



48230

Engineering Communication

Style Guide for Written Assignments

UTS: ENGINEERING

All written assignments presented in the Faculty of Engineering should conform as closely as possible to the guidelines presented in this Style Guide unless otherwise instructed by your lecturer.

Betty J. Jacobs

About this Document

This document outlines a style guide to be used as a basis for assignments for the Faculty of Engineering as negotiated with your supervisor for each subject. It builds on Morley-Warner (2000) *Academic Writing Is* and UTS Faculty of Business (1999) *Guide to writing assignments* specifically for an engineering context. You should refer to this Style Guide throughout your university experience so file it carefully.

Further help on writing and referencing can be found from the UTS Library website at www.lib.uts.edu.au

Copyright and acknowledgements

This document was originally developed by Helen McGregor and has been updated and edited by Betty Jacobs. Photocopies of this document for the purpose of study in UTS Engineering may be made without permission.

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1. INTRODUCTION

As a student enrolled in UTS Engineering it is important that you clarify what is expected of you when you are required to submit written assignments at university. During internships you also face decisions as to what is the best way to write up your work. Modelling your writing on existing corporate documents is often helpful. However, you still need to develop a writing style of your own that is at least acceptable and hopefully impressive.

This Style Guide is designed to help you produce quality written documents at UTS and at work. It is only one of many Style Guides developed by publishers, companies, conference authorities, universities and other groups. It is important when writing for other organisations that you follow their particular Style Guide.

What are quality documents?

Quality is often defined as "suitability for purpose". In both industry and university, written documents give evidence of quality. You must develop a commitment to quality in your written work as well as your technical engineering work.

Reports, letters and memos are common forms of documentation in business and industry; while research papers and essays, conference or seminar papers, worked solutions, reports and posters are frequently required at university. Each genre (or text type) has its own conventions of layout and the writing style for all should be clear and concise. Most organisations, including ours, prefer 'Plain English' that avoids jargon and excessive use of passive voice. We highly recommend that you read more about using Plain English at www.plainenglish.co.uk/plainenglishguide.html or in books like Eagleson (1992) *Writing in Plain English*.

Writing in a professional style

Your approach to writing also needs to develop to a professional level. In addition to accurately reporting the facts you discover during your research, you are usually expected to analyse and discuss various viewpoints. While it is still important to express your own personal opinions in some situations, you will be required to support your own views with competent research and the informed opinion from experts in the field.

You must understand the conventions of referencing not only to ensure that you comply with copyright regulations but because by referencing correctly, you are showing that you have consulted the recognised authorities in the area of your research. The list of references included with this Guide provides a source of additional information to help you develop your writing style

The purpose of this Style Guide is to provide you with some procedures to follow so that you can be sure that the format and layout of written documents you submit in the Faculty of Engineering at UTS conform to our expectations of quality. In designing this document we have consulted a variety of Australian and international Standards which deal with style in written documents. The conventions we have adopted are commonly followed in business and industry, and the style concurs with accepted practice for Engineers Australia. It is not the intention of the Faculty to inhibit creativity or imagination - quite the opposite. By having this standard which covers details of format we are providing you with a framework that will help you minimise the effort you spend on these details. You will then have more time to devote to exploring the subject matter and presenting a thoughtful treatment of your results, analysis, discussion and conclusions.

2. GENERAL CONVENTIONS

2.1 Purpose and Audience

Before attempting to write a document whether for academic assessment or the workplace you must clarify the purpose and audience for whom you are writing. This will determine both the genre (text type) and language style (and voice) you are expected to use. Morley-Warner (2000) discusses these issues in detail in Part 1 of her book. You will be required to produce work in a variety of both informal and formal genre. You must also write to be understood by your readers.

2.2 Language

English is the official language for written assignments in the Faculty of Engineering at UTS. You are expected to be competent in English and capable of progressing to a professional level. For most applications, 'Plain English' is preferred. That is, your writing should be as clear and concise as possible. Avoid excessive technical jargon and overuse of the passive voice.

If you use a spelling and grammar software package with your word processor, it should conform to Australian spelling (Macquarie Dictionary) when possible.

If you need help with English language or writing skills consult the ELSSA Centre (English Language Study Skills Assistance, Level 18, Building 1) before your lack of proficiency causes you problems with your Engineering subjects.

2.3 Word processed or Hand-written

In most cases, written assignments should be word processed. If it seems more appropriate or expedient to submit a handwritten assignment you should ensure that it also conforms as closely as possible to the conventions presented in this document. You should take special care to ensure that it is legible and professional in appearance. See Section 5 for more suggestions on presenting hand-written assignments.

2.4 Paper

You should use standard A4 size bond paper for most assignments. To ensure legibility and to make marking easier we prefer the print or writing to be on one side only. Simple handwritten assignments may use both sides providing the paper is thick enough for the writing to be legible. Single spacing is acceptable for most assignments. If you are submitting a draft for editing, and you expect the lecturer to make extensive notations, it would be more appropriate to use double spacing.

2.5 Font and Printing Style

Most experts agree that 12-point 'serif' fonts (e.g. Times New Roman) are easiest to read for large blocks of text. This has been done in this document. Other popular 'serif' fonts are Times, Bookman, New York, Garamond and Palatino. If you do not have access to these fonts, you should choose another conventional font and use a quality printer. Technical writers often use a sans-serif font such as Arial for headings as we have done in this document.

Usually one space should follow a full stop or comma. A blank line space should separate paragraphs and headings.

2.6 Titles and Headings

Consistency in format of titles and headings is essential.

You should leave a blank line space above all headings. Decimal indexing, as used in this document, should be used to identify major and secondary headings in large reports but is not necessary in essays and some other genre.

Using the style formats in word processing packages for headings allows you to ensure this consistency as well as automate the table of contents. This document models this style.

2.7 Pagination

Number all pages, preferably in the 'footer' of the page. To identify each page of an important document it is a good idea to place

your name and the title of the paper as a 'header' on the top of each page.

2.8 Margins

You should allow margins which are adequate for binding or notation and which provide an attractive frame for the text. A minimum of 20 mm for left and right, top and bottom margins is suitable for binding and reproduction, headers and footers. Some lecturers may ask for more to allow for marking, annotation and feedback.

Lines more than 50 characters long are more difficult to read. Keep this in mind when setting your page margins and font size.

2.9 Grammar and Style

The quality of your work is often judged by the way you present your report. Mistakes in spelling and grammar indicates lack of proof reading and can be interpreted as an indication of carelessness in the technical aspects of the work as well. It is important to be correct and to use grammar and spell checkers to help find careless errors.

However, don't rely on these devices alone. Proof read carefully and thoroughly. Use your dictionary, thesaurus and grammar texts.

Consult appropriate up-to-date references for details of grammar and style. Consult specific engineering texts for details of engineering notation and abbreviations. Don't hesitate to seek help from the ELSSA Centre if your English language or writing is weak.

For most technical writing, short sentences and paragraphs make the reader's task easier. It is often appropriate to use technical terms and even technical jargon. However, be conscious of all the readers of a report. The style should be crisp, clear and informative. The logical presentation of information should lead a reader clearly from idea to idea.

While sentences should generally be short and simple, complex and compound sentences can be used to show relationships of ideas. Each paragraph should open with a topic sentence which is developed through the paragraph. Lists of ideas can be presented as a 'chunk' of

information and are often highlighted using bullet points.

2.9.1 Dates and Time

Different formats for writing the date cause much confusion in international communication. While Australians would write **10/08/05** for the 10th August 2005, Americans would use **08/10/05** for the same date. It is easy to see the importance of some worldwide agreement as to the correct format. Confusion could arise translating either of these as October or August, depending on your cultural background.

The International Organisation for Standardisation (ISO) has developed a standard for the writing of calendar dates and time in numeric form (www.iso.org/iso/en/prods-services/popstds/datesandtime.html). Australian Standards reflect this standard. Dates are specified in descending order of year, month and day in the format **yyyy-mm-dd**. For example: **2005-08-10**. Time is written in descending order of hours, minutes, seconds in the format **hh-mm-ss**. If you are writing an international document this standard style should be used.

However, for most applications it is more helpful to present the date in full:

10 August 2005

2.9.2 Graphics

Drawings and diagrams can easily be incorporated using word processing packages. If necessary, drawings and diagrams can be done by hand using black ink. Photographs should be clear and original prints, scans from original prints or digital photos. Colour is expensive to print but loses definition when printed in black and white. Be careful to ensure that essential details are clearly visible.

Label all graphics clearly with a Figure Number and Caption
e.g. **Figure 4.2 Temperature Transducer**
and refer to them in the body of the text
e.g. **See Figure 4.2.**

2.9.3 Measurement

Most units of measurement used in Australia are those of the International System of Units, abbreviated 'SI'. It is important to use the correct symbol both in upper/lower case and spacing.

Unit names and symbols should not be mixed in the same context.

For example: **km/hr** NOT km/hour

The term 'per' should be used only with words, whereas the '/' sign should be used only with symbols.

For example: **kilometres per hour** and **km/hr** but NOT km per hr

2.9.4 Symbols

Since symbols are internationally recognised representations of units, not abbreviations of the unit names, they do not take full stops nor do they change when associated with numbers greater than one.

For example: **km** NOT km., **2 kg** NOT 2 kgs.

2.9.5 Mathematics and Symbols

Most word processing packages are able to handle mathematical equations, subscripts and superscripts and various symbols with ease. However, if necessary you can write them clearly with black ink. Ensure that adequate space is left above and below each equation. Define every symbol and give the units.

2.9.6 Equations

Equations should be numbered consecutively as they appear in the text and thereafter referred to by that number.

2.9.7 Non-discriminatory Style

Technical communication should be accurate and objective. It is not appropriate nor accurate to assume that the use of the male pronoun or male terms throughout a document includes the female gender. The plural form usually gives a better representation of your meaning and eliminates the need to use the cumbersome form of he/she.

For example: **Engineers ... they**

NOT the Engineer .. he.

Since engineering is an international profession, it is also important to be considerate of cultural differences. All communication should conform to the UTS guidelines for the use of non-discriminatory language which is detailed in *Language Matters*, available from the Equity and Diversity Unit website at

www.equity.uts.edu.au/resources/language.html.

2.10 Plagiarism

Plagiarism is regarded as a serious academic offence and can incur severe academic penalties.

When you directly copy the work of another without acknowledging it appropriately, you are obviously plagiarising. When you paraphrase another's work by putting it into your own words, or summarise their ideas, you must also acknowledge the source. Therefore, you are expected to reference your work in a professional manner. You are also expected to be honest in your use of all reference materials. We expect that all work you submit is your own effort, correctly referenced to show the sources of ideas and information. Academic staff are duty bound to protect the integrity of the University by taking appropriate action when they encounter cases of plagiarism. Further details about plagiarism and referencing can be found on the UTS Library and ELSSA websites.

2.11 References

The **Harvard System of referencing** is the standard used by UTS Engineering.

In many of your assignments, you are expected to research by reading relevant books and articles and to use this material as a foundation for discussion and argument.

Good referencing techniques help you to:

- acknowledge the source of your material

- comply with copyright regulations
- allow others to read further if they wish.

Accurate referencing also indicates that you have thoroughly researched your field and that you are conversant with acceptable academic practice. You are expected to acknowledge both direct quotations and paraphrasing of ideas. Citations should occur within the body of the text as well as at the conclusion as a bibliography or list of references.

Table 1 describes the information you will need to record for future referencing purposes when you are researching your topic.

Table 1. Referencing information you should record when reading to inform your research.

Source	Reference citation requirements
Book	Author, date of publication, title, edition if other than first, publisher: place
Journal	Author, date of publication, title of paper, journal name, volume number, issue number, date of issue, page numbers of paper
Conference	Author, date of publication, title of paper, conference and proceedings name, date of conference, page numbers of paper
Thesis	Author, date of publication, title, university
Chapter in larger publication	Author, date of publication, title of paper, publication name, publisher: place, page numbers of paper
Electronic Sources	Electronic and other non-print media should be identified as such by noting the media in brackets after the title. Include author, date of publication, title, the location and the name of the distributor if possible.
Internet	For items read or acquired over the Internet, author, date, title, publisher plus the format and shortest file address sufficient to find the item should be given.

2.11.1 In-text Referencing

When you refer to or quote the work of another author you should cite the author's surname and year of publication (and the page number as appropriate). This referencing usually appears within the written text as shown below.

Smith (1990, p. 32) argues that all engineers are environmental engineers.
or
'All engineers are environmental engineers.' (Smith 1990, p. 32)

Footnotes are used sparingly for explanatory notes.

2.11.2 List of References

At the end of the paper you should list all works you have used in alphabetical order by **author surname**. This list is usually headed *References*. (A *Bibliography* is a list of known or consulted works on the topic, regardless of whether you have directly used them or not.) Where there is more than one reference by the same author, you should list them in chronological order, the most recent publication first. If there is more than one in any one year then add an a, b, c... after the date to allow accurate in-text referencing. For full details of referencing style consult the ELSSA website under the Links tab - Study Links at www.elssa.uts.edu.au/elssalinks/studylinks.htm. Here you will find "A comprehensive guide to the Harvard and other styles" produced by the University of Central Queensland as well as other useful referencing sources.

If an article has no obvious author, you should provide the fullest details possible in the textual citation and the list of references. The title or company name can be used instead of the author in these cases.
e.g. *Financial Times*, 14 February 1996, p. 5 editorial

The expression 'Anonymous' or 'Anon' should not be used. It is worth noting that you should question the validity of any publication that lacks referencing details as there is no way for

you to authenticate its contents or for others to find it again.

Remember that the information in the reference list must allow the reader to find the original reading for themselves.

2.12 Originality

Assignments are given to help you assimilate and synthesise the subject matter. During the course of completing an assignment, you will probably have discussed some aspects with your colleagues. We encourage this cross-fertilisation of ideas. However, it is not meant to result in blatant copying. If you have discussed an assignment with colleagues, and think that minor similarities with their work may appear, be sure to note their names on your cover sheet (see Section 2.14). If you have consulted previously submitted assignments from past students, you should list these assignments in the references section. Direct quotations from text books should not be overused.

Direct quotations should not be included in the word count of any assignment. Limited quotations, and paraphrasing should, of course, be correctly referenced. (See Section 2.11)

Your assignments should clearly be the result of your own efforts.

2.13 Group Assignments

Engineers often work as part of a professional team. Therefore, it is important to learn how to work in groups. Group assignments give you the opportunity to learn how to divide a complex project into tasks and share the workload in an equitable and efficient manner. Group assignments can also maximise your learning by encouraging you to discuss, debate and consolidate all your ideas and information. All members of a group are expected to make a fair contribution to the research, analysis and final written and oral presentations. Do not leave the final report preparation to one student. All members should be involved in the writing, editing and revising of the document so that it

will have 'one voice' and not appear to be a collage of various writing styles. You should discuss any problems with unequal contributions with your lecturer.

2.14 Presentation of Assignments

Your assignments should be stapled in the upper left hand corner with a Faculty Cover Sheet (available on the Engineering website at <http://www.eng.uts.edu.au/CurrentStudents/StudentSupport/Index.html#Forms> or from the UPO).

The Cover Sheet must contain the following information.

UNIVERSITY OF TECHNOLOGY,
SYDNEY (current logo can be used)
FACULTY OF ENGINEERING
Assignment Title and Number
Student Name(s) and Number (s)
Subject Name and Number
Lecturer's Name
Due Date
Submission Date
Declaration of Originality
Signature(s)
Statement of Collaboration

Most lecturers prefer that assignments are NOT be presented in a folder or plastic sleeve. However, for some assignments or specific applications a folder or binding is appropriate.

3. ENGINEERING REPORTS

Reports, both in industry and at University, are tools for providing information for decision making. As such they should be designed so that they fulfil their specified purpose and are easy to use. The following guidelines provide a standard for submission of reports in the Faculty of Engineering and are generally accepted for the engineering workplace.

3.1 General Requirements

The general conventions presented in Section 2 of this Style Guide apply in principle to the writing of engineering reports.

3.2 Structure

The recommended structure for most formal reports is as follows:

- Cover Sheet (for assessment tasks)
- Title Page
- Acknowledgments
- Table of Contents
- List of Figures, Illustrations, Tables
- Glossary/ List of symbols
- Summary (Executive Summary)
- Introduction
- Sections of the Report

- Method of Research
- Results
- Discussion

- Conclusions
- Recommendations (if appropriate)
- References and/or Bibliography (see Section 2.11.2)
- Appendices (if needed)

For more detail about each section of a report see Table 2.

Table 2. Content of sections of an engineering report.

Section of Report	Contents of Section
Title Page	Use a title that fully describes the major topic of your report. Give the authorship details fo your report, stating: name of writer, job title organisation city, state, postcode Give the date the report is released. Give the readership details of your report, stating: name of reader(s) , job title organisation city, state, postcode Use a separate page – no page number.
Acknowledgements	When you want to draw attention to valuable help or important contributions, an acknowledgements section is used.
Restrictions	Reports are often written for specific readers only. Restriction statements define the circulation and describe the confidentiality of that report.
Table of Contents	Reports of more than three pages should contain a list of the headings presented in the report with relevant page numbers as a table of contents. A decimal indexing system similar to the one used in this standard should identify each section of the report.
List of Figures, etc	If you use a number of tables, figures, and illustrations you should also include a list of their location.
Illustrations	All illustrations, tables, graphs, charts, diagrams should be presented at the appropriate point throughout the report. Each item should be given a Title and a Figure Number. For example, a table describing the cost of equipment presented in the Discussions Section (Section 4) could be titled "Cost of laboratory equipment" and given the index Table 4.3 which would indicate that it was the third table to appear in Section 4. Tables and graphs usually have the title above the material, while other illustrations have the caption below the figure.
Glossary/ List of symbols	If you have used a large amount of technical words or symbols in your report you could include a glossary or list of symbols at this point.
Summary/ Executive Summary	The summary of a report presents the key issues and facts of the report in a concise form. It is one of the most important sections of the report since it is read by almost all readers. It should include: the purpose of the report the main findings the conclusions and the recommendations. It does not contain examples or illustrations. While it is usually presented first, it is the last part of the report to be written. Many readers will read ONLY the SUMMARY, so you should present the entire report in miniature. Give the readers all the facts they need to get the important messages of the report. For lengthy reports in government and industry, the summary may be an entire volume. The length of your summary should be judged on function not by rule. However, industry values writers who can present concise one page executive summaries (i.e. summaries for the executive to read). Use a separate page – no page number

Introduction	<p>The introduction contains any background needed to be able to appreciate the central information presented in the report.</p> <p>In your Introduction:</p> <ul style="list-style-type: none"> state the aim or objective of the report include some indication of why the report has been requested list the issues examined in your Discussion section indicate briefly your conclusion. <p>The introduction also gives an overall view of the content and scope of the report.</p> <p>The page numbering of your report begins with the Introduction</p>
Background	<p>In your Background you should:</p> <ul style="list-style-type: none"> tell the story of an issue and/or organisation, and/or person, and/or event give definitions of any terms that the reader may not be aware of. <p>A literature search is often required to present the current situation and how your work will move on from there. A written Literature Review can be included in a following section or as an Appendix. If you have used specialist terms, it is wise to define these terms so that there is no misunderstanding or confusion throughout the report. If extensive technical terminology is used these should be added to the Glossary.</p>
Method	<p>A clear description of the research method should be included in the report. The purpose of this section is to give other researchers sufficient data to be able to replicate your study or understand where and how your data was derived. Note that this is not a methodology (=study of methods, i.e. a discussion or comparison of a variety of methods) but the method you have used.</p>
Results*	<p>You must present the relevant data in a clear and orderly manner and take care to format and organise it so that readers can easily understand and check for accuracy. In addition, you must interpret the data to give it meaning. Graphical interpretations in the form of tables, graphs or models, are especially useful to simplify complex numerical data. Extensive calculations or tables of results that are interesting and relevant, but not essential to the main arguments should be presented in an Appendix.</p>
Discussion*	<p>Use your professional expertise to extract meaning from the data presented. Discuss how the laboratory data compares with theoretical predictions. Contrast Australian results with overseas studies. Explain the limitations of the equipment or the constraints of financial resources. Admit possible flaws in the method but show how you compensated by additional checks. Keep opinion quite distinct from fact and be careful of making inferences.</p>
	<p>*Note Use clear descriptive headings for the two sections above. Do not use the terms Body, Discussion, or Results since they do not give your readers any useful information about YOUR report. Instead use headings that describe what is in your report. eg <i>Analysis of Mild Steel Samples</i> or <i>Difficulties of International Benchmarking</i></p>
Conclusions	<p>This section opens with a brief summary of the report and then draws conclusions from the data presented. No new material should be introduced in this section. A good test of a well-written report is to check whether readers draw the same conclusions as those the writer presents.</p>
Recommendations	<p>Recommendations are clear statements of the action which should result from the report. They often form the basis for motions to be debated at business meetings. You should take great care with the wording of recommendations to prevent ambiguity and to ensure the outcome you are suggesting. Recommendation: That this organisation purchase three new computers for use in Test Lab 2. or We recommend that students who are completing their final year projects should consult texts on thesis and report writing.</p>
References	<p>Most reports require that you read some relevant literature as background to your own experiment or innovation. All literature that you use to formulate your basic ideas should be cited as references. Additional books, newspaper articles, journals, and sales pamphlets which could be of interest can be included in a <i>bibliography</i>. Sometimes evaluative comments are included to indicate what is valuable or interesting and the subsequent document is termed an <i>annotated bibliography</i>. You can also list the names of people you interviewed in the course of your investigations. Reports are referenced to acknowledge the work of others but also to let your readers know where they can find the original work.</p>
Appendix	<p>Information that is too long, detailed or technical to be included in the main body of your report should be placed in the <i>Appendix</i>. Extensive calculations or results, maps or diagrams, pamphlets or brochures which are relevant and may be interesting to the reader but are not necessary to the main discussions in the report should be placed in this section.</p> <p>This material should be clearly titled and labelled (e.g. Appendix A, Results of Test 3.1) and flagged at an appropriate point in the main text (e.g. See Appendix A).</p>

3.3 Presentation of Reports

For simplicity, you should submit routine reports on standard A4 paper with an appropriate cover page and stapled in the upper left-hand corner. Most lecturers prefer that no folders or plastic envelopes are used.

However, in workplace contexts considerable thought is given to the design and presentation of reports. You should consult the workplace Style Guide for details

In some subjects, the professional appearance of reports is also an important component of the overall presentation. Your lecturers will probably indicate that they expect a more elaborate presentation. However, you may need to use your initiative to determine what is appropriate.

Your capstone project (or thesis) report requires careful attention to format, writing and presentation style. Details and further guidelines can be found on the Capstone Project website at www.eng.uts.edu.au/capstone

3.4 Writing Style

Reports should be easy to read. Therefore, the writing style should be simple, clear and concise. Generally use short sentences and crisp short paragraphs. (See Section 2.8 for conventions of grammar and style). You should be sure to number all pages of the text including Appendices and other indices with Arabic numbers (1, 2, 3), while the Table of Contents is identified with lower case Roman numerals. (eg i, ii, iii, iv, v).

4. LABORATORY REPORTS

4.1 Introduction

Laboratory reports document experiments carried out by you either independently or in groups. More often than not, the quality of your experiment will be judged by your written account. The purpose of this account is to state clearly and exactly what has been done, to explain why the work was done, and to give the results attained.

There are basically five types of experiments carried out in engineering laboratories:

- verifying laws and principles
- measuring or determining the value of a property
- comparing various methods of determining the value of a property
- comparing experimental results with theoretical results.
- implementing a theoretical design.

To successfully complete these experiments, you will need to

- test accurately and consistently
- observe carefully and objectively
- measure accurately and consistently
- document your work thoroughly so that the experiment can be checked or replicated

The basic format for these reports is similar to all formal reports. However, there are some conventions which apply specifically to laboratory reports, and therefore a separate list of standard criteria is useful.

4.2 General Requirements

The general conventions presented in Sections 2 and 3 of this document apply in principle to the writing of laboratory reports

4.3 Structure

The recommended structure for laboratory reports is as follows:

- Cover Sheet
- Title Page
- Summary (if requested)
- Aim
- Theory
- Apparatus
- Method
- Results
- Discussion
- Conclusions
- References
- Appendices

Table 3. Content of laboratory report sections.

Section of Report	Contents of Section
Title Page	List the title of the experiment, date, and objective of the experiment in addition to the conventional data.
Summary	Concisely describe <ol style="list-style-type: none"> a. the aim of the experiment b. the method used c. the main result(s).
Aim	State in a one or two sentences, the main reason for carrying out the experiment; i.e. verify, measure, compare.
Theory	Present a brief account of the underlying theory.
Apparatus	Show the construction and operation of test equipment with detailed drawings and accompanying written text.
Method	Document the experiment with a clear and full account of how the experiment was carried out so that others could repeat your study.
Results	Present clearly constructed tables of measurements or a detailed synopsis of observations made, followed by calculations, graphs, and estimates of accuracy. It is imperative to record the units used for each measurement.
Discussion	Usually the most important section of the report, since it makes sense of the data presented above. Comment on the results and explain unexpected results. Compare your results with published values or with different sets of results. You may also suggest modifications or changes to any subsequent experiments or give direction for further research.
Conclusions	Summarise the discussion and state whether the aims of the experiment have been achieved.
References	List the publications you consulted as outlined in previous referencing sections of this document.
Appendix	Present lengthy calculations or raw data as supplementary material.

5. HAND WRITTEN ASSIGNMENTS

Handwritten miscellaneous assignments should also be easy to read, understand and grade. The purpose of assignments is usually to give you practice and to verify your competence at some specific task. You should design your paper to achieve these goals. You should also leave adequate space for assessor's comments and notations.

5.1 General Requirements

Whenever possible, handwritten assignments should conform as closely as possible to the General Conventions presented in Section 2. They should have clear sections that may include Problem Number, Statement of what is required, clear diagrams, methods used, clear working for mathematical problems and an answer clearly highlighted.

5.2 Paper

Grid paper can be used to ensure neatness in both writing and drawing. Lined paper is appropriate for simple calculations. Paper should be a standard A4 size and should be of a thickness which allows both sides to be used when required, without losing clarity.

5.3 Writing

Writing should be clear and legible. Black pen is preferred. Pencil is sometimes acceptable for calculations or sketches. Check with the lecturer for individual requirements.

5.4 Pagination and Numbering

All pages should be numbered, and your name and student number should appear in the upper right hand corner of each page. Each assignment question should be clearly numbered in the left margin.

5.5 Margins

Adequate margins should be provided for lecturer comment.

5.6 Style

The assignment answer should be clearly highlighted. A ruled line should separate each assignment question.

5.7 Presentation of Hand-written Assignments

Assignments should be stapled in the upper left-hand corner with a standard Cover Sheet discussed in Section 2.14.

6. CONFERENCE PAPERS

Conference or Seminar Papers should conform to the style guide issued by the

conference authority. An abstract will usually be required.

7. POSTER PRESENTATIONS

Posters have become a common way to present the results of research work at conferences and are a useful way to publicise your work. A poster is like a mini-paper with the emphasis on 'mini'. It is a clear, succinct and precise **summary** of the project presented in a language that an intelligent layperson can understand. At conferences posters are displayed in a common area and the authors usually stand by their presentations at designated times to answer questions and explain their work. Viewers can consider the material at their own rate and discuss interesting points with the authors. Sometimes, authors also give short summary oral presentations. Posters at university are a good way to share your ideas and research results, too. Other students and staff can see at a glance the variety of work being attempted.

7.1 Content

Viewers need to be able to quickly identify:

- the reason why the research was necessary
- what the researcher has achieved
- the significance of the research and its potential benefits.

A poster should contain a title, your name and student number and where you can be contacted, an abstract, some text (e.g. equivalent to the executive summary of a report), diagrams, photos and other graphic material.

Additional material can include

- exhibits, objects and models
- audiovisual displays
- take-away handouts (which could be a summary of your project or your CV)
- a blank note-pad so that when you are not in attendance readers can leave messages or comments for you.

7.2 Visual Appeal

Posters should have considerable visual appeal. They need to be conceptually appreciated from a distance of two metres so lettering should be at least 20-point and in bold type. The poster sections need to be arranged sequentially with important sections highlighted and detail easy to read. The whole poster needs to be attractive with a careful choice of colour and text able to be read at a distance of at least one metre.

7.3 Style

Simplicity is the key to a successful poster. Keep your message as simple as possible. Ask yourself key questions and then design your poster to clearly and simply answer those key questions. Consider which medium best satisfies the needs of the message. Is a picture worth more than a thousand words? Is a graph or table a more efficient way to summarise your data. Which colours are most appropriate?

Use headlines and pointers to focus attention on key points. Graphics should probably take up more than half of the poster.

The text should be clear and concise. Use short simple sentences. Use as little technical jargon as possible. Remember that not all viewers, even the engineers, are specialists in your research area.

The movement of the reader's eyes over a poster should be as natural as possible. Guide readers down columns and across rows. You can use arrows, hands, numbers or lines to help keep the viewers on track.

7.4 Size

Unless otherwise instructed, posters should be at least A1 size (equivalent to 8 x A4 pages – 840x594 mm) to a maximum of 1500 mm x 1000 mm. Lettering should be at least 20-point and in bold type. Consider how you will print it and the associated costs.

8. RESUMES

You will need to adapt your personal resume (Curriculum Vitae) to meet the changing demands of your professional development. Your lecturers will give you guidance in the different styles of resumes appropriate for various job applications. The Industry Partnering Unit (IPU) in the UPO and your first Engineering Practice Preview subject will support you in designing an acceptable resume before you apply for work through the Faculty.

9. LETTERS

Throughout your academic life you may need to write a number of letters for both university and personal business. At work you would probably follow the form used by your organisation. The references listed at the end of this Style Guide give assistance with letter writing. The IPU also supplies templates for some letter formats online at www.eng.uts.edu.au/Industry/Internships/IPUEngineeringExperiencePage.htm.

10. OTHER RELEVANT GENRE

Other genre (text types) you may be expected to use in your academic experience include:

- essay
- literature review
- thesis
- annotated bibliography
- reflective journal

and many more. Descriptions of these can be found in the references below.

11. REFERENCES & FURTHER READING

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Beer, D.F. 2005, *A guide to writing as an engineer*, Wiley, New York

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Mohan, T., McGregor, H., Saunders, S., & Archee, R., 2004, *Communicating as Professionals*, Thomson, Australia

Morley-Warner, T. 2000, *Academic writing is...*, CREA Publications UTS, Sydney

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UTS Faculty of Business 1999, *Guide to writing assignments*, Faculty of Business, University of Technology Sydney, Australia