DURBAN UNIVERSITY OF TECHNOLOGY
INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

Faculty of Accounting and Informatics

Department of Information Technology

Bachelor of Information and Communications Technology Honours (BICTH1)

Study Guide

2024

Applied Research
APRE402

This module was last revised on Aug 2024 by R Millham

Module Coordinator	: Prof Richard Millham
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Consultation times with Lecturer: email to book a consultation time

Head of Department	: Dr Tlou Masenya
Programme coordinator	: Prof Richard C Millham
Campus location	: Ritson
Contact	richardm1@dut.ac.za
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Consultation	: Compulsory weekly consultation with the supervisor
Consultation Mode	: Office Physical Meetings

1. Welcome

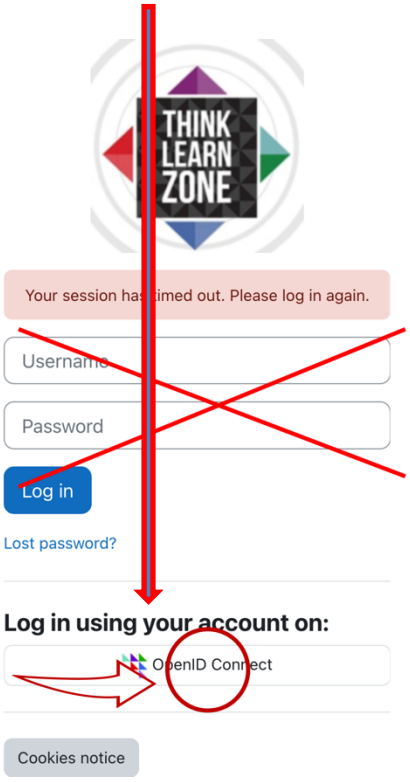
This study guide provides important information regarding the requirements, administration and expectations for this module.

1. Using your online ThinkLearnZone (*Moodle*) classroom

All taught subjects/modules have their own online classroom on the ThinkLearnZone. You can access your classroom at https://tlzprod.dut.ac.za

Click on (Log in) on the top right corner

On the next screen click on "OpenID Connect"



Use your dut4life email address to sign (yourstudentnumber@dut4life.ac.za) and your email password as your password (Dut + first six digits of your ID no., e.g. Dut980610. For first-time 2020 students - use $$Dut + first six digits of your ID no., e.g. $$Dut980610)

Ask your lecturer for guidance or check out “how to log in” from here:
https://www.dut.ac.za/faq-students/

The e-learning website also has contact information for help and technical assistance
https://www.dut.ac.za/elearning-contacts/

You can call the e-learning helpdesk on 031 373 67810 or email them on tlzsupport@dut.ac.za

2. Introduction to the module

Applied Research aims to advance interpretive skills, methodical application of techniques and adherence to principles and philosophies within the discipline of IT research. This module is designed to facilitate the student as they develop skills for the conduct of high-quality research undertakings.

Module content is continuously updated to align with contemporary knowledge and developments in IT research.

As the module progresses, students will be required to demonstrate skills in formulation of research questions, aim and objectives, the conduct of critical review of literature, and application of IT-related data collection and analysis techniques.

3. Learning outcomes

Upon completion of this module, the student will be equipped with knowledge of research concepts and practised its application to contribute knowledge towards an IT discourse. This module facilitates its learners in exploring recent and emerging methodologies, practices and paradigms in IT research. See Appendix A for learning outcomes and assessment criteria.

4. Learning, teaching and assessment strategies

a) Learning activities

Learning activities may include contact lectures and self-learning. The assessment requires the professional presentation of a developed research artefact. Submission of assessments and tutorials via online tools. Seminars, presentations and workshops from the staff at DUT Library on research tools and databases.

b) Graduate attributes

This course strives to develop the following graduate attributes:

- Active and reflective learners through engagement with recent and relevant developments in IT research
- Critical and creative thinkers who work independently and collaboratively in various forms of research undertakings
- Effective communicators of research undertakings and findings
- Practised research and scientific writing skills

c) Assessment

The following sections highlight the assessment strategies.

Final mark

This module is a 100% course mark. The student must obtain a minimum of 50% to pass this module.

The module final mark will be calculated as follows:

Course mark	%
Abstract	5
Introduction	15
Literature Review	25
Methodology	20
Results and Analysis	25
Discussion and Conclusion	5
References and Presentations	5
Total	100

d) Activities to promote learning

Although attendance of lectures, when scheduled, and that of workshops is vital for developing a core understanding of Research Skills concepts and assessment requirements, the focus of this class is the development of a research artefact, with the mentorship of your supervisor.

Students are required to access the online learning platform. Important information and course material will be disseminated through this medium.

Students may engage in online discussions relating to course content, assignments, test preparation and tutorials where applicable. It is quite common for students to form social media chat groups. This is a powerful medium for peer-to- peer collaboration and assistance.

e) **Use of library**

Textbooks, online journals and other relevant publications are available via the library. Tools such as Endnote and Turnitin are also available.

5. Schedule of work

Deliverables	Section	Date
	Introduction	**23 August 2024**
	Literature Review	**13 September 2024**
	Methodology	**27 September 2024**
	Presentation of Results and Discussion	**18 October 2024**
	Summary, Conclusions and Implications of Study	**01 November 2024**
Review	Plagiarism Check, Language Editing	**02 November 2024**
Final Submission	**3 November 2024 at 10am via Moodle wall**	
Lecture Series		
July	Research Software Support (Endnote etc.) Ethics	
August	Systematic Literature Review Literature Review	
Student Engagement		
October	Progress Report	

Submissions, other than the final submission, must be sent via email to your respective supervisor

6. Copyright and plagiarism

Plagiarism is the use of any sources of information including but limited to books, journal articles, extracts from the thesis, online documentation, website material or any other material written by someone else and presented as the student's own. Plagiarism includes the 'copying and pasting of information from any source which is then presented as the student's own. Plagiarism also includes copying other students' assignments, group assignments, projects and any assessments and presenting this as the student's own.

A single instance of plagiarised work will result in a zero mark without the option of resubmission

In escalated circumstances, plagiarism may lead to an institutional disciplinary hearing and a fine imposed on the student.

A plagiarism declaration will be made. This declaration must be completed and signed by each student and attached to every assignment handed in for assessment. Assignments will not be marked if this completed plagiarism declaration is not attached.

Furthermore,

- At least 20 references to be used
- No bibliography or in-text references in artefact: 0% awarded (as per Faculty plagiarism policy)
- Plagiarism in artefact above 15%: 0% awarded

7. Student support

Students are advised to set appointments for lecturer consultations. Difficulties experienced with any aspect of the syllabus or the module, in general, may be addressed during consultation times.

Students that are performing poorly will be called in for special meetings with the lecturer to derive means of improving their performance in the module and discussing any experienced difficulties.

8. Work Integrated Learning (WIL), industry, community, and occupation-related information.

There is no WIL component for this module.

9. Quality assurance and enhancement

Students will be allowed to provide feedback on the quality of the module and their learning experience through the APRE 401 supervisors and module evaluations when requested by the CPQA. Students are invited to extend comments, criticisms, or constructive contributions about module delivery and content to the lecturer. In addition, there will be student representative meetings once per term.

10. Useful resources

There are no prescribed texts for this module. The following list of references is useful:

1. Leedy, P.D. and Ormrod, J.E., 2021. Practical research: Planning and design, global edition. England: Pearson Education Limited.
2. Creswell, J. W. 2018. Research design: qualitative, quantitative, and mixed methods approaches Fifth edition. Sage.
3. Dane, F.C. 2018. Evaluating research: methodology for people who need to read research Second edition. Sage.
4. Myers, G. Research methodology: the beginner's manual. 2017. Acacia Private Publishing.
5. Kumar, R. 2019. Research methodology: a step-by-step guide for beginners Fifth edition. Sage.
6. Locharoenrat, K. 2017. Research methodologies for beginners. Pan Stanford Publishing.

Other relevant publications will be pointed out by the lecturer. The student is responsible for locating and downloading a copy. These may form part of the examinable material.

11. Research Paper (Final Artefact) Instruction

- Use standard Time New Roman, font size 10.
- Use 1.5cm Spacing
- Include page numbers.
- Please note that you will be evaluated on your writing skills
- All work must be typed and be in MS-Word format for easier marking and commentary

Appendix A
Learning outcomes

1. Analyse contemporary literature and establish a focused topic for investigation

2. Synthesize and report recent and relevant information in a cogent and coherent manner

3. Apply quantitative or qualitative research methods

4. Apply data collection and analysis techniques

5. Apply research ethics

Supervisors Contact Details

	Supervisors	Email Address
1	Richard Millham	richardm1@dut.ac.za
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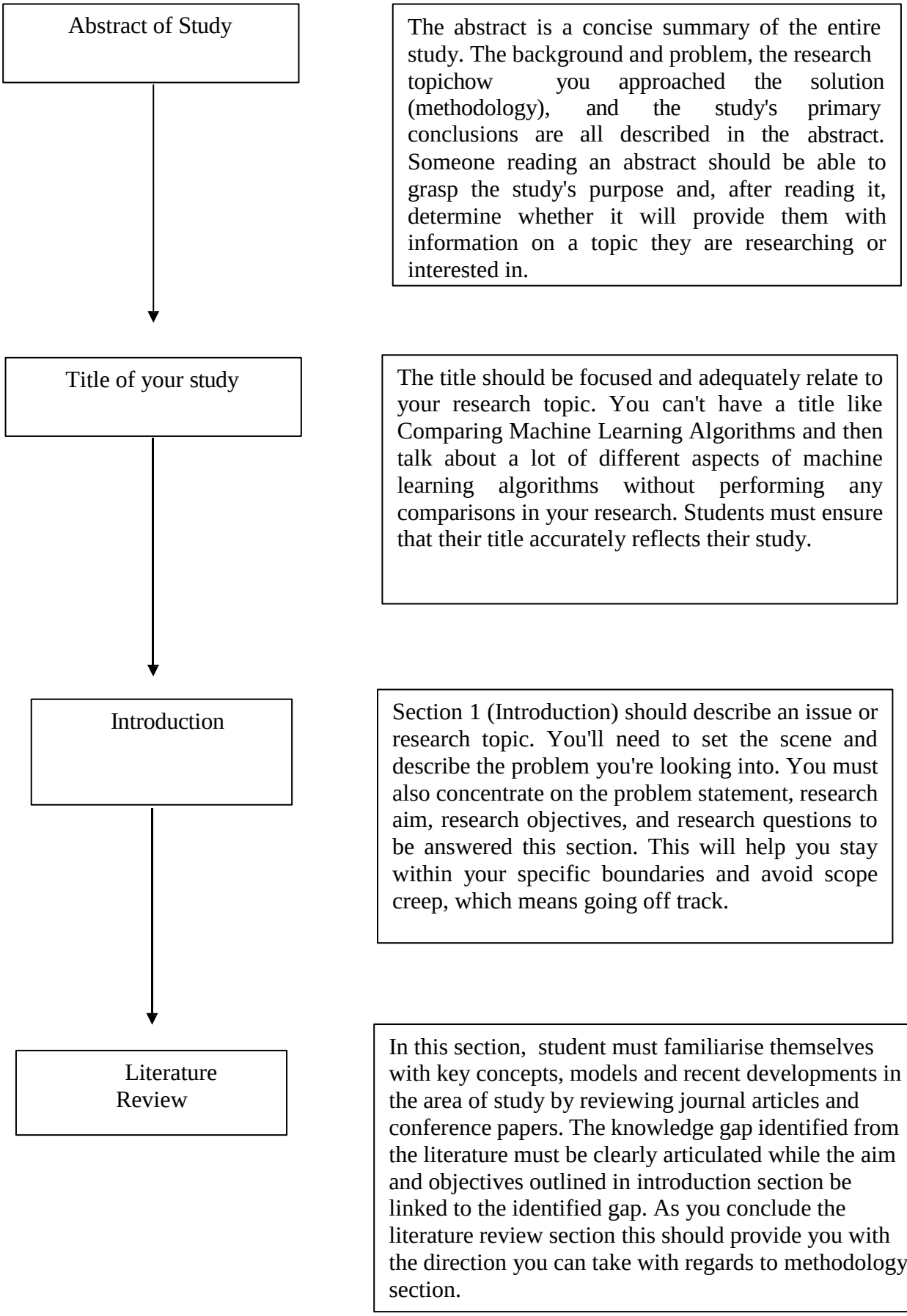
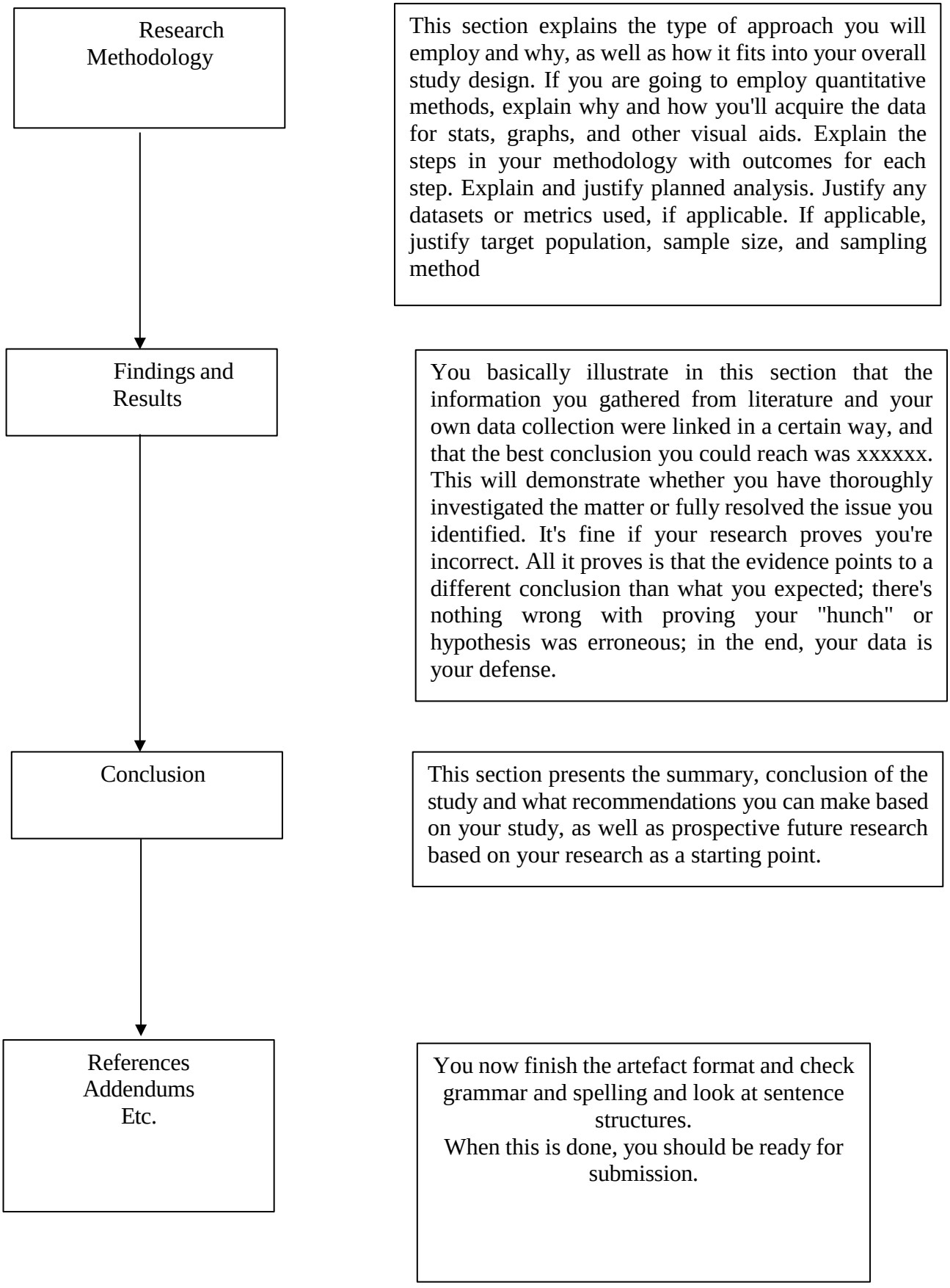
Appendix B


Abstract of Study
The abstract is a concise summary of the entire study. The background and problem, the research topichow you approached the solution (methodology), and the study's primary conclusions are all described in the abstract. Someone reading an abstract should be able to grasp the study's purpose and, after reading it, determine whether it will provide them with information on a topic they are researching or interested in.
Title of your study
The title should be focused and adequately relate to your research topic. You can't have a title like Comparing Machine Learning Algorithms and then talk about a lot of different aspects of machine learning algorithms without performing any comparisons in your research. Students must ensure that their title accurately reflects their study.
Introduction
Section 1 (Introduction) should describe an issue or research topic. You'll need to set the scene and describe the problem you're looking into. You must also concentrate on the problem statement, research aim, research objectives, and research questions to be answered this section. This will help you stay within your specific boundaries and avoid scope creep, which means going off track.
Literature Review
In this section, student must familiarise themselves with key concepts, models and recent developments in the area of study by reviewing journal articles and conference papers. The knowledge gap identified from the literature must be clearly articulated while the aim and objectives outlined in introduction section be linked to the identified gap. As you conclude the literature review section this should provide you with the direction you can take with regards to methodology section.


Research Methodology
This section explains the type of approach you will employ and why, as well as how it fits into your overall study design. If you are going to employ quantitative methods, explain why and how you'll acquire the data for stats, graphs, and other visual aids. Explain the steps in your methodology with outcomes for each step. Explain and justify planned analysis. Justify any datasets or metrics used, if applicable. If applicable, justify target population, sample size, and sampling method
Findings and Results
You basically illustrate in this section that the information you gathered from literature and your own data collection were linked in a certain way, and that the best conclusion you could reach was xxxxxx. This will demonstrate whether you have thoroughly investigated the matter or fully resolved the issue you identified. It's fine if your research proves you're incorrect. All it proves is that the evidence points to a different conclusion than what you expected; there's nothing wrong with proving your "hunch" or hypothesis was erroneous; in the end, your data is your defense.
Conclusion
This section presents the summary, conclusion of the study and what recommendations you can make based on your study, as well as prospective future research based on your research as a starting point.
References
Addendums
Etc.
You now finish the artefact format and check grammar and spelling and look at sentence structures.
When this is done, you should be ready for submission.

Appendix C – Research Paper Layout

DURBAN UNIVERSITY OF TECHNOLOGY

Topic

By

Student Name

Student Number

A research paper submitted in fulfilment of the requirement for the Bachelors of Information and Communications Technology Honours

Faculty of Accounting and Informatics

Department of Information Technology

Supervisor:

2024

DECLARATION

I, *Name of Student*, declare that:

(i) The research reported in this research paper, except where otherwise indicated, is my original research.

(ii) This research paper has not been submitted for any degree or examination at any other university.

(iii) This research paper does not contain other persons' data, pictures, graphs or other information unless specifically acknowledged as being sourced from other persons.

(iv) This research paper does not contain other persons' writing unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:

- Their words have been re-written but the general information attributed to them has been referenced.
- Where their exact words have been used, their writing has been placed inside quotation marks and referenced.

(v) This research paper does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source is detailed in the research paper and the Reference Section of this research paper.

_____

Signature: *Name of Student*

Date

Section Sizes

- **Abstract: ½ page**
- **Introduction: 2 pages**
- **Literature Review: 7.5 pages**
- **Methodology: 4 pages**
- **Results: 5 pages**
- **Conclusion: 2 pages**
- **/20 pages excluding references, title page, and plagiarism declaration**

Outline of Paper (Explicit/Implicit Parts)

First headings should be explicit but inner headings may be implicit

- **Abstract:**
- **Introduction**
- **Problem**
- **Objective(s)**
- **Methodology**
- **Analysis**
- **Result**
- **Introduction:**
- **Background**
- **Problem Statement**
- **Aim & Objectives**
- **Contribution**
- **Outline of Paper**
- **Literature Review:**
- **Structure (Flow and Argument)**
- **Good coverage of relevant literature**
- **Critical Analysis**

- **Methodology:**
- **Research Design**
- **Research Steps with Outcome**
- **Data Collection (Dataset/Questionnaire)**
- **Results:**
- **Presentation**
- **Results and Interpretation**
- **Evaluation of Method**
- **Discussion and Conclusion:**
- **Summary**
- **Achievement of Objectives**
- **Limitations/Implications**
- **Future Work**