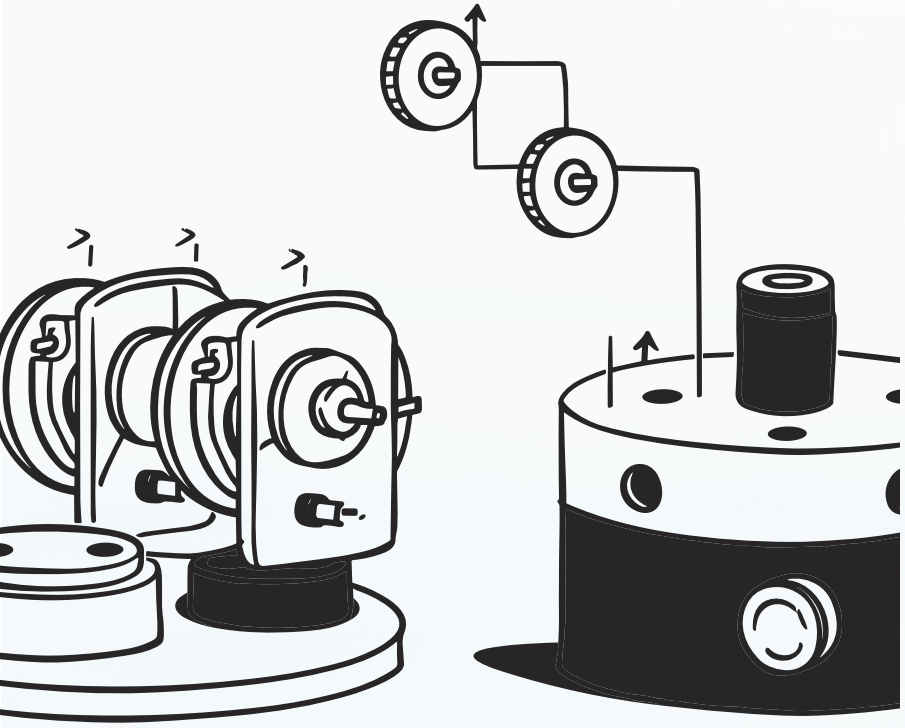


Chapter 3: Research Methodology

Writing Guide for Final Year Project (FYP) — Diploma in Civil Engineering

This chapter explains in detail how the study is planned and carried out to achieve the project objectives. Systematic and clear writing enables the study to be replicated by other researchers.

Purpose of Chapter 3: Research Methodology



Describe the Research Approach

Clearly explains how the study is designed and carried out from start to finish.



Achieve the Research Objectives

Links each chosen method to the established research objectives.



Replicable

A sufficiently detailed write-up allows other researchers to repeat the study accurately.



Justify the Methods

Each chosen method must be supported by academic justification and appropriate source references.

Overall Structure of Chapter 3

Chapter 3 is organized sequentially according to the flow of the study, beginning with a general overview and ending with a summary of the methodology used.

01

3.1 Introduction

Overview of the methodology and chapter structure.

02

3.2 Research Design

Type of study and justification for selection.

03

3.3 Methodology Flowchart

Visual overview of the overall research process.

04

3.4 – 3.7 Methods & Procedures

Materials, equipment, procedures, data collection, and data analysis.

05

3.8 – 3.9 Schedule & Summary

Project planning and overall chapter summary.

3.1 INTRODUCTION

Chapter 3 Introduction

What Should Be Written?

The introduction provides the reader with an initial overview of the content of Chapter 3. It should be written in 1–2 concise and clear paragraphs.

Key Elements of the Introduction

- A summary of the research design used
- The data collection methods that will be explained
- The data analysis methods used
- The arrangement of the subtopics in this chapter as a guide for readers
- The relationship between the methodology and the research objectives

3.1 INTRODUCTION

Example Introduction Writing

> *"This chapter explains the methodology used in this study to achieve the stated objectives. The research design, data collection procedures, and data analysis methods are described in detail to ensure that the study can be replicated by other researchers in the future."*

The introduction should be written in only 1–2 paragraphs. Avoid overly long explanations — save the detailed discussion for the relevant subtopics.



CHAPTER 3 — SECTION 3.2

Research Design

Section 3.2 explains the type of study selected, the justification for its selection, and the direct relationship between the study design and the project objectives to be achieved.

3.2 RESEARCH DESIGN

Types of Research Design

Choose the most suitable research design based on the objectives and scope of your project. Each type of study has its own advantages.

Experimental Study

Tests hypotheses through laboratory experiments with controlled variables.

Product Development

Designs, builds, and tests a prototype or new system.

Survey Study

Collects data from respondents through questionnaires or interviews.

Case Study

In-depth analysis of a specific situation, project, or problem.

3.2 STUDY DESIGN

Quantitative, Qualitative & Mixed Approaches

Quantitative

Involves numerical data that is measured and analyzed statistically. Suitable for laboratory tests, physical measurements, and data comparisons.

Qualitative

Involves observation, interviews, and subjective evaluation. Suitable for case studies and conceptual analysis.

Mixed Methods

Combines both quantitative and qualitative approaches. Provides a more comprehensive and holistic picture.

3.2 STUDY DESIGN

Content Required in Section 3.2

Mandatory Items to State

- Type of study selected (example: quantitative experimental study)
- Justification — why this design was chosen over others
- Direct relationship between the study design and each research objective

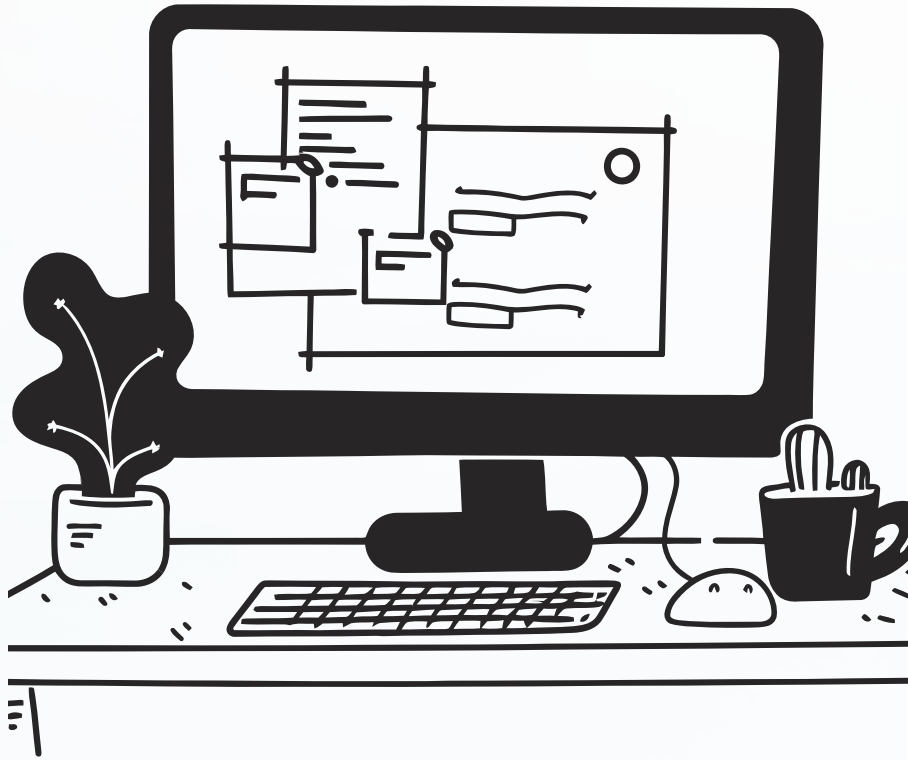
Example Justification

> *"A quantitative experimental study was chosen because it allows the investigator to measure the compressive strength of concrete accurately and compare the results with the standards set by MS EN 12390."*

CHAPTER 3 — SECTION 3.3

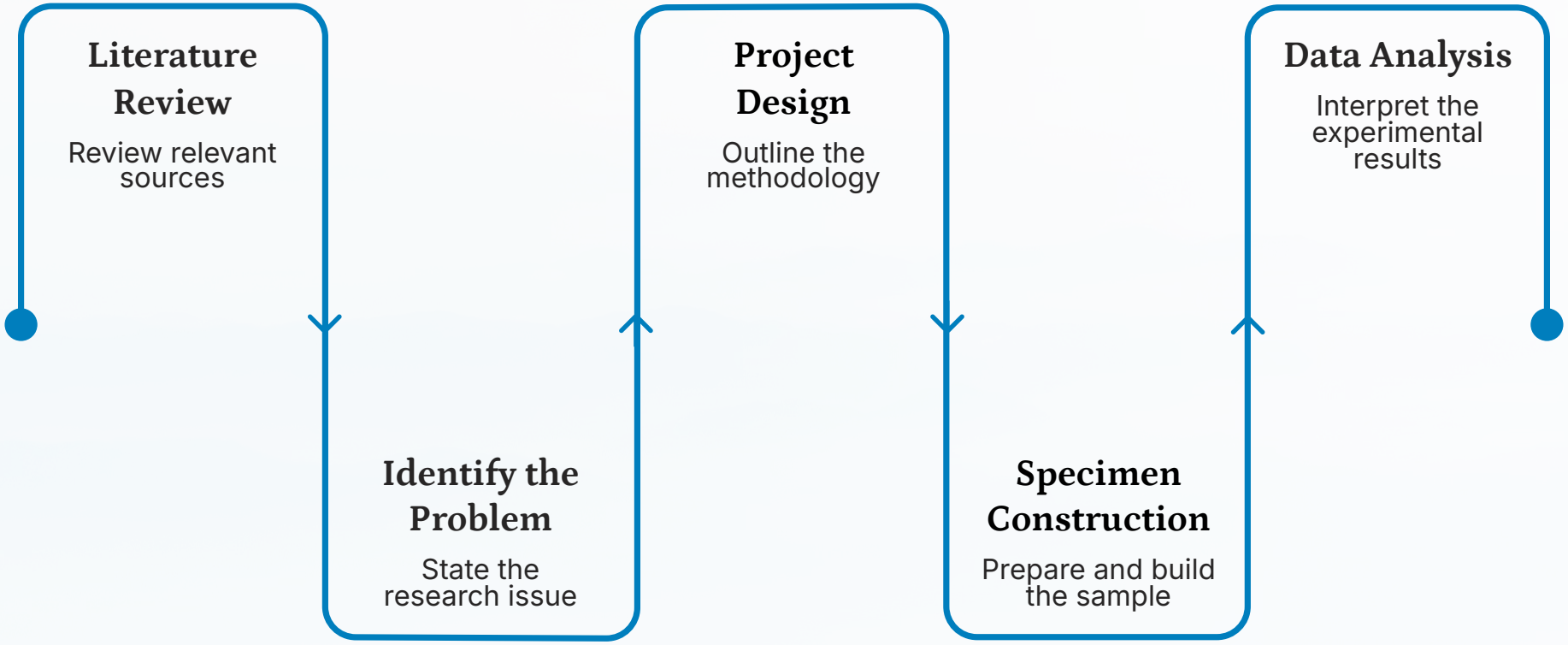
Research Methodology Flowchart

The flowchart provides a clear visual overview of the overall research process. It helps readers understand the sequence of research activities from start to finish.



3.3 RESEARCH METHODOLOGY FLOWCHART

Steps in the Flowchart



This flowchart shows the logical sequence of the FYP research process. Each step depends on the previous one, ensuring the study proceeds systematically and in an orderly manner.

3.3 METHODOLOGY FLOWCHART

Guide to Preparing a Flowchart

Recommended Software

Use software such as **Microsoft Visio**, **Draw.io**, or **Microsoft PowerPoint** to produce a neat and professional flowchart.

Standard Symbols

Use standard flowchart symbols: rectangles (process), diamonds (decision), and arrows (flow direction) to ensure consistency.

Feedback Loop

Include a feedback loop if there are steps that need to be repeated, for example when the test results do not meet the specified standard.

The flowchart in the report should be labeled with the figure number and an appropriate caption, for example: **Figure 3.1: Research Methodology Flowchart**.

CHAPTER 3 — SECTION 3.4

Materials, Equipment and Software

This section lists all the resources used in the study. A complete listing ensures that the study can be accurately replicated by other researchers.



3.4 MATERIALS

Examples of Materials Used

List all raw materials used in the study. State the relevant technical specifications such as grade, type, or standards.

Concrete Project

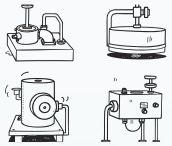
- Ordinary Portland Cement (OPC) Grade 42.5N
- River sand (clean, free of silt)
- Aggregate size 10 mm & 20 mm
- Water (meets BS 3148 standards)
- Recycled plastic (as a partial replacement)

Solar System Project

- 50W monocrystalline solar panel
- Arduino Uno R3 microcontroller
- 5V relay module
- Water level sensor
- 12V DC submersible water pump
- Water storage tank (50L capacity)
- 12V 7Ah sealed lead-acid battery

3.4 EQUIPMENT

Laboratory & Testing Equipment



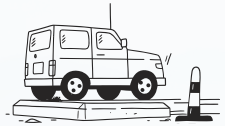
Universal Testing Machine (UTM)

Used to test tensile and flexural strength. Typical capacity: 100 kN to 2000 kN.



Concrete Mixer

Used to mix concrete evenly to ensure consistent mix quality.



Slump Cone

Tool used to test the workability of fresh concrete according to BS EN 12350-2.



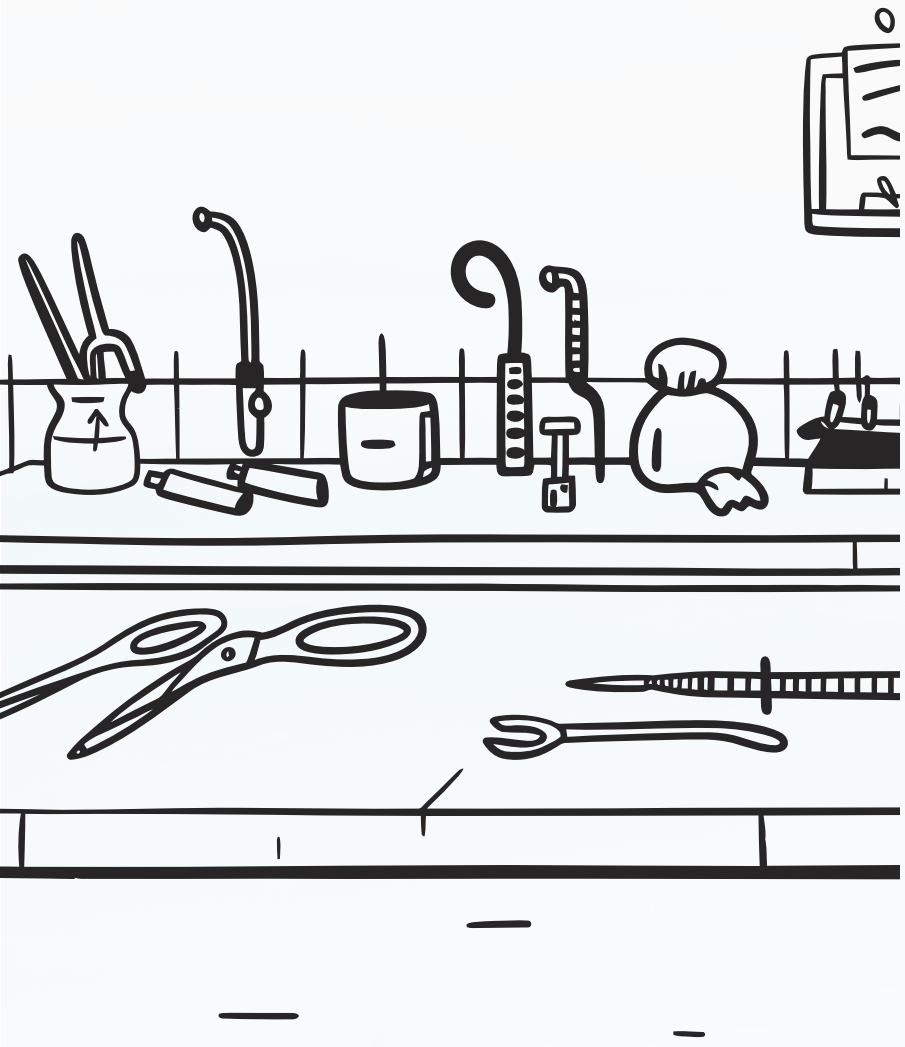
Compression Testing Machine

Used to test the compressive strength of concrete specimens at 7, 14, and 28 days.

3.4 SOFTWARE

Commonly Used Software in FYP

Software	Main Function	Category
Microsoft Excel	Data analysis, graphs, statistical calculations	Data Analysis
AutoCAD	2D and 3D technical drawing	Design
Autodesk Revit	BIM (Building Information Modelling) modeling	Design
SPSS	Advanced statistical analysis	Data Analysis
Microsoft Project	Schedule management and project planning	Project Management
Arduino IDE	Microcontroller programming	System Development



CHAPTER 3 — SECTION 3.5

Research Procedure

Section 3.5 explains the study implementation steps in detail and in sequence. Clear and precise explanations are important to enable the study to be replicated.

3.5 RESEARCH PROCEDURE

Main Elements of the Research Procedure

Material Preparation

Describe how the materials are prepared, including weighing, drying, or any pre-treatment required before the study begins.

Specimen or Model Preparation

Explain the size, quantity, and fabrication method of the specimens or models used in the study.

Construction or Development Process

Clarify each step of the construction or development process of the product/system in chronological order.

Testing Method

State the testing method used and refer to the relevant standards (BS, ASTM, MS).

Data Collection

Explain how the data is recorded, whether using forms, software, or specialized equipment.

3.5 EXAMPLE: CONCRETE PROJECT

Research Procedure — Concrete Project

Example research procedure for the project titled *"The Effect of Recycled Plastic as Partial Replacement in Concrete Blocks"*.

01

Form Preparation

150mm × 150mm × 150mm cube molds are prepared and coated with lubricant oil before use.

02

Concrete Mix Preparation

The mix is produced according to a 1:2:4 ratio (cement:sand:coarse aggregate) with a water-cement ratio of 0.5.

03

Mixing & Casting

The materials are mixed for 3 minutes in a concrete mixer, then poured into the mold in stages.

04

Curing

The specimens are immersed in clean water for 7, 14, and 28 days according to BS EN 12390 standards.

05

Compressive Strength Test

The specimens are tested using a compression testing machine. The load is applied at a rate of 0.6 MPa/s.

3.5 EXAMPLE: SOLAR PROJECT

Research Procedure — Smart Solar Rainwater Harvesting System

1

System Design

Schematic circuit drawings and system diagrams are prepared using Fritzing and AutoCAD software.

2

Component Installation

The solar panel, Arduino Uno, relay module, and sensors are connected according to the reviewed circuit diagram.

3

Arduino Programming

The program code is written using Arduino IDE to control pump operation based on water level readings.

4

System Function Testing

The system is tested under different conditions (sunny, cloudy) to ensure the automatic function works properly.

5

Data Collection

Water level data, pump operating time, and energy usage are recorded every hour for 7 consecutive days.



CHAPTER 3 — SECTION 3.6

Data Collection Methods

Section 3.6 explains how data was obtained in this study. The selected method must align with the research design and the objectives to be achieved.

3.6 DATA COLLECTION METHODS

Types of Data Collection Methods

🔬 Laboratory Experiment

Collecting data through physical tests in the laboratory. The main method for concrete experiments, building materials, and mechanical systems projects.

📋 Questionnaire

Collecting opinions or feedback from respondents. Suitable for user satisfaction survey studies or social studies.

🔍 Observation

Observing and recording data directly at the construction site or while tests are being carried out.

📐 Site Measurement

Taking physical measurements at the project location such as height, width, deflection, or water flow velocity.

💻 Computer Simulation

Generating data through computer modeling using software such as ANSYS, SAP2000, or STAAD.Pro.

3.6 PRIMARY & SECONDARY DATA

Types of Data: Primary and Secondary

Primary Data

Data collected directly by the researcher through:

- Laboratory tests (compressive strength, slump test)
- Measurements of water level and energy consumption
- Questionnaires distributed to respondents
- Observation and photo documentation

Secondary Data

Data obtained from existing sources such as:

- Published journals and academic articles
- British Standard (BS), ASTM, or MS standards
- Technical reports and previous research data
- Technical manuals from material or equipment manufacturers

3.6 INSTRUMENTS & DATA RECORDS

Instruments and How to Record Data

Clearly state the tools or instruments used to collect data, as well as the recording method, to ensure the reliability of the study.

Measuring Instruments

Vernier caliper, micrometer, deflection gauge (dial gauge), and digital voltage tensile tester.

Data Record Form

Use a standard form to record test data. Ensure the date, time, and researcher's name are recorded on each entry.

Recording Software

Data is copied into Microsoft Excel or Google Sheets for further analysis and digital storage.

CHAPTER 3 — SECTION 3.7

Data Analysis Methods

Section 3.7 explains how the raw data collected is processed, analyzed, and interpreted to answer the research questions and achieve the project objectives.



3.7 DATA ANALYSIS METHOD

Data Analysis Techniques in FYP

Descriptive Statistics

- Mean
- Standard deviation
- Maximum & minimum values
- Percentages and proportions

Data Visualization

- Line graph (trend comparison)
- Bar chart (group comparison)
- Pie chart (composition percentage)
- Summary table of results

Result Comparison

- Compare with standards (BS, ASTM, MS)
- Compare with previous studies
- Trend analysis by replacement percentage
- System efficiency percentage analysis

3.7 EXPERIMENTAL ANALYSIS

Data Analysis for Experimental Projects

For projects involving laboratory testing, data analysis should be carried out systematically by referring to the relevant standards.

1 Calculate the Average Value

For each test series, calculate the average from at least 3 specimens to obtain a representative result.

2 Plot Graphs & Charts

Produce graphs using Microsoft Excel to show the relationship between the percentage of material replacement and the strength obtained.

3 Compare with Standards

Check whether the test results meet the minimum requirements set by BS EN 206 or MS 523 standards.

4 Draw Conclusions from the Results

Discuss whether the research hypothesis is supported or rejected based on the analysis results obtained.

3.7 EXAMPLE ANALYSIS

Example: Compressive Strength Analysis of Concrete

The example below shows the analysis format for a study on partial replacement of concrete with recycled plastic. The data below is illustrative — use the actual data from your tests.

Replacement Rate (%)	7 Days (MPa)	14 Days (MPa)	28 Days (MPa)
0% (Control)	18.5	24.2	30.1
5%	17.8	23.1	28.6
10%	16.4	21.5	26.3
15%	14.9	19.8	23.7

The results above are for illustration only. Fill in the actual laboratory test data when writing your FYP report.

3.7 SYSTEM ANALYSIS

Example: Solar System Efficiency Analysis

For product development projects such as the Smart Solar Rainwater Harvesting System, system efficiency analysis is carried out using formulas and comparisons of operating data.

System Efficiency Percentage

Efficiency is calculated based on the ratio of the total energy used by the pump to the total energy generated by the solar panel over the same period of time.

Water Level Analysis

Changes in the water level in the tank are recorded every hour. The data is plotted as a line graph to show the trend of water filling and usage.

Pump Response Time

The time between the sensor signal being detected and the pump operating is analyzed to assess the automatic control efficiency of the Arduino system.



CHAPTER 3 — SECTION 3.8

Project Planning Schedule

Section 3.8 shows the time planning for project implementation. This helps ensure the project runs according to the set schedule and is completed on time.

3.8 PROJECT PLANNING SCHEDULE

Gantt Chart — FYP Planning Example

The following Gantt chart shows an example of FYP activity planning over 20 weeks. Adjust the schedule according to the scope and requirements of your actual project.

Activity	W1–W4	W5–W8	W9–W12	W13–W16	W17–W20
Literature Review	✓	✓			
Project Design		✓	✓		
Preparation of Materials & Specimens			✓	✓	
Testing & Data Collection				✓	
Data Analysis & Report Writing				✓	✓

3.8 PLANNING SCHEDULE

Guide to Creating a Gantt Chart

Recommended Software

Use **Microsoft Project**, **Microsoft Excel**, or **GanttProject** (free) to create a neat and professional Gantt chart.

Mark Important Milestones

Include important dates such as **submission of the initial draft**, **progress presentation**, and **final report submission deadline** in the Gantt chart.

Check with Your Supervisor

After preparing the Gantt chart, discuss it with your supervisor to obtain approval and ensure the planned timeline is realistic.

CHAPTER 3 — SECTION 3.9

Summary of Chapter 3

What Should Be Included?

The summary of Chapter 3 is the closing section of the overall research methodology. It should be written in 1–2 concise and well-organized paragraphs.

Summary Elements

- A summary of the research methods used
- The relationship between the methodology and the research objectives
- A statement on the validity and reliability of the methods
- Introduction to Chapter 4 (Results & Discussion)

CHAPTER 3.9 — SUMMARY

Sample Writing for Chapter 3 Summary

> *"Overall, Chapter 3 has systematically and in detail explained the research methodology used in this project. An experimental quantitative research design was chosen to ensure that the data collected is accurate and reliable. Data collection methods through laboratory tests and statistical analysis using Microsoft Excel enabled the research objectives to be fully achieved. The findings of this study will be presented and discussed in detail in Chapter 4."*

The summary should reconnect all the main elements of Chapter 3 and provide a smooth transition to Chapter 4.



CHAPTER 3 APPLICATION EXAMPLE

Example 1: Smart Solar Powered Rainwater Harvesting System

The following section shows how the structure of Chapter 3 is applied practically in a product development project involving solar energy technology and an automated water management system.

EXAMPLE 1: RESEARCH DESIGN

3.2 Research Design — Solar System

This study uses a **product development** approach that is quantitative in nature. This design was chosen because the study involves building a physical prototype system whose performance can be measured numerically.

Rationale for Selection

The product development design enables the researcher to design, build, and test the system in stages until it achieves the desired performance.

Relationship to Objectives

Each development phase (design → installation → testing) is directly related to the objective of producing an automated rainwater harvesting system that functions effectively.

Quantitative Approach

Data collected such as water level, energy consumption (Watt), and pump operating time (minutes) are numerical in nature and can be measured and analyzed.

EXAMPLE 1: MATERIALS & EQUIPMENT

3.4 Materials and Equipment — Solar System

Electronic & Electrical Components

Component	Specification
Solar Panel	50W, 12V
Arduino Uno R3	ATmega328 microcontroller
Relay Module	5V, 1 channel
Water Level Sensor	Analog, 3 pin
DC Water Pump	12V, 3W submersible
Battery	12V, 7Ah SLA

Software Used

- **Arduino IDE** — Microcontroller programming
- **Fritzing** — Electronic circuit design
- **Microsoft Excel** — Operating data analysis
- **AutoCAD** — Technical system drawing

EXAMPLE 1: PROCEDURE & DATA

3.5 & 3.6 Procedure and Data Collection — Solar System

1

Design

Draw the circuit schematic and the layout plan of the system components.

2

Installation

Install all components according to the circuit diagram approved by the supervisor.

3

Programming

Arduino code is written for automatic pump control based on sensor signals.

4

Testing & Recording

Test the system and record water level, energy, and operating time every hour.



CHAPTER 3 APPLICATION EXAMPLE

Example 2: Recycled Plastic as Partial Replacement in Concrete Blocks

This section shows the structural application of Chapter 3 for a laboratory experiment project that studies the effect of partially replacing recycled plastic in concrete.

CHAPTER 3 STUDY DESIGN EXAMPLE

3.2 Study Design — Concrete Project

This study uses a **quantitative experimental study design**. The independent variable is the plastic replacement ratio (0%, 5%, 10%, 15%), while the dependent variables are compressive strength, density, and water absorption of the concrete specimens.

Independent Variable

Replacement ratio of recycled plastic in the concrete mix: **0%, 5%, 10%, and 15%** of the total aggregate weight.

Dependent Variables

Compressive strength (MPa) at 7, 14, and 28 days; concrete density (kg/m³); and water absorption percentage (%).

Control Variables

Water-cement ratio (0.5), type of cement (OPC 42.5N), curing method (water immersion), and testing time are kept constant throughout the study.

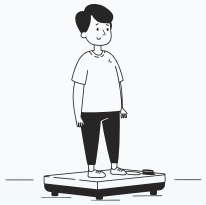
EXAMPLE 2: LABORATORY TESTS

3.7 Laboratory Tests — Concrete Project



Slump Test

Measures the workability of fresh concrete according to **BS EN 12350-2**. The target slump value is 30–60 mm.



Density Test

The specimen mass is measured using a digital scale and the volume is calculated to obtain the density value (kg/m³).

Compressive Strength Test

150 mm cube specimens are tested using a compression testing machine according to **BS EN 12390-3** at 7, 14, and 28 days.



Water Absorption Test

The specimen is oven-dried at 105°C for 24 hours, then immersed in water to measure the percentage of absorption.

EXAMPLE 2: DATA ANALYSIS

3.8 Data Analysis Method — Concrete Project

All laboratory test data are analyzed using Microsoft Excel. The analysis includes calculating the mean, standard deviation, and comparison with the specified standards.

01

Enter Data into Excel

All test results are entered into a pre-designed Excel table.

02

Calculate Descriptive Statistics

Calculate the mean, maximum, minimum, and standard deviation for each test series.

03

Plot Comparison Graphs

Generate line graphs and bar charts to compare compressive strength at different replacement ratios.

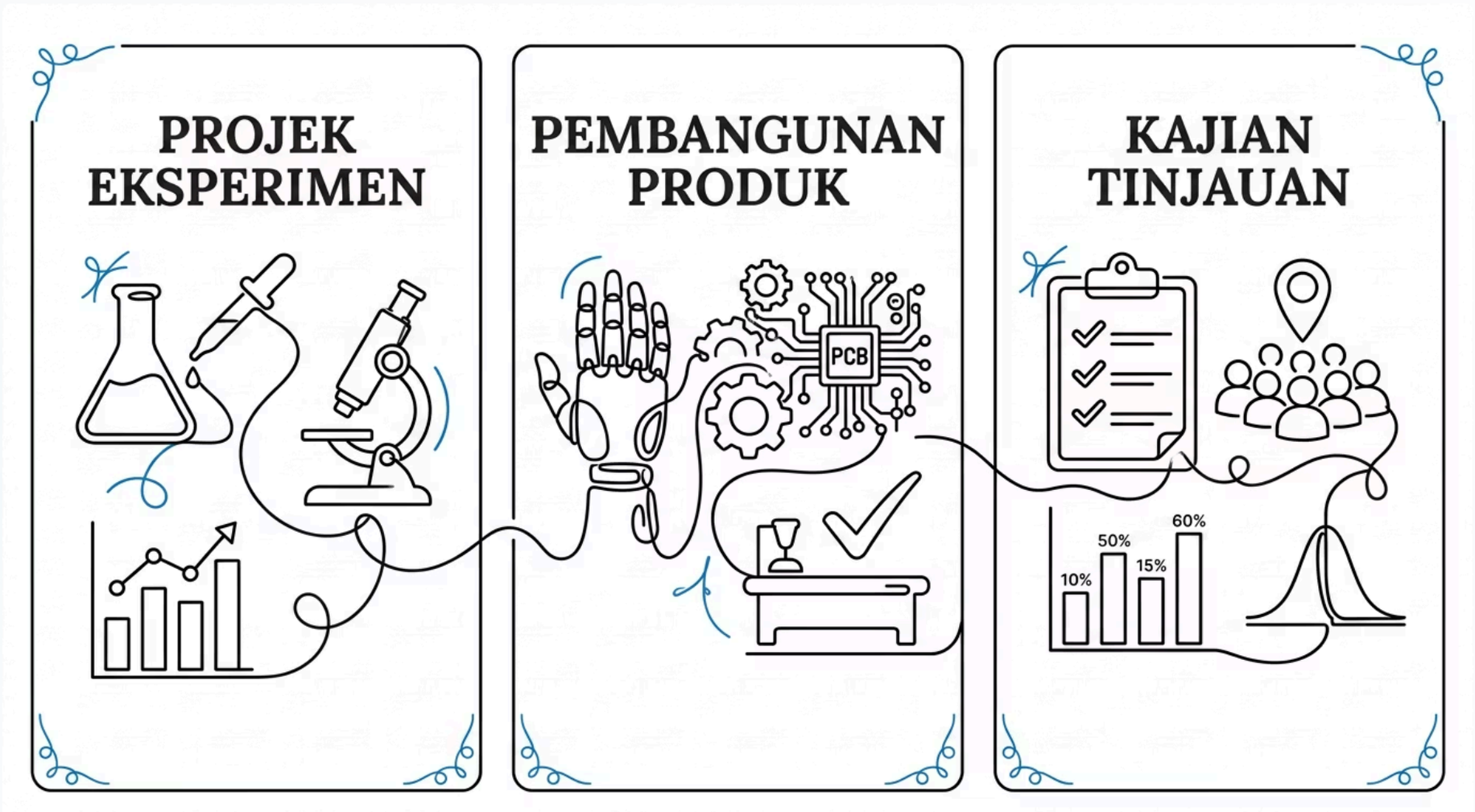
04

Compare with Standards

Check whether the compressive values meet the minimum requirement of 25 MPa at 28 days according to MS 522.

Differences in Emphasis by FYP Type

Chapter 3 structure should be adapted according to the project type. The table below shows the main emphasis differences for three common categories of FYP projects.



Chapter 3 Emphasis by Project Type

Section	Experiment	Product Development	Survey
3.2 Design	Quantitative experiment	Prototype development	Survey study
3.4 Materials	Construction materials & laboratory equipment	Electronic/mechanical components	Questionnaire forms
3.5 Procedure	Specimen preparation & testing	System design & assembly	Distribution & collection of forms
3.7 Analysis	Statistics, standard comparisons	System efficiency & performance	SPSS, Likert scale, statistics

SPECIAL STUDY TYPE

Special Guide: Survey Research

For FYPs that use the survey method, there are several additional elements in Chapter 3 that need special attention compared to experimental projects.



SURVEY RESEARCH

Key Chapter 3 Elements for Survey Research

Questionnaire Design

Explain the questionnaire structure: demographic section, main section, the scale used (5-point Likert or others), and the number of question items.

Sampling Method

State the research population, sampling method (random, purposive, snowball), and the required sample size based on the Krejcie & Morgan table.

Research Instrument

Describe each section of the questionnaire and the source references used to develop the question items.

Validity & Reliability

State the methods used to ensure content validity (through expert review) and reliability (pilot test with Cronbach's Alpha value ≥ 0.7).

COMMON MISTAKES

Common Mistakes in Chapter 3 Writing

❌ No Justification

Stating methods without explaining *why* those methods were chosen. Every methodological choice MUST be supported by academic reasoning.

❌ Incomplete Procedures

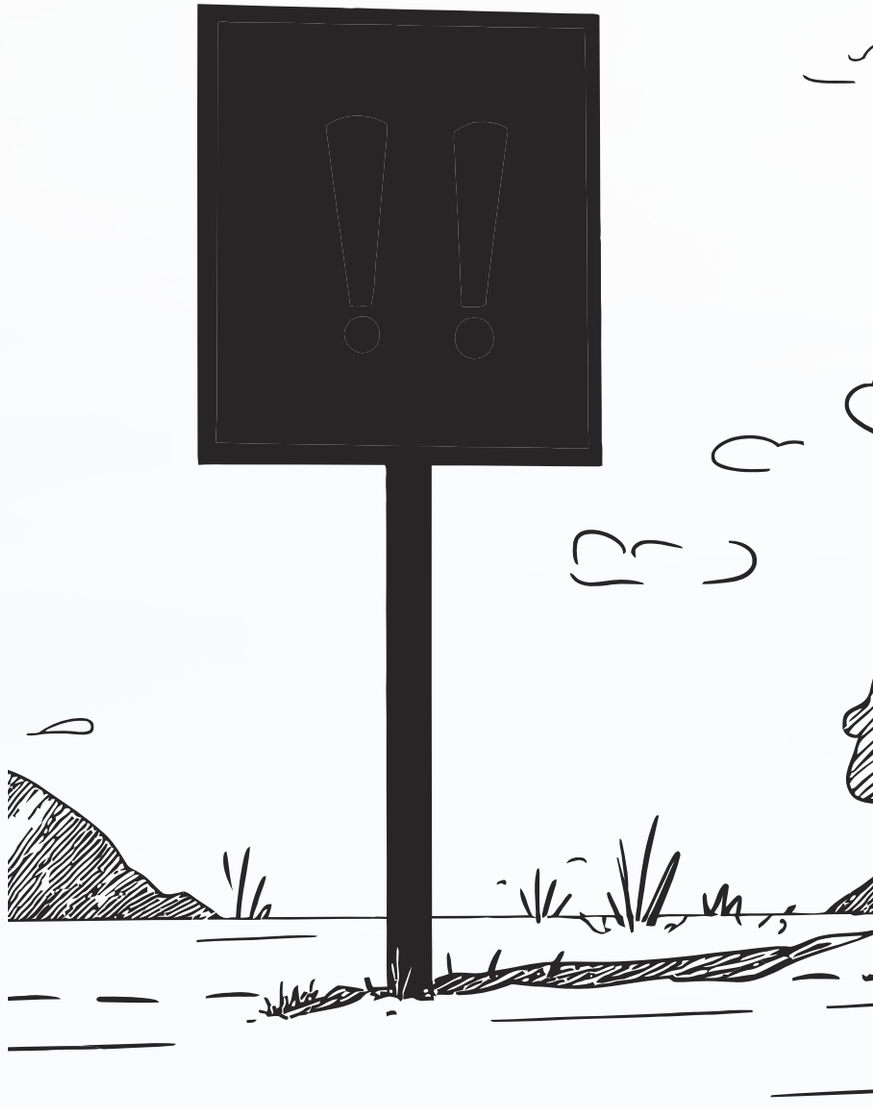
Writing procedures too generally without specific details. Example: "concrete was tested" — better: "150mm cube specimens were tested at 28 days according to BS EN 12390-3".

❌ No Standard References

Failing to refer to testing standards (BS, ASTM, MS). Standards are the foundation that gives credibility to your research procedures.

❌ Incomplete Flowchart

A flowchart that is too brief or does not show a feedback loop when needed, especially for studies that involve revisions.



BEST PRACTICES

Best Practices in Chapter 3 Writing

Use Specific Numbers

State exact quantities: "12 cube specimens" rather than "several specimens." Specific information increases the credibility of the study.

Reference Standards and Literature

Every testing procedure should be referred to the relevant standards (BS, ASTM, MS) or previous studies that support the method.

Photo Documentation

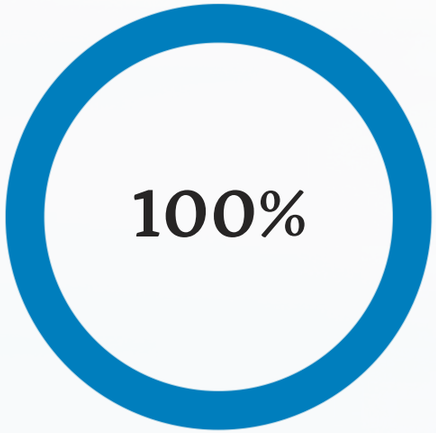
Take photos during the research process. Photos can be included in the report as visual evidence and strengthen the procedure explanation.

Ensure Consistency

Make sure the methods stated in Chapter 3 are consistent with the data presented in Chapter 4 and the discussion in Chapter 5.

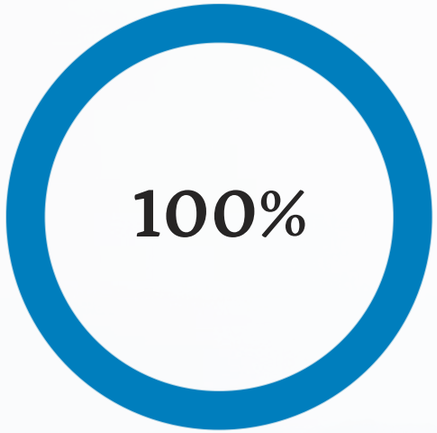
Evaluation Criteria: A Good Chapter 3

Project supervisors usually assess the quality of Chapter 3 based on the following criteria. Make sure your writing meets all of these aspects.



Completeness

All sections (3.1–3.9) are written in full with no parts left out.



Clarity

Procedures are explained clearly and in sufficient detail so they can be repeated by others.



Justification

Each method is supported by strong justification and backed by academic references.

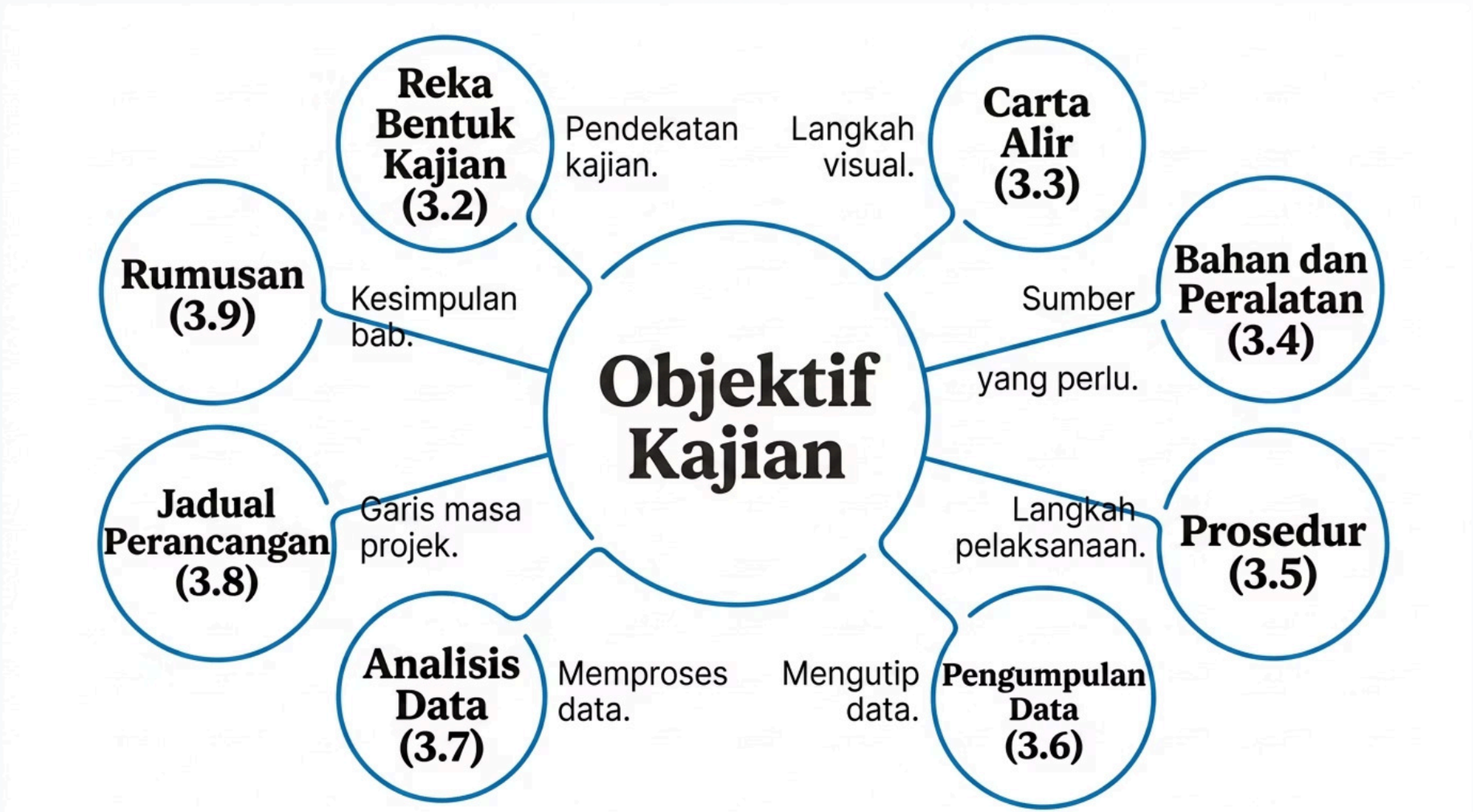


Link to Objectives

The chosen methodology is clearly aligned with and supports the achievement of each research objective.

Relationships Between Sections in Chapter 3

Each section in Chapter 3 is interconnected and forms a cohesive research narrative. Understanding these relationships helps students write in a more organized way.



SELF-CHECK

Checklist Before Submitting Chapter 3

Use this checklist before submitting the Chapter 3 draft to your supervisor to ensure no sections are left out or incomplete.

Structure & Content

- [x] ~~Section 3.1 Introduction is written (1–2 paragraphs)~~
- [ ] Research design type is stated with justification
- [ ] Methodology flowchart is prepared and labeled
- [ ] All materials, equipment, and software are listed
- [ ] Research procedure is explained in sequence

Quality & Format

- [ ] Data collection and analysis methods are explained
- [ ] Gantt chart or planning schedule is included
- [ ] All standards (BS, ASTM, MS) are referenced correctly
- [ ] Technical photos or diagrams are included and labeled
- [ ] Section 3.9 Summary is written with an introduction to Chapter 4



WRITING GUIDE

Language Style and Format for Chapter 3 Writing

Accurate and consistent writing style reflects a student's academic maturity. Follow the guidelines below to ensure your Chapter 3 writing meets academic standards.

WRITING STYLE

Writing Style and Formatting Guide

Use Past Tense Verbs

Procedures that have been carried out are written in the past tense. Example: *"The concrete mixture was stirred for 3 minutes..."* rather than *"The concrete mixture is stirred..."*

Formal & Objective Tone

Avoid using first-person pronouns such as "I" or "we". Use passive sentences such as *"This study was conducted..."* or *"The data were collected..."*

Label All Figures & Tables

Each figure should be labeled below (example: **Figure 3.1: Methodology Flowchart**), while tables should be labeled above (example: **Table 3.1: List of Materials**).

Consistent Referencing System

Use one referencing system consistently throughout the report, whether it is **APA**, **Harvard**, or the system specified by your institution.

Complete Structure Summary of Chapter 3

This table summarizes all sections in Chapter 3, the purpose of each section, and the recommended writing length as a reference for students.

Section	Title	Main Content	Recommended Length
3.1	Introduction	Overview of the methodology and chapter structure	1–2 paragraphs
3.2	Research Design	Type of study, justification, relationship to objectives	1–2 paragraphs
3.3	Methodology Flowchart	Diagram of the overall research process	1 chart + explanation
3.4	Materials, Equipment & Software	Complete list of all research resources	Table + paragraph
3.5	Research Procedure	Detailed steps for carrying out the study	2–4 paragraphs
3.6	Data Collection Methods	Instruments, data types, recording methods	1–2 paragraphs
3.7	Data Analysis Methods	Analysis techniques, software, standard comparisons	1–2 paragraphs
3.8	Planning Schedule	Gantt chart and project activity schedule	1 table + explanation
3.9	Chapter Summary	Summary of the methodology and introduction to Chapter 4	1–2 paragraphs



Conclusion: The Key to Success in Chapter 3

🎯 Focus on the Objectives

Every method you choose must be able to answer the research objectives. Ask yourself: *"Does this method help me achieve the objectives?"*

📚 Support with References

Use standards, journals, and textbooks to support every methodological decision. References show that you understand the scientific basis of the study.

🔍 Clear and Detailed

Write in enough detail so that others can replicate your study. This is the best test of the quality of your Chapter 3.

Remember: A well-written Chapter 3 is the foundation of the overall reliability of your FYP report. Take enough time to ensure each section is complete, clear, and supported by strong justification.