Format for writing B.Sc. Research Project Report

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What is an academic Project Report?

- An academic project report is a formal document that details the process and outcomes of a research project undertaken as part of an academic course or program.

- Research project is an important condition to be satisfied before any student can graduate from a programme of study in a tertiary educational institution.

Purpose of an Academic Project Report

- **Demonstrates Understanding:** Of the project topic, research methods, and analytical skills.
- **Communicates Findings:** A clear and concise account of the project's work and findings for the intended audience
- **Contributes to Knowledge:** Should contribute to the existing body of knowledge in the field, depending on the its scope and significance.
- **Serves as a Record:** Permanent record of the project, which can be valuable for future reference or further research.
- **Meets Academic Requirements:** It fulfills the requirements for a specific course or degree program.

What exactly is the format for writing B.Sc. Project Report

- The format for writing a B.Sc. project report refers to the structured layout and organizational style used to present a research project as a formal, academic document.
- It ensures consistency and clarity.
- A typical format includes specific sections arranged in a logical order.
- This is meant to guide students and their supervisors on the acceptable standards expected of them in conducting and reporting a research project.
- The project report shall conform to the prescribed format as detailed below.

Standard format for B.Sc. Project

1. Preliminary Pages

- Cover page
- The fly leaf
- Title page
- Certification page
- Dedication
- Acknowledgments
- Abstract
- Table of Contents
- List of Tables
- List of Figures (if any)
- List of Plates

2. Main body

- Introduction
- Literature Review
- Materials and Methods/ Methodology
- Results
- Discussion
- Summary of findings, conclusion and Recommendations
- References
- Appendices

Main body

- **Chapter One: Introduction** – Background, Problem Statement, Aim and Objectives, Significance, Scope, Operational definition of terms.
- **Chapter Two: Literature Review** – Theoretical, Conceptual, and Empirical Review (in relevant and related sections). This should be in sub-headings according to the variables or concepts of the study
- **Chapter Three: Materials and Methods/ Methodology** – Describes the specific methods and approaches used to conduct the project, including data collection and analysis techniques.
- **Chapter Four: Results** – Presentation of the data collected and key finding of the project often using tables, figures, plates etc. Details of numerical results shall be given in this chapter.
- **Chapter Five:** Discussion, Summary of Findings, Conclusion and recommendations – Key Findings and Suggestions.

- **References:** List of all cited references in APA 7th Edition.

- **Appendices:** Contains supplementary materials such as raw data, questionnaires, or approvals.

CONTENTS OF VARIOUS PARTS OF THE PROJECT REPORT

➢ PRELIMINARY PAGES

- Cover page

✓Title of the Project (Project title should contain maximum of 20 words)

✓Student's Name

✓Matriculation Number

✓Department, Faculty, and University

✓Month and Year of Submission

CONTENTS OF VARIOUS PARTS OF THE PROJECT REPORT

- Flyleaf

✓Blank

✓ same quality as the paper used in the inside cover

TITLE PAGE

PHYSICOCHEMICAL AND MICROBIAL PROPERTIES OF WUPA WASTEWATER AND THE POTENTIAL OF BIOREMEDIATION OF SOME HEAVY METALS*Y*

BY

OGBOA JOSEPH OCHI

NOU143798474

A RESEARCH SUBMITTED TO THE DEPARTMENT OF BIOLOGICAL SCIENCES, FACULTY OF SCIENCES, NATIONAL OPEN UNIVERSITY OF NIGERIA, IN PARTIAL FUFILMEN FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY

NOVEMBER, 2021

CERTIFICATION

Before moderation, Supervisor(s) certify that the research work and preparation of Project reports were carried out under his/her/their supervision. The format shall be:

This is to certify that this research tilted "PHYSICOCHEMICAL AND MICROBIAL PROPERTIES OF WUPA WASTEWATER AND THE POTENTIAL OF BIOREMEDIATION OF SOME HEAVY METALS" was carried out by OGBOGA JOSEPH OCHI (NOU143798474) under my supervision in the Department of Biological Sciences, National Open University of Nigeria.

_____ _____

Project Supervisor **Signature/Date**

DEDICATION

The author may dedicate his/her work to any person(s) or corporate bodies if he/ she deems it fit.

Example:

This project work is dedicated to my lovely wife, Mrs. Chidozie Joseph

ACKNOWLEDGMENTS

- The author shall acknowledge in his/her own words the assistance given by others during his/her research work and the preparation of the project report.

ABSTRACT

- An abstract of not more than 250 words, and shall contain a brief:

✓ statement of general objectives of the research work.

✓ statement of research methodology used (principal only) including methods of data analysis.

✓ straight-to-the –point summary of key findings, conclusion(s) and recommendation(s)

- It should be typed in single line spacing, and must not contain paragraphs and not in italics.

TABLE OF CONTENTS

- This shall contain a list of all major parts of the project report listed earlier and the respective page on which they begin, starting with the title page.

- For the main body of the project report, section and sub section headings shall also be listed to give a better view of the report.

TABLE OF CONTENTS

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Table 4.3:	Biochemical Characteristics of Bacteria Isolates of Wastewater from Wupa Wastewater treatment plant, Abuja	22

LIST OF FIGURES

FIGURE	TITLE	PAGE
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Figure 4.2:	Bioremoval efficiency of *Aspergilus niger* and *Bacillus subtillis* for Fe in Wupa wastewater plant, Abuja	26
Figure 4.3:	Bioremoval efficiency of *Aspergilus niger* and *Bacillus subtillis* for Mn in Wupa wastewater plant, Abuja	28

MAIN BODY

CHAPTER ONE

Introduction

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1.2 Statement of the Problem …… 2
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MAIN BODY

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3.3 Statistical analysis..... 24

CHAPTER FOUR
RESULTS

Table 4. 12: Bioremediation Potentials of Indigeneous Bacteria Isolates from Wupa WWTP

Bacteria Isolates	Growth observed after 7 days	Mean ± SD absorbance
Stenotrophomonas sp.	+++	0.848 ± 0.19
Bacillus fusiformis	+++	0.704 ± 0.16
Stenotrophomonas maltophilia	+++	0.883 ± 0.31
Lysinibacillus sp.	+	0.285± 0.33
Bacillus fusiformis	+++	0.704 ± 0.16
Stenotrophomonas maltophilia	+++	0.883 ± 0.31

Key: +++ Maxinium Growth; ++Moderate Growth; + Minimum Growth; - No Growth

FIGURES

- Graphs, chart, maps, histograms and other line diagrams shall be drawn professionally in Indian ink on a white Board or tracing paper.
- Computer graphics may also be used. Charts and maps shall be well labeled. Keys and scales should be included in the figures where appropriate.
- Figures shall be numbered consecutively in Arabic numerals in the order in which they are cited in the text.
- Each figure shall have a self-explanatory title, which shall be typed immediately below the figure. Only the first letters of the major words shall be capitalized

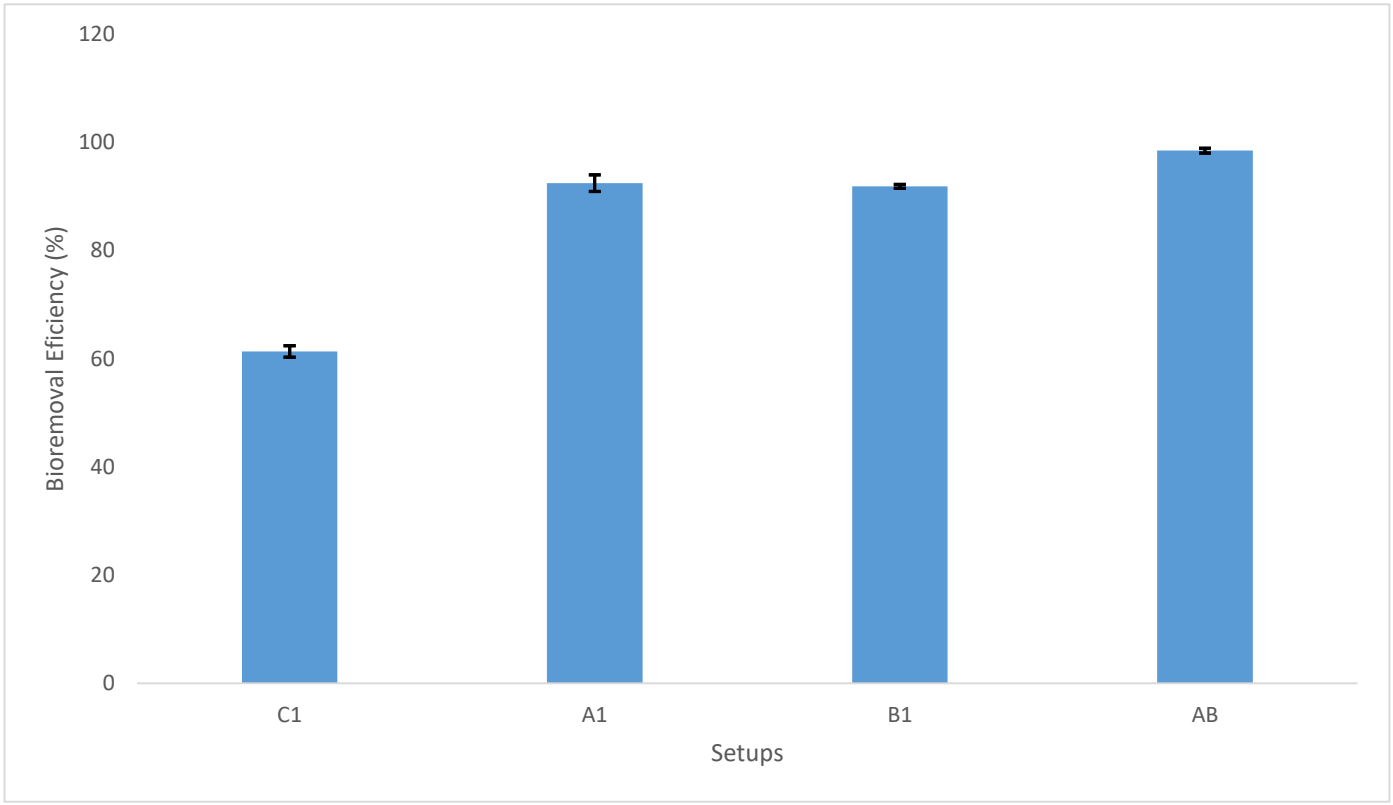


Figure 4 6: Bioremoval efficiency of *Aspergillus niger* and *Bacillus subtillis* for Fe in Wupa wastewater

Key: C: Container for control; A: Treatment for *Aspergillus niger*; B: Treatment for *Bacillus subtillis*; AB: Treatment for *Bacillus subtillis* and *Aspergillus niger*

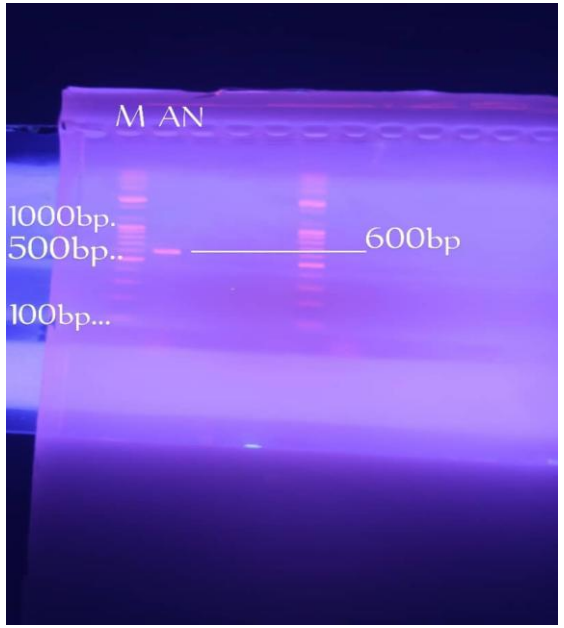


Plate I: Agarose Gel electrophoresis of targeted ITS 1 and ITS 4 region for *Aspergillus niger* isolate using 100 bp Bioline Hyper Ladder

Discussion, Summary of findings, Conclusion and Recommendations

- **Discussion**

✓Interpretation of the findings of the research.

✓ Discusses their significance.

✓Relates them to the existing literature.

➢Reference to a table, figure or plate in the text shall be made by means of the table, figure, or plate number.

- **Summary of Findings**

✓The candidate is required to briefly itemize his/her findings in not more than one page.

- **Conclusion and recommendations**

✓The conclusion shall highlight the major findings of the research work and the inferences made. It shall incorporate a subsection on recommendation(s) on areas of further study.

In-text citations

- **APA 7th Edition format shall be used for citations from different sources**

✓**Narrative Citation:** Where the author's name is embedded into the running sentence with date in parentheses or round brackets immediately after the author's name.

Examples: 1. Sadigov (2022) reported that 2000 and 2020 estimates show that the population now exceeds 2.4 million.

2. Chukwu and Oranu (2018) reported some physicochemical parameters of inlet and outlet of Wupa WWTP to determine the biological performance of wastewater.

3. Chukwu, Ayodele, and Edoka (2023) carried out an Ethnobotanical survey …

✓**Parenthetical Citation**: Where credit is given in parentheses to a source being quoted where the author's name and year of publication is not part of the sentence.

Examples: 1. **(**Sadigov, 2022)

2. (Chukwu & Oranu, 2018)

3. (Chukwu, Ayodele & Edoka, 2023)

In-text citations

- **More than three Authors (Use first Author's surname followed by "et al."):**

✓**Narrative citation:** Barros Júnior *et al*., (2003), observed that the Cadmium biosorption with *Aspergillus niger* could be used successfully in the oil industry to remove heavy metals from oil field water .

✓**Parenthetical citation:** (Júnior et al., 2003).

- The shortened form (*et al*) is now allowed right from the first citation
- **Corporate authors:**

✓Official publications of international organizations, government agencies, institutions, professional societies, and other corporate bodies shall be cited in its official language followed by the year of publication, e.g. "Dried feeds does not support algae growth (Livestock Feeds, 2007)."

✓United Nations agencies, such as World Health Organization (WHO), and regional inter-governmental organizations, like Economic Community of West African's State (ECOWAS) may be cited by official abbreviations of their English names.

- **Plagiarism** is the act of using another person's ideas, writings, or work without proper acknowledgment.
- Students must be conscious of plagiarism.

Listing of References

- Reference shall be collated at the end the project report and listed in APA 7th edition format alphabetically according to authors' name following the guidelines on indentation, punctuation.

- Basic elements in APA reference list include:

✓Author

✓Date of Publication

✓Title of work

✓Source

- Everything cited in the text *must* appear in the reference list (except personal communication), and everything in your reference list *must* be something you have referred to in the text.

Journal Articles

Format: Author, A. A. (Year). Title of the article. *Title of the Journal,* Volume (Issue), pages. https://doi.org/xxxx

- **With Digital Object Identifier (DOI or URL):**
- Abdel-Wareth, M. T. A., Ali, E., & El-Shazly, M. (2023). Biological Activity and GC-MS/MS Analysis of Extracts of Endophytic Fungi Isolated from *Eichhornia crassipes* (Mart.) Solms. *Journal of Applied Biotechnology Reports*, *10*(1), 895-909. doi: 10.30491/ jabr.2022. 359352.1559

Without DOI

- Abdullahi, U., Khandaker, M., Badaluddin, N A., Alias, N. & Abdelmoaty, S. (2021). Implications of Brassicaceae cultivation in heavy metals contaminated environment: A phytoremediation point of view. *Bioscience Research*. 18. 906-913.

Books

- **Printed book**:
- Raven, P. H., Johnson, G. B., Mason, K. A., Losos, J. B., & Singer, S. R. (2020). *Biology* (12th ed.). McGraw-Hill Education.

- **E-Book with DOI or URL:**
  Raven, P. H., Johnson, G. B., Mason, K. A., Losos, J. B., & Singer, S. R. (2020). *Biology* (12th ed.). McGraw-Hill Education. https://doi.org/xxxxx (if available)

Websites

- **Website Reference (With Author & Date)**
- **Format:**
  Author, A. A. (Year). *Title of webpage*. Website Name. URL
- **Example:**
  World Health Organization. (2023, March 18). *Climate change and health*.
- https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health

- **Website Without an Author:**
  If no author is available, use the organization name or the title:
- **Example:**
  Harvard University. (2023). *What is biodiversity?*
  https://harvard.edu/resources/biodiversity-explained
- **Website Without a Date:**
- **Example:**
  Centers for Disease Control and Prevention. (n.d.). *Handwashing: Clean hands save lives*. https://www.cdc.gov/handwashing/

Government Organizational Reports

1. World Health Organization (WHO). (2022). *Global tuberculosis report 2022*. https://www.who.int/publications/i/item/newsp9789240061729

2. Food and Agriculture Organization of the United Nations. (2022). *The state of food and agriculture 2022: Leveraging automation in agriculture*. https://www.fao.org/documents

Note: Current references (within the past 5 years) to make up at least 50% of the references.

Appendices

APPENDIX A

APPROVAL FORMAT

The research titled ……. by (student's name, matric no.) has been assessed and approved by the project supervisory committee of Department of Biological Sciences, Faculty of Sciences as having satisfied the requirement for the award of Bachelor of Science degree in Biology in National Open University of Nigeria.

_____ _____

Project Supervisor ***Signature/Date***

_____ _____

Head of Department ***Signature/Date***

_____ _____

External Examiner ***Signature/Date***

_____ _____

Dean, Faculty of Sciences ***Signature/Date***

Important Note

- Project title should contain a maximum of 20 words
- - All chapter titles in block letters and center placed
- - All sub-headings in initial capital except words like in, on, of, the, a, an etc.
- - All chapters and Sub-headings in bold text
- - Use A4 size of paper
- - Set equal margins of 1inch
- - Use Times New Romans font style with 12 font size
- - Justify the typing lines
- - Each chapter must start from a new page
- - Use indented paragraph in typing the body of the report
- - Use double line spacing

Binding and Submission

- The project report should not be less than 40 pages.
- The student's work is graded by the supervisor, who shall forward the assessment report in the approved format to the Study Centre Director or the Desk Officer.
- Study Centre Director or the Desk Officer uploads the student's work on the Project Administration System (PAS) for moderation by an approved External Examiner
- Projects shall be permanently bound only after moderation and all the necessary corrections pointed out by the External Examiner made.
- Submission of final, hard-bound copies of Project – four (4) copies, along with writeable CDs that stored them (1 each for student, supervisor, Study Centre, and Departmental Library)

Concluding Remarks

- In conclusion, a well-structured B.Sc. project report not only reflects the quality of your research but also your ability to communicate it effectively.

- By following the standard format, you ensure clarity, consistency, and academic integrity.

- Remember, your report is a lasting representation of your work; take time to organize, proofread, and format it properly.

Thank you for your attention