



# A Guide to Writing Formal Technical Reports

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## *Content, Style, and Format*

Adapted, with permission, by Robin L. Potter, Professor,  
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from Engineering Work Term Report Guide:  
*A Guide to Content, Style and Format Requirements for  
University of Victoria Engineering Students Writing  
Co-op Work Term Reports*  
Updated by Suzan Last, University of Victoria, October 2017

January 2021



*A Guide to Writing Formal Technical Reports: Content, Style, Format* has been adapted specifically for use by professors and students in the technical communication courses offered by Seneca College. These technical communication courses include, but are not limited to, BTC440, EAC390, and TEC400.

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## 1. About Formal Technical Reports

The main objective of formal technical reports is to communicate technical information and research in a professionally written format using recognized conventions. Such reports typically report on research findings. Formal (also known as long) reports contain components, including front and back matter, that aid the reader in understanding the context and content of your document.

### 1.1 Your Audience

Your audience is your technical communication professor. Write your report at a technical level using plain language that is understandable to this audience; i.e., a reader who has a basic understanding but who may not be familiar with your particular area of work or the terminology and acronyms commonly used in that context. Make sure that you define all acronyms and terms that are not commonly used. A glossary placed at the beginning of your report can assist the reader without hampering the readability of your report.

### 1.2 Report Length

For TEC400 specifically, your report should be about 10-12 pages of single-spaced text in 12-point, sans serif font, with margins not less than one inch. If a printed copy is required, pages are printed single sided; a serif font may be used for printed copies. Pages are to be numbered as described in Section 4 of this document.

### 1.3 Report Style

Write your report in a formal style, avoiding colloquial or slang expressions, and avoiding first person references (I, we, me, us). Sentences such as "I machined five of these cylinders on the lathe" should be expressed as "Five of these cylinders were machined on the lathe", which makes use of a concise, active, direct style. Use passive verb constructions to avoid first person, but use active constructions in most other cases; e.g., "The cylinders passed the pressure test", in which the actor precedes the verb.

Writing style, spelling, punctuation and the report format will constitute a significant portion of your marks. See the rubric provided by your professor for the distribution of marks. For information about writing styles as well as report formatting, consult Resources and References at the end of this document and *Technical Writing Essentials* (Last & Potter, 2019/2021).

## 2. Choosing a Topic

The technical report is more than just a technical description. It often outlines how technical information and procedures were applied to solve a problem. The problem may be one that you worked on directly or assisted with. It may be a problem that fellow employees or students are working on and that you are interested in. Choosing a topic and developing the report content can be the most difficult part of writing the report.

The easiest way to write a coherent report for a technical communication course is to have a topic, then research and discuss a central issue about the topic. This approach can lead to an effective problem-solving, proposal, or recommendation report. Any material presented in the report must be relevant to the central issue. For a problem-solving or recommendation report,

for example, provide suitable background, identify the problem, establish criteria for solving the problem, discuss possible solution(s), if applicable discuss how the solution was implemented and what the result was (e.g., Did the solution work as desired?), and what changes are recommended, if any.

An example of a topic could be the adoption of a new CAD system. Rather than simply including a lot of unconnected information about the system, an issue could be why the change is needed. Any information introduced in the report should relate to this focal point. The introduction would include information to allow the reader to understand existing problems (e.g., how the original drawing system works, difficulties when trying to update/access drawings). The requirements for the new system could then be introduced (e.g., cost savings, speed, ease of use), then a discussion on which system was chosen and why it was chosen would follow. Your conclusions could be that the best system was chosen (based on cost, ease of use, speed, availability, etc.). You could then recommend ways to overcome some of the compromises made (e.g., purchasing a laser plotter at a later date to reduce up-front costs). By having an issue, the report will follow a logical flow and assist the reader to understand the issue.

Where possible include numbers and reference material to support your statements. For example, stating that "adding a colour printer is not feasible due to costs", is not as convincing as including a table of price quotes from potential suppliers.

### **2.1 Proprietary Reports**

If you are working on a report resulting from an experiential company involvement or a work term, then if at all possible, choose a topic that you can write about without including any confidential information. If you are working on a confidential project that you would like to make the subject of your report, consider the underlying generalizable engineering problem that you are solving. Two other techniques for avoiding issues with confidentiality are to replace names with generic placeholders and to remove identifiable specifics. Before you start writing your report, check with your professor or co-op supervisor about the content. If you are unable to come up with a non-confidential topic, contact your work site supervisor to discuss alternatives.

## **3. What to Include in Your Report**

Include the following items in your report, in the listed order:

- Front matter
  - Title Page
  - Letter of Transmittal
  - Table of Contents and List of Figures and Tables
  - Summary
  - Glossary (if required)
- Body of Report
  - Introduction/Background
  - Discussion (bulk of the report)
  - Conclusions (and Recommendations)
  - References
- Back Matter
  - Appendices (if required)

The purposes of each of these sections is described in the following sections.

### **3.1 Front Matter**

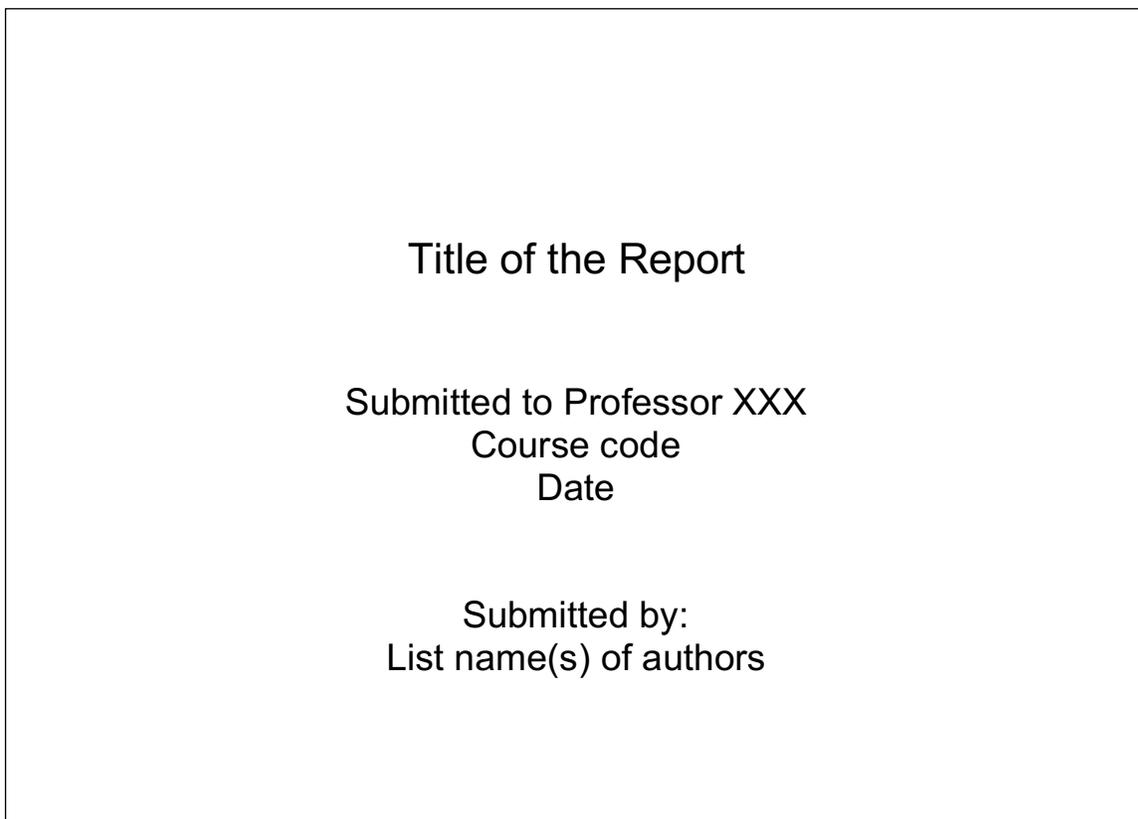
The front matter of your report consists of everything that comes before the Introduction.

#### **3.1.1 Title Page**

The title page announces your report to the reader. As an announcement, the title should be descriptive of the report content and understandable to the general reader. Terminology specific to your company and uncommon acronyms should be avoided in the title. Your title page should not be numbered. It must include the following information:

1. a report title no longer than 120 characters that is narrow and specific
2. name of the person to whom you are submitting the report, their position, and company
3. the course code in full
4. name(s) of report authors
5. the date you submitted the report.

If you include an image, be sure to indicate the source right below. Refer to the sample title page (Figure 1) for overall layout.



**Figure 1: Sample Title Page**

### **3.1.2 Transmittal Document**

The transmittal document not only introduces the report, but also explains its purpose and scope, as well as outlines the conclusions (and recommendations if included). Your contribution to the overall project and acknowledgements of others should also be included. The transmittal document can be formatted either as a memo or as a letter, depending on whether the report is being transmitted within or outside an organization. The sample below consists of a letter of transmittal.

The transmittal document follows the title page. It is considered as a part of the front matter of the report and as such, has no page number. Use a standard formal business letter format (full block format is the easiest) if the document is being sent outside the organization, address the letter to one person, typically your professor, and include your signature at the end.

The transmittal document should contain the following information on one page:

- the transmittal statement and the title of the report; e.g., Please find attached the report entitled XXX completed as a requirement for TEC400.
- your project purpose and scope of work; i.e., the facets of the problem or topic that are discussed
- an overview of the main findings and conclusions; a reflection of your learning
- disclaimers, special problems encountered, or extenuating circumstances, if applicable
- a statement that the report is confidential, if it is
- acknowledgements of helpful people, groups or organizations
- any other features that may be of interest to the reader

Figure 2 below shows a template for formatting a letter of transmittal. Figure 3 shows a sample letter.

**Letter of Transmittal Template**

[Left align for a full block format]

---

Your own or the company's return address

Date

Receiver's name, title  
Company name  
Address

Salutation: Dear XXX:

Begin with a transmittal sentence: "Please find enclosed/attached the report entitled XXXX submitted following research into XXXXX for TEC400. Mention the purpose of the research

Offer an overview of the report's findings and the conclusions. This paragraph should cover the scope of work, main findings, and key conclusions. Add any important considerations. Body paragraphs should be in 11-12-point font. No indentations. Add a line space between paragraphs.

Add a reflection on your learning.

Include a paragraph to acknowledge the assistance of key people.

Close on a courteous note.

Sincerely,

Your name, role

Encl.

---

**Figure 2. Letter of Transmittal Template**

Stu Dent  
19-1742 Yonge St.  
Toronto, Ontario  
M2J 5R6

September 4, 20XX

Mr. Bineshii Coutenay, Co-op Coordinator  
Seneca College  
1750 Finch Avenue, East  
Toronto, M2J 2X5

Dear Mr. Coutenay:

Please accept the accompanying work term report entitled "Sensor Imaging Tool for Autonomous Vehicles."

This report is the result of work completed during an experiential learning unit at the Tesla Institute. During my second work term as a Seneca College student, I was engaged to assist in field sensor data collection, and the subsequent computer processing of this data. In the course of this work, I developed innovative colour sensor imaging software in an effort to process the data more efficiently and accurately. It is this new method of processing the data which is the subject of this report.

Through the course of the term, I was given the opportunity to learn much about electronics repair, digital signal processing, computerized data acquisition, and sensors. I feel that this knowledge will be helpful in future work terms, and in my career.

I would like to thank my manager, Jane Cordent, for her patience and good judgment, as well as the technologists at Tesla Institute who were always willing to help.

Sincerely,

**Stu Dent**

Stu Dent

Encl.

Figure 3. Sample Letter of Transmittal. Adapted from University of Victoria, n.d/2017.

### 3.1.3 Table of Contents and List of Figures

The table of contents is a navigation tool that allows the reader to find the location of a specific section or illustration in the report. It is constructed from the major headings used in the report. Note that the appendices are listed at the end of the Table of Contents and that a List of Tables and Figures follows. **Do not list the heading of "Table of Contents" as an item in the table itself.** This error is often created by word processing software that creates the table of contents from the header contents of each section. See Figure 4 for a sample; also see the Table of Contents for this document. MS Word includes features that allow you to auto-create the Table of Contents and List of Figures. Use heading and caption styles to enable this function.

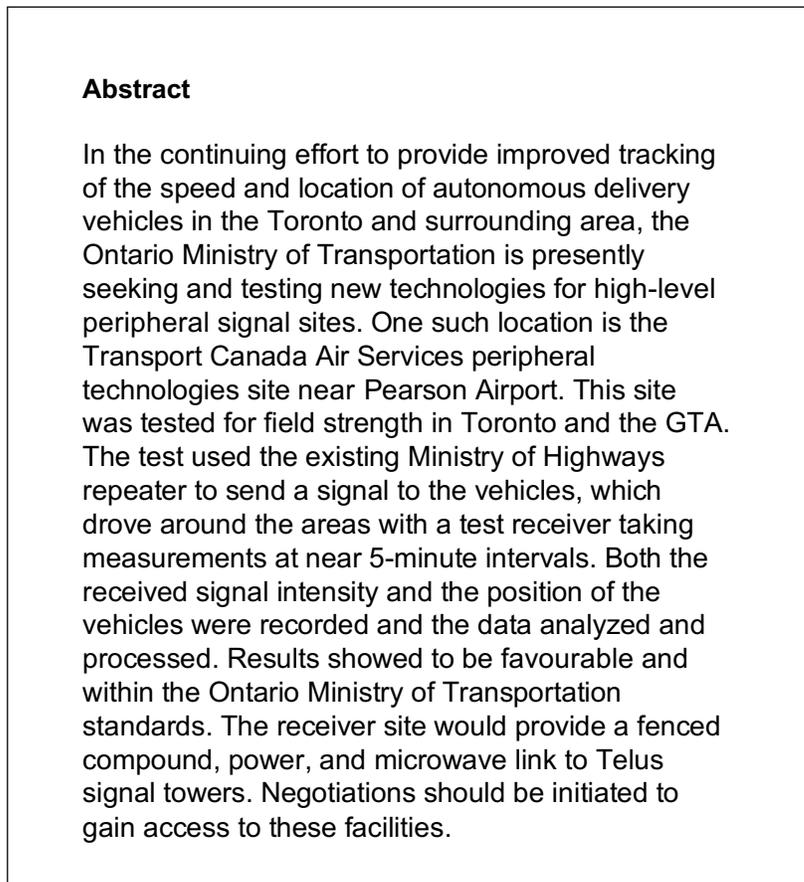
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Figure 4. Sample Table of Contents (University of Victoria, n.d./2017)

Below your table of contents, include a list of figures and tables used in your report. See the List of Figures and Tables on page i of this document for an example.

### **3.1.3 Abstract**

Technical reports typically contain an abstract that summarizes the content of the report in a specific manner. The abstract appears on a separate page after the Table of Contents and List of Figures and Tables. In brief, the abstract consists of the following: a statement of the problem or opportunity, a purpose statement, a description of methods, an overview of findings, and the conclusion. The abstract is written after the main report has been completed. Items in the main report such as tables, figures, or sections, are not referred to in the abstract. The abstract is normally presented centered on its own page, and is less than one page in length, see Figure 5.



**Figure 5. Sample Abstract. Adapted from University of Victoria, n.d/2017.**

### **3.1.4 Glossary (optional)**

If your report contains acronyms, symbols, or terms that may not be familiar to your audience, include a glossary explaining these terms. If included, the glossary precedes the introduction to provide an easy reference for the reader.

The glossary defines specialized technical terminology including acronyms, listing them in alphabetical order, while the list of symbols defines the mathematical symbols used in the report. Any mathematical symbols or constants included in the report should be defined since most mathematical usage is not standardized. Glossaries and lists of symbols are useful when a

large number of terms must be introduced in the report (as a guideline, if you are defining more than five terms, a glossary should be used). Refer to the Sample Glossary (Figure 6) for the recommended format. Note: if you are using published definitions, you must indicate your sources.

## Glossary

Balanced Power	A three-phase system with all the voltages equal in magnitude but offset by $120^\circ$ between phases
Bus	Junction of two or more elements such as lines, loads, generators, or transformers.
Carbon Block	Protection device used on telecommunications cable pairs. If a cable pair conductor comes in contact with an abnormally high voltage, the conductor is short circuited to ground by the protector.
Carson's	A traditionally used expression for calculating mutual impedance between two conductors.
Fault	A power system condition when a phase conductor contacts another conductor or ground. The contact may be direct or through an arc.
Four-wire	A three-phase power system with a neutral conductor.
GPR	Ground potential rise. The difference in voltage of a grounding point to remote ground.
Looped	A power system where lines form a multipath network between supply and loads.
Radial	A power system where lines radiate out from a supply to a load. Any load has only one supply path.
Residual	The net sum of the currents in all phase and neutral conductors at some point in a power system.
Three-wire	A three-phase power system with no neutral conductor.

Figure 6. Sample Glossary (University of Victoria, n.d./2017)

## **3.2 Main Body**

The main body of your report includes everything from the Introduction to the References.

### **3.2.1 Introduction**

The introduction introduces the report to the reader by

- introducing the subject to be discussed and its importance,
- including an overview of the report topics,
- describing the scope of the report, and
- offering background information describing circumstances leading to the report.

If the report addresses a specific problem, your introduction will provide a thorough problem definition that the described solution(s) must address.

**Introductions should never be longer than the discussion.** If a significant amount of background information is required, consider creating a separate section for it or moving some of the material to the appendices.

The introductory material may be presented in several subsections to cover the scope of the report and should provide the background information necessary for understanding the rest of the report. In the sample Table of Contents (see Figure 4), sections 2 and 3 consist of the background information.

### **3.2.2 Discussion**

The discussion is the foundation of a report. It presents evidence in the form of referenced facts, data, test results, and analysis upon which the conclusions are based. A well-written discussion flows logically from concept to concept to lead the reader to the appropriate conclusions.

The discussion may contain several sections if several concepts are presented. In the sample Table of Contents, the discussion is contained in sections 4 through 5.5.

### **3.2.3 Conclusions**

Conclusions are the results derived from the evidence provided in the discussion. **No new material is presented in the conclusion.**

When presenting more than one conclusion, state the main conclusion first followed by the others in the order of decreasing importance, to ensure the maximum impact on the reader.

### **3.2.4 Recommendations**

Recommendations are an outline of what further work needs to be done based solidly on the information you previously presented in the report. They have the greatest impact when written using action verbs. **Again, do not introduce new material or concepts here.**

### **3.2.5 References**

Any information quoted, paraphrased, or summarized must be cited and documented using APA Style (APA, 2020; Seneca College Libraries, 2021). Citing references assists the reader by indicating where further information can be found and lends credibility to the analysis within your report. Please note: Wikipedia *may* be an accurate reference; double check the information you obtain from this source. "Definition by popular consensus" does not constitute a suitable reference. Instead, use original published source material from reputable established sources.

Any material introduced in the report that is not your original work should be followed by an in-text citation in parentheses, (your in-text citation), which cross-references to an item fully documented in the list of references. The material cited may be tables or figures from other sources, equations which you did not derive, technical specifications or facts used to support your claims.

#### **3.2.5.1 In-text Citations**

When citing a reference within the report using the APA style, the corresponding reference number may be included in parentheses in the following places:

- at the end of a sentence just before the period; e.g., (last name, year)
- directly after the reference to the author or source (last name, year), if necessary to avoid confusion over attribution of source material
- after figure captions and after table titles; e.g., Figure 1: Network Design (last name, year)
- after the appendix title if the entire appendix is copied from another source; e.g., Appendix A (last name, year)
- at the right-hand margin beside a mathematical equation

#### **3.2.5.2 Making Your Reference List**

Note that each listed reference includes the following information:

- the name(s) of the author(s): last name, followed by initial(s)
- the title of the document
  - For book and journal titles, the title is italicized
  - For articles in journals, the title of the article is capitalized only
  - For web pages, the page title is italicized and the site name is capitalized only
- other information
  - For books, the publisher's name and location, and the publication year
  - For articles, the name of the journal, the volume number and the date of issue
  - For reports, the report number, the name and location of the issuer and the date of issue
  - For web documents, all the above and the url
  - Add the page number, when applicable

For other types of documents, social media, or internet sites, see the Seneca College Libraries

[APA Citation Guide](#) (2021) or the [APA Style references examples](#).

In the list of references, list the cited references in alphabetical order using the approved APA conventions. See Figure 7 and the Resources and References section of this guide for formatting examples. Be sure to take note of the punctuation.

Note: If information has been unethically used in your documents, you could be subject to academic integrity penalties. For information on actions to avoid, see Appendix A.

**Cited References**

Barsan, N., Koziej, D., & Weimar, U. (2007). Metal oxide-based gas sensor research: How to? *Sensors and Actuators B: Chemical*, 121(1), pp. 18-35. <https://www.sciencedirect.com/science/article/abs/pii/S0925400506006204>

Harnack, A. & Kleppinger, G. (1996 Sum). Beyond the MLA Handbook: Documenting Electronic Sources on the Internet. *Kairos*, [Online serial] 1(2). <http://english.ttu.edu.kairos/1.2/>

IBM ASTAP. (1973). *Program Reference Manual*. IBM Corp.

Phoenix Group. (1985). Flight Simulator Study Results. *Phys. Rev. Lett.*, 26, p. 1231.

Rosenblum, H. (1988). Private communication.

Smith, J.A. (1981). *An Introduction to Engineering*. New York: Doubleday.

Smith, J. A. (1984). A preliminary analysis of internal waves in the Strait of Georgia. UVic Electrical Engineering Report, pp. 84-3, 5.

Trubnikov, B. A. & Kudryartsev, V. S. (1958). Plasma radiation in a magnetic field. In *Proc. 2ns U. N. Cong. Peaceful uses of Atomic Energy* (Geneva), 31, p. 93.

Figure 7. Sample Reference Page. Adapted from University of Victoria, n.d/2017.

### **3.3 Back Matter**

Back Matter includes anything attached to the end of our report following the References. These are usually called appendices.

#### **3.3.1 Appendices (optional)**

Any data supplementary to the main ideas of the report may be placed in an appendix. The information may be a description of the processes involved, analytical proceedings, computer printouts, technical specifications, mathematical equations, data, code, or excerpts from other reports. Any type of information may be placed in an appendix if it is relevant but does not fit in the discussion, provided it is referred to in the body of the report (see Appendix A for an example).

An appendix refers to one set of information. If several sets of information are to be included, several appendices may be used. Appendices should be referred to by letter (Appendix A, Appendix B, etc.).

Following the examples posted by The Ontario Association of Certified Engineering Technicians and Technologists (OACETT), page numbers in appendices continue from the report. In the Table of Contents appendices are listed at the bottom with page reference (OACETT, n.d.)

## **4. Overall Format**

Your document must be written in a formal report format that optimizes readability. Use document design features such as headings, lists, figures, tables, appropriate margins, fonts and passive space to create a logically organized, visually appealing document.

### **4.1 Page Numbering**

Except for the title page and letter of transmittal, all pages are numbered. Sections of the document, however, have different numbering systems:

- *Front Matter:* Sections preceding the introduction (called front matter, and including the Table of Contents, List of Tables and Figures, Summary, and the Glossary) are numbered using lower case roman numerals; i.e., i, ii, iii, iv, etc.
- *The Main Body:* The body of the report, starting with the Introduction should be numbered using Arabic numerals (1, 2, 3, etc.), with the Introduction starting on page 1. Page numbers may be placed at the top middle, top right-hand corner, bottom middle or bottom right-hand corner of the page. The location of the page numbers should be the same throughout the report to avoid confusion.
- *Back Matter:* Appendices are numbered in continuation from the body of the report.

In order to create different page numbering options, you must create separate sections in your document, using the Insert → Section Break function. To do this easily, wait until your document is almost completed then paginate.

## 4.2 Headings

Every section in the report has a heading. A heading should briefly and concretely describe the section that follows and should be followed by a paragraph rather than another heading (avoid stacked headings). Section and sub-section headings are used in the Table of Contents to assist the reader in locating specific material in the report; therefore, the more specifically and concretely the headings are worded, the more helpful they are to the reader.

First level headings must be left justified; sub-headings can be either left-justified or indented for each layer. Using **Styles** in the MS Word program allows you to auto-generate a Table of Contents from the headings, and list of figures and tables from your captions. Headings and subheadings should be easily distinguishable (using font size, bold, italics or indentation) to indicate the level and sub-level of each section.

Headings may be numbered using Arabic numerals (do not use an alpha-numeric system). See the sample table of contents (Figure 4) or the table of contents of this document for an overview of heading numbering systems. An illustration of possible heading numbering and formatting systems is outlined below. If you have few headings, you may choose to not number them. Whichever way you format the headings, the key is consistency to avoid confusing the reader.

MS Word heading styles will automatically indent the headings for various levels. However, you can keep all headings left justified with the margin, and use a variety of font and size options to clearly distinguish one level from another (Figure 8).

**1. Level One Heading (biggest, boldest font)**

**2. Level One Heading**

**2.1 Level Two Heading (slightly smaller font, still bold)**

*2.1.1 Level Three Heading (same size as body font, but may be bold and/or italicized)*

*2.1.2 Level Three*

Figure 8. Sample Headings; left justified example

You can also use indentation to indicate sub-levels of headings. If you choose this, make sure your text does not end up squished to one side of the page (Figure 9).

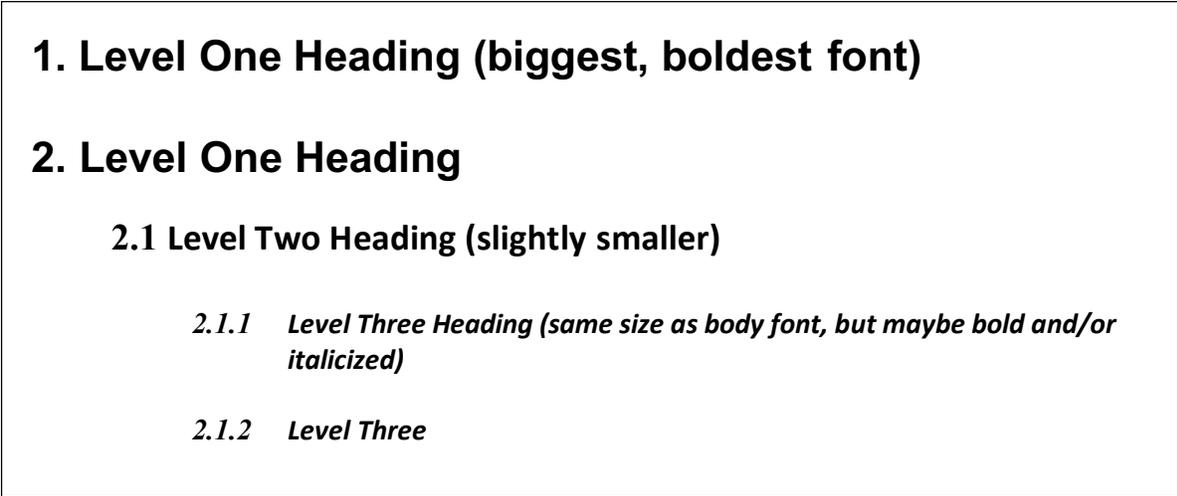


Figure 9. Sample Headings; indented example

**4.3 Capitalization**

When writing reports, cover letters and resumes, follow the accepted rules of capitalization. The three most relevant rules are:

- **Capitalize** official names and titles of government agencies, companies, departments, divisions and organizations, such as
  - Air Pollution Control Division
  - Crown Publications
  - Keen Engineering Ltd.
  - Province of British Columbia
  
- **Do not capitalize** words such as government, federal agency, department, division, administration, group, company, research and development, engineering, and manufacturing when they stand alone. They are only capitalized when they are part of an official name (Table 1).

Table 1. Capitalization Groups Examples

Wrong	Correct
This is a problem for Research and Development, not Engineering.	This is a problem for research and development, not engineering.
	This is a problem for the Research and Development Department, not the Engineering Department.
Jane Doe is the head of her Division in the Company.	Jane Doe is the head of her division in the company.
	Jane Doe is the head of the Standards Division in ABC Engineering.

- **Do not capitalize words for emphasis.** Avoid capitalizing words to make them stand out - use *italics* or **bold** instead. Random capitalization at best detracts from the appearance of your work, and at worst creates the impression that you don't understand basic writing rules (Table 2).

**Table 2. Capitalization Emphasis Examples**

Wrong	Correct
Advertising and publicity can enhance the Value Package of your product.	Advertising and publicity can enhance the value package of your product.
	Advertising and publicity can enhance the <i>value package</i> of your product.
Burning is a Chemical Reaction in which Oxygen atoms combine with the atoms of the Substance being burned.	Burning is a chemical reaction in which oxygen atoms combine with the atoms of the substance being burned.
	Burning is a <i>chemical reaction</i> in which <b>oxygen</b> atoms combine with the atoms of the substance being burned.

This information was adapted from *The Elements of Technical Writing*, Gary Blake and Robert W. Bly, MacMillan, pages 59-60. Also see the APA guidelines: [Use of Italics](#).

#### 4.4 Tables and Figures

Tables and figures illustrate information in an easily understood format. Figures refer to any visual element – graphs, charts, diagrams, photos, etc. – that are not tables. They may be included in the main sections of the report, or if they contain supplemental material, they may be contained in an appendix. Try to ensure that figures and tables are not broken over two pages. Tables that require a full page should be placed in an appendix.

If the table or figure that you present in your report was not created by you, but comes from another source, you must include a reference for the original source in your caption as in this example:

Figure 1. Network Design (Grant, 2019)

You must ensure that all figures and tables represent data accurately and ethically, and they that they do not distort data to create bias.

##### 4.4.1 Labeling Tables and Figures

Use the following conventions to assist the reader in understanding your graphics:

- Tables and figures are numbered separately. e.g., Table 1, Table 2, Figure 1, Figure 2. . .
- Label figures and tables with numbers and **descriptive captions** that clearly indicate what the figure or table illustrates without having to read anything else on the page.

- Always place table labels **above** the table.
- **In technical writing**, figure labels are generally placed **below** the figures (see the examples posted by OACETT, n.d.). Whichever location you choose to place them (below, or above the figures following the APA style), do so consistently throughout your document.

There are two systems for numbering figures and tables within your document:

**Simple Consecutive Numbering:** All figures and tables are numbered consecutively (Figure 1, Figure 2, Figure 3, Table 1, Table 2, Table 3, etc.) throughout the document regardless of which section they are in.

**Section-based Numbering:** Within each section, figures and tables may be numbered sequentially through each section (e.g., Table 1.1 refers to the first table in section 1, Table 2.4 refers to the fourth table in section 2).

If a large number of illustrations are presented, the latter option is the better choice. This can become confusing, however, when using sub-sections.

#### **4.4.2 Referring to Tables and Figures in Your Text**

Any figures or tables you use in your document must be discussed in your text. Use the following guidelines when discussing and referring to tables and figures:

- Place the table/figure close to where it is first referred to in the text (preferably just below the paragraph in which it is mentioned).
- Refer to tables and figures in your text by their numbers, not their placement in the text. E.g., “See Figure 9 for a detailed schematic” (**not** “see the figure below”); “The test results are summarized in Table 1.”
- Wherever possible, try to orient illustrations in the same direction as the main text.

Below is a sample text from the discussion section of a report that refers to a table (University of Victoria, n.d./2017):

Both designs were subjected to the same testing regime in order to compare their effectiveness. The tests evaluated how quickly they completed the task, the accuracy of their targeting, their reliability in repeat tests, their efficient use of energy, and the overall safety of the design (ability to avoid causing damage while completing the task). Each criterion was assigned a weight, and the designs were given a score from 0-5 based on how well it met each objective (e.g., a faster speed garners a higher score). Table 3 shows the resulting scores. The highest score possible is 50.

**Table 3. Sample Weighted Objectives Table**

Objectives	Weight	Measurement Parameter	Design 1			Design 2		
			Magnitude	Score	Value	Magnitude	Score	Value
Speed	3	m/sec	.3 m/s	3	9	.5 m/s	4	12
Accuracy	2	cm from goal	10 cm	2	4	4 cm	4	8
Reliability	2	# of times/5	5/5 times	5	10	4/5 times	4	8
Efficiency	2	Watts	.5 watts	5	10	1.5 watts	3	6
Safety	1	Damage done	None	5	5	None	5	5
<b>Overall Utility</b>					<b>38</b>			<b>39</b>

Tests resulted in similar scores (38 and 39) for both designs; however, they have significantly different strengths and weakness. *[Your comparative analysis will elaborate on these differences and point out important aspects to consider.]*

## 5. Resources and References

Need additional help? Refer to these resources:

American Psychological Association (APA). (2020). *APA Style and Grammar Guidelines*. APA Style. <https://apastyle.apa.org/>

American Psychological Association (APA). (2020). *Use of Italics*. APA Style. <https://apastyle.apa.org/style-grammar-guidelines/italics-quotations/italics>

Blake, G. & Bly, Robert W. (1993). *Elements of Technical Writing*. New York: MacMillan.

Carey, M., McFadden Lanyi, M., Longo, D., Radzinski, E., Rouiller, S., & Wilde, E. (2014). *Developing Quality Technical Communication: A Handbook for Writers and Editors*. IBM Press. [Online]. Available: [https://senecacollege.primo.exlibrisgroup.com/permalink/01SENC\\_INST/17thfn4/alma997143864403226](https://senecacollege.primo.exlibrisgroup.com/permalink/01SENC_INST/17thfn4/alma997143864403226)

Last, S. & Potter, R. L. (2019/2021). *Technical Writing Essentials: Introduction to Professional Communications in the Technical Fields*. OER. BCcampus. CC BY 4.0. <https://pressbooks.bccampus.ca/technicalwriting/> Adapted as *Technical Writing Essentials: Communicating in the Technical Fields* by Robin L. Potter (2021). CC BY 4.0.

OACETT. (n.d.). *I need to complete a technology report*. <http://www.oacett.org/Membership/Certify/TR>

Searles, G.J. & Moran, K.M. (2012). *Workplace Communications: The Basics. Canadian Edition*. Toronto: Pearson.

Seneca College. (n.d.). *Academic Integrity: Resources for Students*. <http://open2.senecac.on.ca/sites/academic-integrity/for-students/>

Seneca College. (n.d.). *Policy on Academic Integrity*. <https://www.senecacollege.ca/about/policies/academic-integrity-policy.html>

Seneca College Libraries. (2021, January 20). *APA Citation Guide (APA 7th Edition): Welcome* <https://library.senecacollege.ca/apa>

Seneca College Libraries. (2021, January 20). *Writing and Communicating Technical Information*. <https://library.senecacollege.ca/technical>

Tebeaux, E. & Dragga, S. (2014). *The Essentials of Technical Communication, 3rd Edition*. Oxford University Press.

Turabian, K. L., Booth, W.C., Colomb, G.G. & Williams, J.M. (2013). *A Manual for Writers of Research Papers, Theses, and Dissertations: Chicago Style for Students and Researchers*. Chicago: University of Chicago Press.

University of Victoria. (n.d./2017). *Engineering Work Term Report Guide: A Guide to Content, Style and Format Requirements for University of Victoria Engineering Students Writing Co-op Work Term Reports*. Updated by Suzan Last, October 2017.

## Appendix A – Important Information on Academic Integrity Offences

The college reserves the right to use SafeAssign plagiarism detection software for any submitted report. Students should be prepared to provide their reference/bibliographical material upon request. The Seneca College Policy on Academic Integrity (n.d.) contains the following information:

### ***Plagiarism***

A student commits plagiarism when:

1. Submitting as your own any material done, in a whole or part, by someone else.
2. Submitting any work copied, in whole or in part, from another source, such as the Internet, journal articles or books, without reference to the original author or source.
3. Allowing your essay, report, assignment or computer files to be submitted by another student.
4. Allowing another student to do your laboratory or field work for you.
5. Submitting as your own, in whole or part, any work that is currently or has been previously graded in another course, without the prior permission of the professor, even if you were the original author.
6. Submitting work with misleading references or data that do not reflect the sources you actually used.
7. In group and/or team work, submitting work in which you know or ought reasonably to have known that one or more components contain and/or involve an Academic Integrity offence.

### ***Falsifying Materials Subject to Academic Evaluation***

Falsifying materials subject to academic evaluation includes, but is not limited to:

1. Changing grades or answers on an assignment for the purpose of re-grading.
2. Falsifying, misrepresenting or forging an academic record or any other supporting documentation, medical or otherwise, for the purpose of gaining any type of academic advantage.
3. Forging a signature on, or changing an academic work of another student.
4. Deliberately changing or damaging an academic work of another student.

### ***Cheating***

Cheating involves the following actions:

1. Obtaining an exam or test, in whole or in part, in advance of its administration, without the permission of the professor.
2. Buying or otherwise obtaining reports, essays, assignments, or other academic work, for submission as your own.
3. Selling or otherwise assisting with the purchase and/or sale of reports, essays, assignments or any other academic work for submission.

Penalties for academic integrity offenses range from a simple reprimand, to a failing grade for the course, to permanent suspension from the program. See Seneca's Academic Integrity Policy for more information: <https://www.senecacollege.ca/about/policies/academic-integrity-policy.html>