Standards and Template for Research Papers

by

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# Abstract

Every paper should come with an abstract. In this paper, I recommend how students should use Word to construct documents (e.g., reports, papers, dissertations, essays) and how comments will be made on work submitted for consideration by a supervisor. Finally, I provide some comments concerning rudimentary grammar. Students are asked to follow these guidelines if they intend to improve their writing abilities. However, it is important to realize that this is a ‘living’ document, which means it is continually changing. Further, it is important to recognize that citations in the document may not appear in the references, and vice versa, since they are used for illustrative purposes only.

**Key words**: rudimentary grammar; usage of style in Word; expected writing standards

**JEL categories**: <These are economic literature research areas, e.g., Q54, Q23, P28>

# Introduction

The objective here is to illustrate how one might write a research paper, report and/or dissertation. First, the intent is to provide a template for preparing papers and, second, to suggest an efficient means by which a reader can provide detailed comments on draft work. To do so, I provide generic comments and associated codes.

I begin by discussing technical issues related to the physical use of Word and the current template. This is followed by a section describing how to write a paper. In this section, examples of grammar, structure and style are provided. The conclusions ensue.

# Setting up a Paper: A Template

The majority of people who use Word know little about it. As with almost any other document, there should rarely be more than one space or one hard return (<enter>) between words, paragraphs, tables, graphs, et cetera in a document. Every single paragraph should be defined in the ‘Styles’ section of the ‘Home’ header in Word. This includes an embedded graph or picture, the entries in a table, headings, and so on. For example, the current paragraph is defined as ‘Normal’ in the styles section, while the heading above this paragraph is defined as ‘Heading 1’. Likewise, the title of this document is defined as ‘Title’ and the material under the title (author name and affiliation) is defined as ‘Center’. You can override the ‘6 pt’ offset before and after any paragraph defined as ‘Center’ by using <shift><enter> rather than <enter>. Thus, after ‘by’ in the second line of this document, an <enter> was used but after the author name <shift><enter> was employed.

The current document can, therefore, be used as a template for preparing reports, research papers, dissertations, et cetera. The ‘Normal’ style is usually the foundation for the other styles, so changes to ‘Normal’ could potentially change the other styles. For example, if you go to the style menu while your cursor is in this point •, you will see that the ‘Normal’ style is highlighted in the style bar. Using your mouse, if you ‘right click’ on the ‘Normal’ style you can modify the style. If you now remove the paragraph indent, it is unlikely any of the other styles are modified. However, if you make other adjustments (e.g., single space and then create space before and after each paragraph), you might well see that other styles are impacted.

The main styles used in this template are ‘Normal’, ‘Noindent’ if no indentation is needed (e.g., after an equation), various types of headings (plus ‘Title’), ‘footnote’ for footnotes, ‘Tablehead’ for table headings (which appear above a table), ‘table’ for table content and table footnotes (although you will need to change the style for the last footnote under the table so that it does not try to keep the table and its content with the next paragraph), ‘Caption’ for figures or graphs (where the description appears under the figure itself and the graph/figure is style ‘Center’), ‘reference’ for the material in the reference or bibliography section, ‘Quote’ for quotes exceeding three lines, and ‘equation’ for equations. You can modify these styles if you like. For example, you might include equation numbers in the ‘equation’ style. Examples of figures and tables are provided below.

The underlying rule remains. You should rarely use more than one additional space or more than one hard return. In this regard, the rule after a period that ends a sentence is to use only a single space and not two spaces before beginning the next sentence or paragraph. This contrasts with the convention of hitting the space bar twice after a period, which was only the rule when typewriters were employed; with word processing software and publishing directly from the document provided by an author, the rule is one space.

It is very important to pay attention to the styles or else you can get into trouble. For example, if you copy from another Word document into the current document a paragraph that is single spaced, it will automatically be double spaced even if you wish otherwise. It is simply bad practice artificially to single-space the paragraph (if that is what you want) because it will always revert to the spacing of the inherent style (‘Normal’ in this case) when it gets the chance. Try it: With your cursor somewhere in this paragraph simultaneously strike <ctr><1> (control key and the numeric one). This will single space the paragraph. Then click on the ‘Normal’ style in the ‘Styles’ tab of the ‘Home’ tab. It will revert back to a double-spaced paragraph. Always ensure that you pay attention to how the styles are set!!

## Examples of Figures and Tables

In the figure, notice that the graph has been copied from Excel using the ‘paste special’ option and choosing ‘picture (enhanced metafile)’. I create graphs in Excel and figures in PowerPoint and copy them into Word in the same way as that indicated in the preceding sentence. This enables one to resize figures or graphs simply using the mouse. Tables can be created directly in Word or in Excel. From Excel, I try to copy tables directly into Word, reformatting them as required. If the table is too large, I then copy it and use paste special and the picture option to embed it in Word (it then acts as a figure and can be resized, but the fonts are not quite correct). Never create links to graphs or tables in Excel as this greatly and unnecessarily increases the size of your Word document.



Figure 1: Example of Sales of Voluntary Carbon Offsets by Origin, 2010

Table 1: Model parameters

|  |  |  |
| --- | --- | --- |
| Parameter | Assigned value | Description |
| *T* | 200 years | Length of the planning horizon |
| *T* | 10 years | Time step |
| *P*logs | $75/m³ | Net price of logs (determined from all product prices)  |
| *p*C | $10/tCO2 | Shadow price of carbon dioxide |
| *ctruck* | $4.50/m3 | Trucking cost per m3 of logs fixed for each time perioda |
| *clog* | {$22, $42} | Logging cost per m3 varies by slope category (<40o, >40o)  |
| *c1admin* | $8/ha | Fixed administration & site development cost per harvested hab |
| *c2admin* | $14/ha | Overhead & road maintenance costb |
| *czsilv* | {$1522, $1605} | Fixed silvicultural cost per harvested ha by 2 major BEC zones |
| Δ | 4% | Discount rate for monetary values; *β*=1/(1+δ) |
| *\** | {2%, 4%} | Discount rate for physical carbon; used to find duration factor  |
| ε1 | 0.54 | Proportion of merchantable volume converted to lumber |
| ε2ε3 | 0.250.21 | Proportion of merchantable volume converted to chipsProportion of merchantable volume converted to fuel use |
| *d1**d2**d3**d4* | 0.020.030.600.00841 | Decay rate for softwood lumberDecay rate for chips and pulpwoodDecay rate of biomass for fuelDecay rate of dead organic matter |
| *Ξ* | {0.25, 1.5} tC/m3 | Emissions avoided when wood substitutes for other productsc |
|  |  |  |
|  | 150 m3 ha-1 | Minimum volume before site can be harvested  |

Notes:

a Assumes a cycle time of 1 to 2 hours.

b Two types of fixed administrative costs are identified (see Thomae 2005).

c Avoided emissions vary as indicated in Hennigar et al. (2008).

Source: Adapted from 3GreenTree Ecosystem Services & Ecosystem Restoration Associates (2011, pp.133, 137), Thomae (2005), Niquidet et al. (2012), and Ingerson (2011).

Notice that, in Table 1, the notes are at the bottom of the table and not at the bottom of the page. This is the correct way of putting footnotes into a table – use letters and not numbers or other symbols (although some journals require symbols). It is not always necessary to have a separate line ‘Notes’ and sometimes the source of the table can be left out, included as a note (especially if different parts of the table are from different sources), or placed above the table notes.

## Citation and Referencing

Citing and then referencing works is a very important aspect of writing essays, theses and dissertations. The correct means of citing someone’s work depends on context. If I want to cite an idea that I find compelling and is attributable to a particular author or group of collaborators, I might do it one of the following ways. “Kennedy (1953) pointed out that economists are better able to capture market rents than engineers.” I could also have written: “According to Kennedy (1953, pp.5-9), economists are better able to capture market rents than engineers.” Or, I could simple write: “Economists are better able to capture market rents than engineers” (Kennedy 1953, pp.5-9). In the latter case, I more clearly make the statement mine, while still attributing it to Kennedy.

There is more going on in the foregoing paragraph. First, note that I added page numbers in the latter two citations, and note that I used a comma between the date and page numbers but not between the name and date. This is a matter of style, but mine is not to use a comma between the date and page number, use a comma between citations to the same author or group of authors (e.g., Kennedy 1953, 1955), and semi-colon between authors (e.g., Kennedy 1953; Marx et al. 1862). Also note the use of ‘et al.’ (with a period at the end and not italicized). Second, I am able to do without page numbers if the citation is to an article as opposed to a book.

It is important to include all citations in the reference section of the manuscript (see section 6 below). A corollary is to ensure that no references are included that do not appear in the text, a footnote, or a table or figure note. More information about footnotes and citations is provided in section 4 below.

#  Writing a Paper

The comments identified here relate to matters of style, structure and logic. They identify common problems that need to be addressed without necessarily identifying what is specifically required. A very general and very important issue relates to copy editing. Copy editing refers to the basics of writing: grammar, punctuation, citations, footnotes and other all of the other presentational issues. All material that you submit must meet a basic standard of copy editing.

This means it is your responsibility to ensure that your writing meets the required standard of copy editing. Here are some requirements and a few suggestions, after which the specific sets of comments are laid out.

* Requirement: drafts should be double-spaced and follow the style of the current template.
* Never submit a first draft; be sure that you have gone over the paper several times before you impose it upon someone else. If you are not confident about your own editing skills then enlist some help.
* This standard applies for any research paper, including an Honor’s thesis, MA essay or thesis, research proposal or PhD dissertation.
* So that you have a sense of what is ultimately required, carefully go over all parts of a published journal article. From how it introduces the topic, how it reviews the literature (see below), how it presents equations, math and results, how it presents tables and figures, how it cites published work, and the many other tiny details that are standard and expected in the discipline. Do not focus on (or get bogged down with) the content of the paper; the point of the exercise is to see how a paper is presented. You will notice interesting things when you do this; for example,
	+ Sections are numbered sequentially and titled sensibly.
	+ A common font type and size is used consistently throughout.
	+ Footnotes are (typically) kept to a minimum.
	+ Appendices are referenced correctly and presented neatly and intelligently.
	+ Tables and figures are, for the most part, `stand alone', meaning a reader does not have to dive into the text to figure out what information is being presented in the table.
	+ References and citations are consistently presented using the same method throughout the paper (imagine that). Moreover, references cited in the text are included in the list of references.
	+ Literature reviews, when included, do not go on endlessly cataloguing indiscriminately every paper (good or bad) published in the area. Rather, they review the literature, identifying key themes and conclusions among the important papers in the literature.
	+ Equations are kept to a minimum, with only those relevant to the discussion presented.
	+ If material is presented in a figure, table or equation . . . that material is discussed in the text.
	+ If you chose an empirical paper, there should be sufficient information to replicate the empirical work.
* Note that for a thesis, essay, proposal or dissertation, it will often be the case that a more extensive literature review will be required than what is permitted in a journal article. Nonetheless, the nature of your literature review should still be similar to those in a journal article – just longer.
* When you become a professional working economist, writing for a living, you will not have the benefit of someone poring over your drafts. It is important to become proficient in critically reading and proofing your own work.
* Again, when you are writing for a living you will often work with others. Nobody likes a co-author that is hopeless at writing.

## Grammatical Issues

### Spelling and Grammar in Word

Remarkably many students fail to take advantage of Word’s built-in spelling and grammar functions. Words that are incorrectly spelled are underlined in red. Thus, if you see anything underlined in red, you need to check if it is spelled correctly. There is no excuse for spelling errors!

A similar point can be made about grammatical errors. Word underlines grammatical errors in green. Therefore, if you see something underlined in green, it is likely indicative of a grammatical error. Unless you have a very good reason for ignoring the fact that something is underlined in green, you should make every effort to rewrite the sentence in question so that Word removes the green underlining. This does not, however, suggest that what is not underlined in green is grammatically correct! It may simply indicate that the robot existing within the computer does not think there is an error.

### Rudimentary Grammar

Students make many grammatical errors, and this section is not meant to address this issue. Here only a few errors are brought to the reader’s attention; indeed, some of the errors are more matters of personal style rather than a grammatical error per se. I identify just some of the common ones that, for whatever reason, bother me the most.

* Many italicize ‘et al.’, ‘per se’, ‘et cetera’, ‘etc.’ (I use etc. only in parentheses), and other Latin, Greek and other non-English words. However, I prefer students do not italicize as this can sometimes create problems with formatting as documents are prepared for publication. If italics are required by a publisher then it can be done just prior to submission for publication or even after the manuscript has gone through the review process.
* There are issues regarding when to use ‘which’ versus ‘that’; in many cases, ‘that’ should be used rather than ‘which’. For example, in the sentence, “One important aspect which we investigate relates to …,” the ‘which’ should be replaced with ‘that’. The correct version is: “One important aspect that we investigate relates to … .” A correct way to use ‘which’ is illustrated in this sentence: “Bosetti et al. (2011) deal with only legitimate (internationally approved) carbon offsets, which also have this same impact.” The sentence also illustrates the proper way to cite work and the use of ‘et al.’ Also see the next point.
* The current sentence, which I made up, illustrates the use of commas to separate thoughts. The statement, ‘which I made up’, needs to be separated by commas on *both* sides – notice the correct use of italics here and the use of a dash. The dash is separated by spaces on either side and is automatically created in Word as one writes. Thus, it would be wrong to write this sentence as: “The current sentence which I made up, illustrates the use of commas to separate thoughts.” Indeed, it would be more appropriate to write: “The current sentence that I made up illustrates the use of commas to separate thoughts;” that is, replace ‘which’ with ‘that’ and remove the comma.
* Some words or expressions always use hyphens, but in other cases the use of a hyphen in a multi-word expression depends on usage. Thus, bi-level is preferred to bilevel (which Word underlines in red). However, an expression such as ‘business as usual’ is not hyphenated if it is the object in the sentence (e.g., “it is just business as usual”); it is hyphenated when it is a descriptor or adjective (e.g., “the business-as-usual level of emissions”).
* A list is separated by commas, but no comma is necessary between the second-to-last item in the list and the last one. An example is the following list: a, b, c, d and e. A comma is required, however, if the list is compounded as illustrated by: Paul, Peter, George and his sister, and Gregory.
* The most-often seen error concerns what is known as a split infinitive. The expression “to fully accept” is grammatically incorrect. It should be “fully to accept”. Take especial care when it comes to these kinds of errors.

### Equations

Equations can be embedded in the text or set apart (and perhaps numbered) as the following example illustrates:

NPV = , (9)

where *p* refers to the (shadow) price of harvest *Ht* at any time *t* ($/m3), *Ct* if the fixed cost of harvest at *t*, *γ* is the per unit energy cost ($/m3), *Et* is the energy used during harvest, and *β* = 1/(1+*δ*) is the discount factor with *δ* being the discount rate. Notice that, even though this does not make complete sense, the variables and parameters in the equation are explained. More importantly, however, is the fact that the equation is written using Word’s old equation editor. Avoid using an equation editor to the greatest extent possible!!

### Using a Footnote Instead of a Reference

In some cases, a footnote is more appropriate than a citation and its reference in the ‘References’ section, although this is a matter of style and different publishers have different rules on this. Here is an example of a footnote reference:

“We then employed the BC Ministry of Forests and Range’s growth and yield prediction model, TIPSY, to predict yield of managed and natural stands.[[1]](#footnote-2) TIPSY is used in timber supply analyses, but can also be used to evaluate silvicultural treatments and address other stand-level planning options. In the current application, it was used to determine the evolution of the forest for each of the various sites in the GIS model, whether the site was harvested or not” (van Kooten et al. 2012, p.5).

Notice that the footnote number appears outside the sentence-ending period. Also notice that I used the ‘Quote’ style, because I am quoting more than three lines from something else I have written. Notice how I cite what is quoted – the quote is enclosed in quotation marks, the ending period comes after the citation to the quote, and there is a comma between the year and page number.

### Using Contractions

Students should avoid using contractions in professional writing. Thus, words such as ‘it’s’ and ‘can’t’ should be avoided; instead, one should write ‘it is’ and ‘cannot’. Also, be sure to use ‘its’ instead of ‘it’s’ to denote possessive.

### Further abbreviations

Abbreviations are often used for phrases such as ‘for example’, ‘in other words’, and ‘visualize’. When you use these terms in a text, they should be fully spelled out; when used in a parenthesis, the proper way is to use ‘e.g.,’. Thus, in the sentence “I want to illustrate proper use of grammar, for example, as it relates to abbreviations”, one should fully spell out ‘for example’. However, if it is used parenthetically then it need not be completely spelled out. Thus, the foregoing sentence is written as: “I want to illustrate proper use of grammar (e.g., as it relates to abbreviations) – that is, I want you to know how to write.” Notice how I introduced the ‘that is, …’. I could just as well have replaced ‘that is’ with ‘in other words’. Had I put this in parenthesis, I would have written “… (i.e., I want you to know how to write).”

One can also use the abbreviation ‘viz.’ within parenthesis to get the reader to think about something else as an illustration. For example, I might want to illustrate something by getting triggering recollection or using a metaphor. An example might be the following: “Not all renewable energy is carbon neutral (viz., burning of biomass).” Notice the comma in the parenthesis.

# Discussion and Conclusions

There is much more to writing a paper, especially organization and flow from one section to another. I recognize that many students whose first language is not English will have difficulty writing in English, because English has many nuances. However, this is not an excuse for writing poorly argued and poorly organized papers. One of my foreign students once pointed out that a student who is unable to organize and argue a paper in a professional way in the English language is also highly unlikely to be able to do so in their first language. Therefore, good researchers will be able to write a well-thought out paper in English despite their mother tongue.

In the final section of this document, I provide a list of references. Please use this to provide guidance in how you cite and reference papers.

Finally, let me remind you that the current document is a template that you should use, perhaps with modifications to the styles, when writing papers.

# References:

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1. TIPSY refers to the Table Interpolation Program for Stand Yields, but there is also a Variable Density Yield Prediction system for natural stands. Further information can be found at http://www.for.gov.bc.ca/hre/gymodels/tipsy/assets/intro.htm. [↑](#footnote-ref-2)