

Writing and Reviewing Documents

You are required to write the following documents in this course:

- 1) A description of your GPS data collection and results.
- 2) A technical description of a data collection effort, and summary data.
- 3) A short report on your findings.

Each ESPM4295W student will be required to write and review a document written by another person or group. Briefly, you need to evaluate the quality of your own work for revision, and quality of another's document and suggest improvements.

You will be graded on all your written documents, and on your review and suggested revisions of a document. Much of your course grade is based on the quality of the writing and review.

Many technical documents are poorly written. Too often, complicated and jargon-filled documents result in frustration, content being ignored, and lost time. We have a great need to write clearly.

How can we be better writers?

The most important goals are:

- Engage your reader
- Write clearly
- Write in a visually appealing style

The next several pages summarize some of the best techniques to achieve these three goals.

Engage Your Readers

You engage readers by speaking to them directly and clearly and by organizing your message around their interests. Do this by:

Organize to meet your reader's needs

People read documents to get answers. They want to know how to do something or what happens if they don't do something. Organize your document to respond to these concerns. Frequently this means describing events as they occur--you start a program, you open a menu, you specify a data set and select options, and the program produces a result.

Use "you" and other pronouns to speak directly to readers

"You" reinforces the message that the document is intended for your reader in a way that "he," "she," or "they" cannot. More than any other single technique, using "you" pulls readers into your document and makes it relevant to them. Using "we" to refer to your agency makes your sentences shorter and your document more accessible readers.

Use the active voice

Active voice makes it clear who is supposed to do what. It eliminates ambiguity about responsibilities. Not: "It must be done." But, "You [or someone else] must do it."

Write Clearly

A jargon-laden style does not clearly convey important information. You can reduce confusion or misinterpretation for all readers without sacrificing the technical integrity of your writing. If there is a new term, specific method, or piece of equipment, describe it the first time you mention it. Be careful to define abbreviations the first time you use them (e.g., we used a LCGU (least common geographic unit) size of 10 square meters...).

Use short sentences most of the time

Express only one idea in each sentence. Long, complicated sentences often mean that you aren't clear about what you want to say. Shorter sentences show clear thinking. Shorter sentences are also better for conveying complex information; they break the information up into smaller, easier-to-process units. Vary your sentence structure to avoid choppiness, but don't revert to tangled multi-clause sentences.

Write to one person, not to a group

Use singular nouns, pronouns, and verbs to direct your writing to one individual reader. This prevents confusion about whether a requirement applies to readers acting individually or in groups.

Use the simplest tense you can

Using present tense avoids the clutter of compound verbs and clearly conveys what is standard practice. Use past tense as appropriate, but be consistent.

Use "must" to convey requirements

Use "must" for obligation, "may" for permission, and "should" for preference. Use "may not" to convey prohibitions. Avoid the ambiguous "shall." When was the last time you heard "shall" in everyday conversation? If you must include advisory material, put it in brackets.

Place words carefully

There are several ways you can reduce ambiguity--

- Keep subjects and objects close to their verbs.

- Put conditionals such as “only” or “always” and other modifiers next to the words they modify. Write “you are required to provide only the following,” not “you are only required to provide the following.”
- Put long conditions after the main clause. Write “reproject the data to NAD83 if your data are originally in NAD27 or some other datum”, not “if your data are in NAD27 or some other datum then reproject your data to NAD83.”

Avoid words and constructions that cause confusion

Common sources of confusion include--

- Undefined or overused abbreviations and acronyms
- Two different terms used for the same thing (mouse, pointer, input device, puck-- choose one)
- Giving an obscure technical or legal meaning to a word commonly understood to mean something different (using “vertex” to include nodes)
- Legal, technical, and “fashionable,” but confusing, jargon
- Strings of nouns forming complex constructions (paper map digitizer quality procedures)
- Pronouns that don't clearly refer to specific nouns

Write in a visually appealing style

We want our documents to help readers get information, comply with requirements, and apply for benefits with the minimum possible burden. Visually appealing documents are far easier to understand than more traditional styles.

Technical documents are often dense and confusing. Replace blocks of text with headings, tables, and more white space. You will help your reader by making the main points readily apparent and grouping related items together. Use a clear and uncrowded presentation and your readers will be more likely to understand what you want to convey.

Use informative headings

Headings attract your readers' attention to important information. They help readers find their way through a document and locate important points.

Write short sections

Short sections break up the material into easily understood segments and allow you to

introduce a little white space. Short sections look easier to read and understand. Long sections can appear difficult and forbidding, even before someone tries to read them.

Include only one issue in each designated paragraph

Limiting each paragraph to one issue gives the document a clean appearance and contributes to the impression that it is easy to read and understand. By presenting only one issue in each designated paragraph, you can use informative headings that reflect the entire issue covered by the paragraph.

Reviewing a Technical Document

You will receive a copy of another group or person's technical document. You will review and suggest revisions for the document. You must mark directly on the document, and provide a typewritten summary of suggestions for improvement. You have five days to perform this review (Thursday until start of class Tuesday). You must bring an original and a copy of the marked draft and the review. One will be returned to authors, one to the instructor. In reviewing the technical manual, you need to evaluate how well it meets the requirements of good writing described above? Specifically,

- Is it appropriate for the audience?
- Is it clearly written? Are the sentences short and direct, are paragraphs focused and well organized?
- Does the document have an appropriate structure, meaning are all necessary parts included, and organized with headings in an appropriate manner?
- Is the document technically correct? Does the process work as described?
- If applicable, are the graphics, tables, or other visual elements sufficient (are more needed) or necessary (some graphics or tables should be deleted)?
- Does the document have proper spelling, punctuation, and grammar? Are tenses and voices consistent?

You need to evaluate the document based on these criteria. YOU DO NOT assign a grade to the technical document you review. I will be grading each draft and the final technical document from each group. In addition, I will be specifically grading the quality of your review.

Most Frequent Errors in Writing

Omitting commas when needed with subordinate clauses, independent clauses, or dependent clauses.

Example:

In order to plan our work we met as a group and divided tasks among group members.

Should be:

In order to plan our work, we met as a group and divided the tasks among group members.

Placing dependent or subordinate clauses at the start of a sentence. This should be done sparingly.

Example:

To reduce errors, we used a snapping tolerance.

Should (most of the time) be:

We used a snapping tolerance to reduce errors.

Data are always plural.

Example:

The GPS data was collected in October.

Should be:

The GPS data were collected in October.

Long sentences should be split into several sentences.

Example:

The rectification process required, as input, a user parameter file to control the rectification process, a digital elevation model gridded to user specified bounds, projection, zone, datum and X-Y units, a scanned digital image file of the aerial photograph, a DEM covering the same area as the scanned image, ground X-Y-Z point values (control input) and their conjugate photo coordinates in the camera coordinate system, and measurements of individual camera fiducial marks in the digitized image.

Could be:

The rectification process required many inputs. These include a parameter file to control the process, a scanned digital image, and a digital elevation model (DEM). The DEM was gridded to user specified bounds, projection, zone, datum and X-Y units. Control input (ground X-Y-Z values) and conjugate photo coordinates were also required, as were camera fiducial measurements.

You should not mix past, present, or future tense in a sentence. Try to avoid it in paragraphs and documents.

Example:

There were many positional errors in our data, therefore our analysis contains many errors.

Should be:

There were many positional errors in our data, therefore our analysis contained many errors.

Keep in Mind:

Verbs HAS to agree with their subjects.

Prepositions are not words to end sentences with.

And don't start a sentence with a conjunction.

It is wrong to ever split an infinitive.

Avoid clichés like the plague. (They're old hat)

Also, always avoid annoying alliteration.

Be more or less specific.

Parenthetical remarks (however relevant) are (usually) unnecessary.

Also too, never, ever use repetitive redundancies.

No sentence fragments.

Contractions aren't necessary and shouldn't be used.

Foreign words and phrases are not apropos.

Do not be redundant; do not use more words than necessary; it's highly superfluous.

One should NEVER generalize.

Comparisons are as bad as clichés.

Eschew ampersands & abbreviations, etc.

One-word sentences? Eliminate.

Analogies in writing are like feathers on a snake.

The passive voice is to be ignored.

Eliminate commas, that are, not necessary. Parenthetical words however should be enclosed in commas.

Never use a big word when a diminutive one would suffice.

Use words correctly, irregardless of how others use them.

Understatement is always the absolute best way to put forth earth-shaking ideas.

If you've heard it once, you've heard it a thousand times: Resist hyperbole; not one writer in a million can use it correctly.

Puns are for children, not groan readers.

Go around the barn at high noon to avoid colloquialisms.

Even IF a mixed metaphor sings, it should be derailed.

Who needs rhetorical questions?

Exaggeration is a billion times worse than understatement.

And the last one...

Proofread carefully to see if you any words out.