The University of New South Wales

School of Photovoltaic & Renewable Energy Engineering

Guide to Writing and Speaking

Prepared by The Learning Centre, UNSW © 2009

Foreword

Good communication skills are very important, particularly for Engineers. Professional Engineers are required to communicate and interact on a daily basis with a variety of people including co-workers, managers and clients. This communication may take the form of written reports or presentations, and the better your communication skills, the more effectively you will be able to promote your ideas. This is particularly important for Engineers when trying to explain complex concepts to a broader audience not versed in technical engineering terminology.

Throughout your studies with our School you will be asked to write reports and theses as well as perform presentations as part of your assessment. These tasks will help you to develop your communication skills to better equip you for life as a Photovoltaic or Renewable Energy Engineer. Effective communication is a skill which can be developed and this guide has been produced to help you achieve this. As communication skills are highly individualised, this guide is not definitive; however, it is aimed at outlining the basics of good communication.

Our School would like to thank the School of Electrical Engineering and Telecommunications and The Learning Centre for allowing us to adopt the EE&T 'Guide to Writing & Speaking' to create this guide for SPREE students. It is hoped that students will find this a valuable guide and learning tool.

Trichelle Burns,

Student Administration Manager (2006)

School of Photovoltaic and Renewable Energy Engineering.

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Design and layout by Tracey-Lee Downey (The Learning Centre).

You may think it is only "the answer" that matters. (This might be true when it is already known, as at School). However, without a clear reporting of how you attained that answer, the answer is of no value to the professional engineer who solves new problems, and must persuade others that the answer is valid.

Contents

More than half of an engineer's 'work' involves writing and speaking to others—both engineer and non-engineer. These sections explain how to structure and present your communication.

You need to present information in ways that satisfy markers. Later, these conventions will also be required in your professional work.

Some more advice to help you review your approach to study.

Report Sections

A report documents an investigation of a design, a problem or a topic of interest. A report is usually written so that information can be easily extracted. Depending upon its length and purpose, a technical report will include a number of sections. The more common sections are listed below. Essential sections common to all reports are marked with an asterisk.

Title Page*

Presents routine information and hints at the contents of the report through an informative title. Design your title page to be simple yet functional and appropriate for the audience and the task. Some of the more common elements found on the title page include:

- Institution/ Organisation's name (e.g.. The University of New South Wales)
- Course name and code
- Title of the report—a concise description of the topic
- Author (student's name and number)
- Name to whom the report is submitted (e.g. your lecturer)
- Date of submission
- Signed statement of originality (it is important to declare ownership of the report in case there are future questions).

All the assignments you submit will require a School cover sheet. In many cases this will function as your title page. Cover sheets are available on the WebCT/ WebCT Vista site for your SOLA course, or from the WebCT/ WebCT Vista site SOLA1000 information for PV students.

Abstract*

Provides an overview of *the most important aspects of the report*. Ideally it should be less than one page, varying between 50 and 250 words though for most reports, the former is more common. A longer and more detailed abstract is called an *Executive Summary*.

The abstract should clearly and briefly state the following:

- what was investigated (topic)
- why it was investigated (issues or questions)
- how it was investigated (the method is usually only explained in experimental reports)
- major conclusions from the findings
- major recommendations (to suggest change or that further action is required)

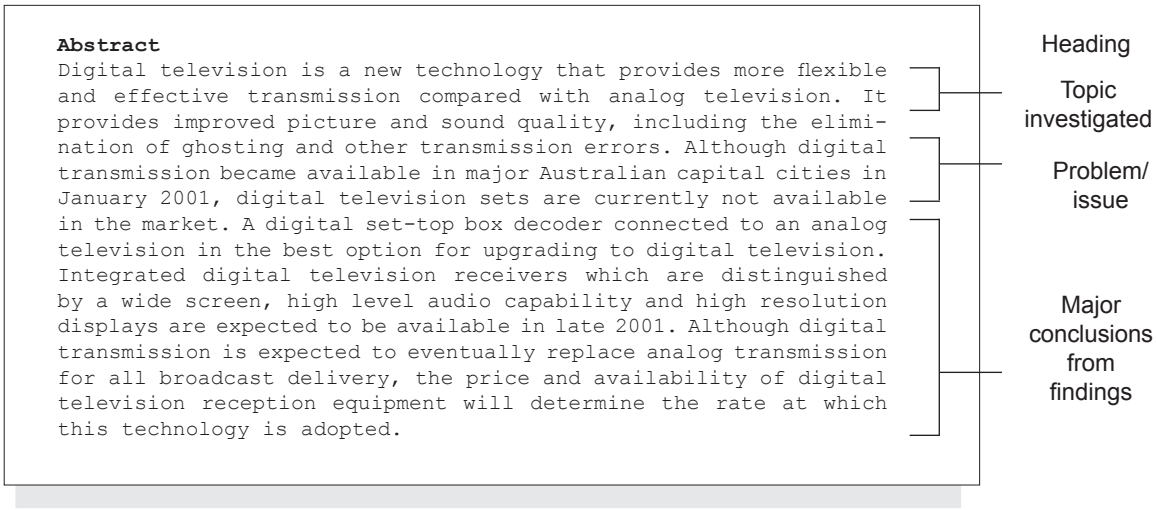

Figure 1. Sample Abstract for a General Report on The Introduction of Digital Television Technology

Acknowledgement

Usually included in a thesis or a similar large report, but not usually included in an undergraduate report. Thank the people and organisations who helped and supported you in providing resources and/or information. For example, your lecturer/supervisor, individuals or organisations or other students and staff who gave important information or advice. If your report contains information that is unpublished, you should state who gave you permission to include the information. This is important when you are involved in an industry partnership and the ownership or intellectual property of information needs to be documented. A few sentences or a short paragraph is usually all that is required.

Contents Page

Indicates the structure of the report and assists the reader to locate specific information of particular interest in a report. Include heading, subheading and page numbers.

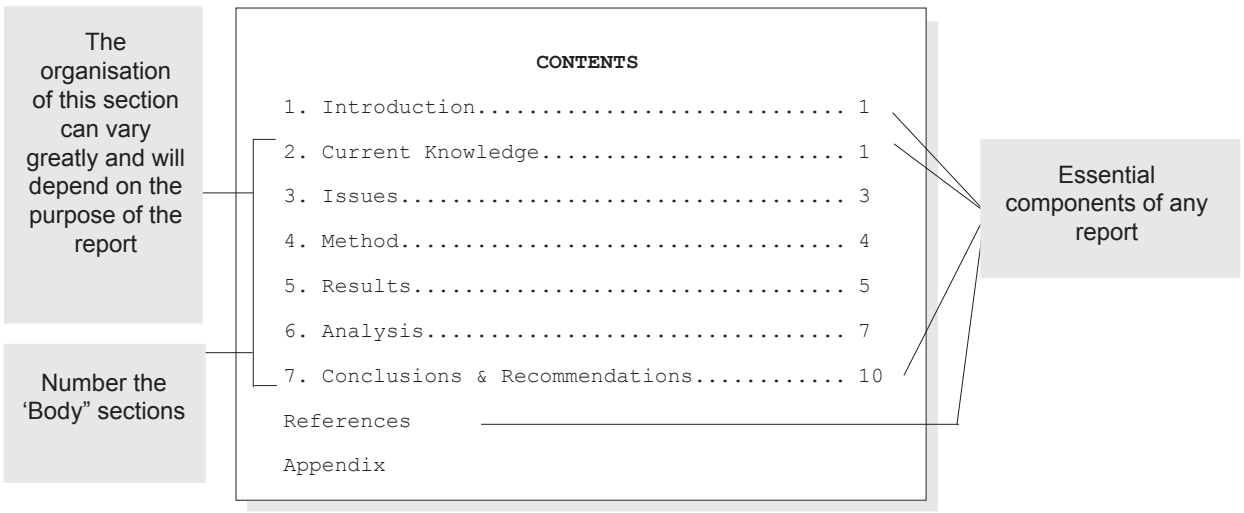

Figure 2. A sample contents page

Minutes of Meetings

Minutes are produced to record and communicate decisions made by groups of people in face to face meetings. Minutes are a summary of decisions made in a meeting. They also include the names of person/s responsible for agreed action/s.

Layout/ Presentation

Just as your laboratory measurements are not recorded in pencil, so your minutes must be in ink and include:

1. when and where the meeting took place
2. who was present and absent
3. the reason for the meeting
4. what was discussed, decided and who is responsible for agreed action
5. references to source material if appropriate
6. the date of next meeting
7. when the meeting closed
8. at formal meetings, signatures of all present may be required to indicate accuracy and agreement to the minutes.

Running Meetings

- Remember to circulate an agenda before the meeting which lists items that the meeting will cover. This can be decided at the end of the previous meeting or before the meeting begins.
- Try rotating the duties of chair and minute taker so every member of the group gains experience and contributes.
- During the meeting, the chairperson announces the items on the agenda, assists the group in staying on track and makes sure everyone participates. For example, the chair would summarise the discussion if it has gone on too long or the group appears to be sidetracked. “So, what we have said so far is . . .”.
- When discussing an item make constructive comments on the idea rather than focusing on the person.
- When taking minutes, it can be helpful to check understanding and get agreement by reading to the group what you have written down.

committee or group name

Technical Meeting Minutes

Group Project on Development of Optical Devices Based on Multicore Fibres

Date: Friday 18 February 2000
Venue: Room G7, 9.30 am
School of Electrical Engineering and Telecommunications UNSW

when and where

who was there

(identify chair and secretary)

Present. Paul Chen (Chair), Brett Gilford, Jack Lowe, Dianne Thomson, Jill Allen, Sean Howes, Tan Wu, Phil Ashcroft (Secretary), Gerry Ascher, Will Brown
Apologies Matt Smith, Simone Rowe

what the meeting is to achieve

Meeting Purpose

- Discuss progress of project prototype
- Allocate work on packaging and tuning.

minutes

- topics discussed

Experimental Results of Prototype

JA showed a fully functional prototype packaged TCF Demultiplexer . Discussion followed regarding costs involved in manufacturing the device. It was generally thought that main costs would be assembly and packaging. This would depend on producing long lengths of stable TCF. Future availability of low index cladding tubes may well make the rod-in-tube method attractive for the direct manufacture of precision TCF performs.

- specifics shared and discussed

JA presented the results of the TCF-Bicell measurements. For a UV tuned sample isolation of 20dB and 18dB was obtained in cell 1 and 2 respectively. (*NB all references to dBs will refer to optical dBs*). This represents about a 4dB degradation from the TCF only measurements, probably due to the 2nd mode power.

- decisions made

Measurements of the bend tuned sample were not easy to do using the monochromator. However using high frequency modulation of the lasers made bend tuning trivial. Thus it would be feasible to do bend tuning in the primary package together with the alignment of the TCF to the bi-cell. The fibre used had well matched wavelengths but not particularly good isolation. Isolation of 18.5dB and 13dB was obtained in cell1 and 2 respectively.

- achievements or outcomes

Best High frequency results were from a UV tuned sample and gave isolation of 15dB and 17.5dB in cell 1 and 2 respectively. This compares favourably with the optical values of 14.8dB and 17dB at the same wavelengths of 1307nm and 1545nm respectively.

Decision on Future Direction
Work has been allocated to writing the final report (see previous minutes details) Other work areas as follows:

who is allocated tasks

Packaging of TCFs in hand (**Action : DT)**
Label for the package (**Action : BG, JA)**
Bend tuning of TCF and DCF (**Action JA, TW, WB, PA**)

Other Business Next meeting - Friday 21 April 2000 9.30am