

# Academic English

For your engineering studies (and engineering workplace)



Source: <https://www.eventbrite.co.uk/o/centre-for-academic-english-15341068996>

# You may be asked to write a variety of **technical documents** through your studies and your career

- **Short report**
- **Proposal** - a formal, written plan/suggestion put forward for consideration
- **Case Study** - a situation analysed to illustrate a thesis or principle
- **Lab report** - to describe and analyse a laboratory experiment
- **Progress/interim report** - to present the preliminary or initial evaluation findings
- **Memo/Memorandum** - used internally and informally, usually in reply to a request for information
- **Tender** - a formal bid or offer to complete a project at a specified cost or rate

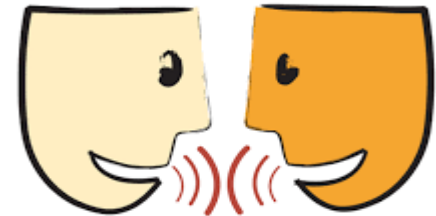
This is a common one - you will have to write at least one of these during your studies

# Short Report

(A written technical document)

**Definition:** A report is for the quick and easy communication of specific information (it covers an investigation, the findings and conclusions). It is designed for specific readers.

Let us talk about the underlined terms



Source: <http://mzayat.com/single/43958.html>

# Report Sections

- Title page
- Summary - sometimes called an Abstract
- Table of Contents
- Introduction
- Discussion with numbered headings and sub-headings and incorporating diagrams, tables etc
- Conclusions and Recommendations
- References
- Appendices



Source: <https://www.periscopix.co.uk/blog/slice-up-your-life-with-custom-affinity-segments/>

# Title page

## It should include:

- The course name and code
- The title of the report (a statement of the topic)
- The author's name and ID number
- The date of submission

Source: <http://www.bviddm.com/bvi-hurricane-irma-situation-report-3/>



# Summary (or Abstract)

A brief overview of the **essence** of the report ( ~1/2 page)  
(Although it is presented first it is best to write it last.)

It must include:

- The topic
- An outline of the most important findings of your investigation
- A statement of the key conclusions/recommendations

Do NOT include:

- General Information
- The reason/s why the investigation is being carried out
- References to diagrams or the source of your information

# A SUMMARY example

From a report entitled: *Preliminary Design of a Bridge*.

A new bridge is to be constructed on the Mitchell Freeway where it crosses the Swan River in Perth, Western Australia. Congestion on the road is making this a necessity. Two designs were devised and then compared, looking at cost, construction and maintenance. Design One is a super-T beam bridge while Design Two is a simple composite girder bridge. It is concluded that Design One is the better choice. It is cheaper and less complicated to build, it is more durable and easier to maintain. The diagram on page 7 illustrates the durability of the bridge.

**Consider the information on summary writing on the previous slide. Does the example above follow the rules?**

Source: <http://www.monash.edu.au/lls/llonline/writing/engineering/technical-report/3.xml>

# Table of Contents (ToC)

The **headings and sub-headings** (for the sections and subsections of the report) use the *decimal point numbering system*.

**For example:**

1.0 Design One

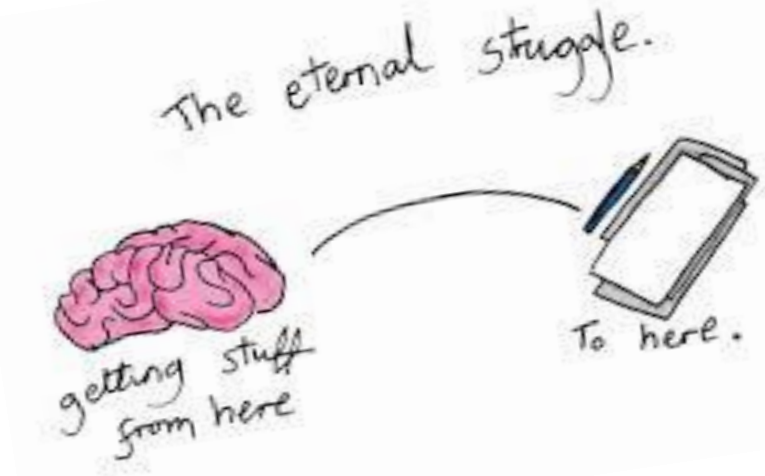
1.1 The design

1.2 Materials

1.2.1 Concrete

1.2.2 Steel

2.0 Design Two



source: <https://favim.com/image/219987/>



# For the page numbering

- Page numbers **before** the ToC: use lower case *Roman numerals* (i, iii, iv .....).

(Do not put a number on your title page, but start the next page with ii.)

- Number **all other** pages using *Arabic numerals* (1, 2,3...)

(All numbering used in the ToC must correspond with the numbering in the report.)



Source: <https://www.learnqtp.com/step-by-step-guide-to-learn-qtp/>

# ToC continued:

- If you have attachments include a section in your ToC for them, after your References. Call it **Appendices**.

(Note: two appendices and one appendix.)

- Do not allocate page numbers for your Appendices.
- Set out each appendix in your ToC as shown below:

## **Appendices:**

Appendix 1 Design One - Sample calculations

Appendix 2 Design Two – Scale Drawings

# A TABLE OF CONTENTS example

	Summary.....	ii
1.0	Introduction.....	1
2.0	Design 1: 33m Steel I-Girder Bridge.....	2
	2.1    Superstructure.....	2
	2.2    Abutments .....	3
	2.3    Construction method .....	3
3.0	Design 2: 25m Super T-Girder Bridge .....	4
	3.1    Superstructure.....	4
	3.2    Abutments .....	5
	3.3    Construction method .....	6
4.0	Comparison of designs.....	7
	4.1    Economics.....	7
	4.1.1    Construction costs .....	7
	4.1.2    Long-term maintenance.....	8
	4.2    Safety .....	8
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5.0	Conclusions and Recommendations .....	9
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	Appendices:	
	Appendix 1 Design 1 Scale drawings	
	Appendix 2 Design 2 Scale drawings	

Source: <http://www.monash.edu.au/lis/lionline/writing/engineering/technical-report/3.xml>

# Introduction

It provides the background information. The information here ensures the reader can understand your report ( ~1/2 to 3/4 page):

- First write a clear statement that outlines the **purpose** of the report.
- Then provide all the necessary **background** information.



Source: <http://powerlisting.wikia.com/wiki/File:Open-doors.jpg>

# An INTRODUCTION example

From the report entitled: *Preliminary Design of a Bridge*.

A dual carriageway bridge, with two traffic lanes in each direction, will be constructed on the Mitchell Freeway crossing the Swan River in Perth, Western Australia. The bridge will span 125 metres between man-made compacted fill embankments, with a grade of 0.056 m/m. It will be approximately 15 metres above the river surface of the river.

Two possible concept designs are presented for the bridge. In evaluating them the following criteria were considered; the cost of the bridge, methods of construction, durability and maintenance. The disruption to traffic during construction and the aesthetics were also evaluated.

The two conceptual designs are presented in the form of sketches; these portray both the elevations and cross-sections of the structures.

Source: <http://www.monash.edu.au/lls/llonline/writing/engineering/technical-report/3.xml>

# The Body or Discussion

It **presents your research**. It can also include research from other studies.

- Organise the information **logically into sections under appropriate headings**;
- Decide on the best ways of **conveying the information**.
  - Your **figures and tables** should be:
    - Numbered and titled;
    - Referred to in the text of the report **EG**: *The communication channels in the organisation are shown in Diagram 1.*
    - Listed in your Reference section if taken from a published source.

# Body or Discussion continued:



Source: <https://www.bluboot.com/tag/content/>

- Use bulleted or numbered lists;
- For your equations:
  - Centre them on the page
  - Place the equation number in the right hand margin in brackets - (1)
  - In the text refer to an equation as either Eq.(1) or equation (1), but be consistent!

A decorative graphic at the top of the slide. On the left, a green hand icon is positioned above a red gear. The word "Conclusions" is written in a large, orange, sans-serif font, slightly arched. To the right of the text is a green gear. The entire graphic is set against a light blue gradient background.

# Conclusions

These relate directly back to the aims of the investigation ( ~1 to 2 paragraphs).

- Indicate if you have achieved the aims of your investigation
- Give a brief summary of the key information in your report.
- Restate the major findings of your investigation.
- Outline your final recommendation



# A CONCLUSION example

Two designs for the bridge to be constructed on the Mitchell Freeway across the Swan River have been presented and discussed in this report. Design One is a super-T beam bridge and Design Two is a simple composite girder bridge. Both designs incorporate round piers on piled foundations, which are used because the soil conditions are unknown and possibly unstable. Design Two has some advantages because it is made of steel and thus has longer spans and fewer piers.

Design One is, however, the better design. This design requires minimal formwork in the construction of its concrete deck, it is relatively easy to erect and it maintains stability during transport and construction. In addition it is cheaper to build and more durable.

**Rewrite the first sentence by dividing it into two better sentences.**