**Writing Style for Engineering Reports**
***Steps in Report Writing***

## 1. PLANNING

Determine purpose and audience, gather information, choose form of report and method of presenting information - e.g., graphs, charts, photographs

Create a ***list of points*** that you need to make e.g., main points of problem, objectives, costs, etc..

Decide on ***structure*** and how to organize information. Are appendices required? Where will supporting data be placed? What are major headings?

What is technical ***background of readers*** (executive, technician, layperson)? What information are they primarily interested in?

## 2. WRITING

Start with your collection of ***rough notes and sketches***, not a blank sheet. Two drafts are often required - the first is a skeleton for organization. The second draft fills in the gaps and expands where necessary.

***Organization*** - The report can be arranged in several different ways:

(1) follow ***chronology*** (unfolds from beginning to end, cause/effect patterns),

(2) division by ***spatial arrangement*** (for complex physical systems), or,

(3) ***logical partitioning*** (break up problem into subsystems related by function, etc.).

***Structure*** - Use headings and blocking for clarity. Complex topics reduced to manageable “chunks” of information. Headings make transitions easier to follow, enforce logical flow of ideas, used as signposts to direct the reader through the report (can refer to table of contents). Headings impose structure on the report.

Use upper case, bolding and underline to show relative importance (level) of the headings and number them.

Don’t overdo it! Too many divisions fragment the report, make it difficult for logic to flow. e.g., __

## 1. MAIN HEADING

### 1.1 Sub-heading

#### 1.1.1 Sub-sub-heading

(Don't go more than 3 layers deep)

Each section must have a unique central idea. That idea should be stated in the first sentence of a new section, or at least in the first paragraph. Strive for unity, coherence and emphasis.

***Spacing*** - The use of spaces (vertical and horizontal) and highlighting (bolding, italics) focus the reader's attention and regulate the flow of information. These also create "breaks" for the reader, allow easy return to where reading left off. *Read your own report to see how it flows.*

***Language and Style*** - Use simple and direct language. Scientific writing is informative, factual, objective, indirectly persuasive. It ***is not meant*** to be emotive, personal, subjective or entertaining.

Watch for errors in **syntax** (the position of words in a sentence) and **semantics** (indirect relation between a word and its meaning). Spellcheckers won't usually find these errors for you.

Search always to ***minimize ambiguity*** - write short, clear sentences with commonly used words. In scientific writing, long sentences with dependent clauses are seldom used.

***Abbreviations and Acronyms*** - must be explained the first time they are encountered in text. This is true even if a separate nomenclature section is used.

"Global positioning system (GPS) technology is used in surveying."

***Grammar*** - Consult texts if you are in doubt of a particular construction. Generally speaking, if you read a sentence aloud it should sound right and it should be easy to follow its meaning.

***Writing numbers*** - quantitative vs aggregate expressions

" a board 6 metres long " vs " an eight-man canoe"
" an angle of 40 degrees" vs " three degrees of movement"

***Always spell out a number beginning a sentence.***

***Punctuation***

Use **commas** sparingly, like pepper on your food. They should improve the dish, not overwhelm it!

- sometimes commas are needed to mark a change between two ideas in one sentence.

- Insert a comma where you would normally place a pause if you were speaking the sentence out loud. (We don't use long sentences, so we don't need many commas.)

- Commas are also used to separate multiple adjectives or nouns in a list.

A ***colon*** (:) is used to introduce a list of ideas separated by commas.

"We offer a variety of fast food choices: hamburgers, hotdogs, fried chicken and pizza."

***Semi-colons*** (;) are used to separate listed items when multiple commas are already required to separate descriptors

"Our food choices include: lip-smacking, crispy-coated, moist chicken; deep-fried, golden, crunchy fries; oven-baked, deep-dish pizza; and garden-fresh, zesty, bean salad."

Use a ***hyphen*** for combined modifiers and compound adjectives:

"a piston type pump" vs "a piston-type pump",

"a deep green sea" vs "a deep-green sea"

" a dry vacuum tank" vs "a dry-vacuum tank"

Also used for a "one-thought" modifier such as "living hand-to-mouth"

**Not used** for chemical terms e.g., "a sodium chloride solution"

What punctuation should be used for the following?

" devil may care man to man fashion plate statement "

"large capacity hydrogen cooled synchronous condensors"

A ***suspension hyphen*** is used when several compound adjectives use the same base word, as:

"Use only first- and second-grade materials in construction..."

"Code calls for both single- and three- phase breakers"

***Exclamation marks*** (!) and ***question marks*** (?) are rarely seen in engineering reports because we do not pose questions, and writing is not intended to be emotive.

Correct these sentences:
"He gestured with his other arm after pointing toward the panel rapidly running from the room"

"Zinc oxide is substituted for calcium oxide and selenium and charcoal are added."

"This way is easy that is difficult."

"The supervisor himself an engineer was not in his office but his assistant a student apprentice gave me the approval."

"Driving his motorcycle down the street he veered into a parked car that was suddenly in front of him when he saw the children playing in it."

**3. REFLECTING**

Allow enough time to put the report aside, at least for overnight, and then re-read it.

Have someone else read it for a different perspective.

**4. REVISING**

Proofread carefully! Have someone unconnected to the work read the manuscript - they will find errors that you are programmed to overlook. *Read*

*from back to front.*

Look for ordered presentation that unfolds logically without requiring backtracking and re-reading. Ideas should flow easily.

Don't be afraid to re-write sections, add or delete information as required. Text editing packages make this step very easy.