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WRITING A DISSERTATION OR THESIS:...

Typical Format/Layout:

- Introductory section
- Presentation and discussion of the data
- Conclusion or final part of the report
- Example:
 - Introduction (Chapter 1)
 - Literature review/survey (Chapter 2)
 - Theoretical consideration (Chapter 3)
 - Methods and materials (Chapter 4)
 - Results and discussion (Chapter 5)
 - Conclusion and recommendations (Chapter 6)
 - References/bibliography



Sections of a Scientific Paper



- Abstract
- Introduction
- Methods
- Results
- Discussion
- Conclusion
- References





Sections of a Scientific Paper



- Results
- Methods
- Introduction
- Discussion
- Abstract
- References





POTENTIAL OUTPUT:



- Thesis/dissertation
- Scientific Journals/papers
- Conference proceedings
- Patents
- Books/book chapters
- Workshops?
- Collaborations (local/international)











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