**Lesson 4 - Clear, Concise, Writing-**

**DOWNLOAD, SAVE AND REVIEW CAREFULLY**

**Correct punctuation can save a person’s life:**

Let’s eat grandpa. (Oh no!)

Let’s eat, grandpa. (Whew!)

**EDD 104, Engineering Communications II**

One focus of EDD 104 Engineering Communications II is to provide students with the tools to improve their research and writing skills using an engineering conceptual design project.

Students must be able to produce professional documents for many audiences, including international and academic audience. Types of documents that will need to be styled professionally include: emails, memos, letters, reports, proposals, processes and directions. Students also will develop their presentation skills for a variety of audiences supported by documentation through presentation posters and/or slides.

A chief problem Instructors see in student’s writing each year involves clarity and conciseness that is, writing that clearly expresses the idea or point in the most direct way. In the business world there is a focus in writing on essentials since most people do not have time to reread writing that is not clear. If the reader must sift through “filler” words and phrases to get to the meaning, they will usually stop reading.

**Clear, concise writing involves recognizing and eliminating redundancies and unnecessary wording**. Learning to write using concise language is a valuable skill in the professional world. In Lecture you will hear from a panel of engineers from local businesses and industry about the skills they look for when hiring new graduates in engineering. At the top of their list are Communication Skills, especially the ability to communicate ideas through writing, and clearly presenting those ideas to different audiences. Engineering Communications I and II is designed to provide you with the tools you need to begin this process. You should continue to hone these skills throughout your college career as an engineering student and later in your professional career.

This handout condenses many strategies into a guide that can easily be used by student writers to improve their writing. For these strategies to work, you must practice them in all writing, not just in this Course, but in all of your courses and communications. Continually applying these techniques will lead to improved writing habits.

***The Paramedic Method: A lesson in Writing Concisely*** was developed specifically for engineers:

“Professional writers understand the need for clear, concise prose. An industry standard for helping workplace writers achieve user-centered, persuasive, and clear prose is the Paramedic Method. When you use the Paramedic Method, you will reduce your word count by eliminating unnecessary words. The Paramedic Method also helps you activate your sentences by eliminating passive voice and redundancies. The Paramedic Method is an easy to learn, systematic way to make your sentences more persuasive and more user-centered.”

**Paramedic Method Terminology**

* **Preposition:** A preposition is any word or group of words that relates a noun or pronoun to another word in a sentence and usually denotes some relationship in space or time.

Some common prepositions: about, after, among, behind, down up, from, of, off, past, before, underneath, with, above, during, beyond, in, since, until, within, according to, along, at beside, by except, into, on, through, up, without, across, amid, before, besides, concerning, for, like, over toward, upon.

* **“To be” or “is” verbs:** These words describe the “states of being” of people or things in a sentence. Examples: is, was, has been, will be, are, becomes.
* **The main verb—describes the “action” of the sentence:** The action of the sentence describes what is being done by whom to what.
  + For example, in the following sentence, the action (verb) would be “placed:”

The team placed the gyroscope laterally on the ground.

* **The subject:** The subject of the sentence is the person or thing **doing the action**.

“the team” is the subject in: “The **team** placed the gyroscope laterally.”

* **Wind-ups:** Wind-ups are phrases, usually prepositional phrases, which set up an idea expressed in a sentence. Some wind-ups are necessary or important to provide the meaning of the sentences they introduce, but in most others they just make sentences wordy or unnecessarily complex. Whether a wind-up is necessary or not depends on the context.

Examples of wind-ups:

* According to the results...
* In the next part of the lab...
* In order to understand X concept...
* When I was asked to look into this problem I started right away by…

GET TO THE POINT without unnecessary preface or background.

* **Redundancies:** redundancies are patterns or words that are repeated in a sentence. Using redundancies leads to awkward and lengthy sentences, which can make your sentences and your ideas hard to understand.

The following sentence contains redundancies (was conducted, with):

1. "The experiment was conducted at 1330 GMT and was conducted with an increased basal rate with a double bolus."

Eliminating redundancies reduces word count and makes sentences easier to understand and read:

1. "The experiment was conducted at 1330 GMT using an increased basal rate and a double bolus."

* **Active and passive voice:** Active Voice is considered stronger and clearer. Active voice is a structure of writing that emphasizes the doer and uses active verbs rather than forms of the verb "to be" (see above). Here is an example of a sentence written in active voice:

"Morgan Latour attended the baseball game." (active—the subject is doing the action)

"The baseball game was attended by Morgan Latour." (passive—the subject here is the baseball game, but it is not doing the action, it is being acted upon by Latour)

KEY METHOD OF DETERMINING IF ACTIVE OR PASSIVE:

The sentence above is constructed in the **subject-verb-object pattern**. Note that the doer (Morgan) precedes the verb (went).

Passive voice does not emphasize the doer and may even use past tense. Passive voice is usually used in scientific writing because the emphasis is placed on what was done rather than on who did it.

Here is an example of the same sentence from above that is written in passive voice:

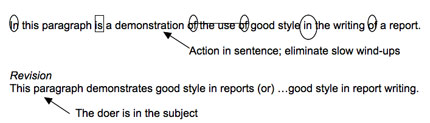
In some cases, the doer (subject-actor) is not even mentioned in scientific writing:

"The experiment was conducted at 1330 GMT." (WHO CONDUCTED IT? They are not in the sentence).

**The Steps for the Paramedic Method are as follows:**

1. Circle the prepositions (of, in, about, for, onto, into)
2. Draw a box around the "is" verb forms
3. Ask, "Where's the action?"
4. Change the "action" into the simplest appropriate verb (avoid compound/2 word verbs)
5. Move the doer into the subject (Who's kicking whom?—is the boy kicking the ball or the ball kicking the boy?)
6. Eliminate any unnecessary slow wind-ups
7. Eliminate any redundancies.

**Example:**



**Exercise in Applying the Paramedic Method:**

Apply the following instructions to the Original Sentences below and then check against the Revised Sentences on the next page. **(your sentences may be different which is fine as long as you have applied the techniques and improved their conciseness and clarity.)**

1. Circle the prepositions. Eliminate any unnecessary prepositions.
2. Identify any references to the researchers (the doer).
3. Replace references to the researchers with a passive construction that emphasizes the experiment (what was done).
4. Eliminate any unnecessary slow wind-ups.
5. Eliminate any redundancies.

**Practice Sentences:**

**Examples of Paramedic Method applied to the sentences above:**

* **Original:** In the following experiment, we used the feline cell line, W9, to evaluate cell growth in the presence of the growth factor.
* **Original:** During the procedure, we cultured the cells for 48 hours in media that we modified with 78, 80, 90, and 110 ng/mL BMP.
* **Original:** At 48 hours, we harvested cells from the cell culture dish and counted. We used a hemocytometer.

**Original and Revised Sentences:**

1. **Original:** In the following experiment, we used the feline cell line, W9, to evaluate cell growth in the presence of the growth factor.

**Revised:** The feline cell line W9 was used to evaluate cell growth in the presence of growth factor.

1. **Original:** During the procedure, we cultured the cells for 48 hours in media that we modified with 78, 80, 90, and 110 ng/mL BMP.

**Revised:** Cells were cultured for 48 hours in media modified with 78, 80, 90, and 110 ng/mL BMP.

1. **Original:** At 48 hours, we harvested cells from the cell culture dish and counted. We used a hemocytometer.

**Revised:** At 48 hours, cells were harvested from the culture dish and counted using a hemocytometer.

**I challenge you to get the word count reduced to at least the number in parentheses without losing the meaning of the sentence.** (Revised sentences can be found at the end of this document.)

1. The point I wish to make is that the employees working at this company are in need of a much better manager of their money. (10)
2. It is widely known that the engineers at Sandia Labs have become active participants in the Search and Rescue operations in most years. (16)
3. After reviewing the results of your previous research, and in light of the relevant information found within the context of the study, there is ample evidence for making important, significant changes to our operating procedures. (25)

Source: <https://owl.english.purdue.edu/owl/resource/721/1/>

**Another Good Source to help with writing:** [**http://www.grammar-monster.com/lessons/verbs.htm**](http://www.grammar-monster.com/lessons/verbs.htm)

**SAMPLE EDITED SENTENCES:**

* 1. Employees at this company need a better money manager. (Original word count: 26. New word count: 10).
  2. In recent years, engineers at Sandia Labs have participated in the Search and Rescue operations. (Original word count: 24. New word count: 16).
  3. After reviewing the results of your research, and within the context of the study, we find evidence supporting significant changes in our operating procedures. (Original word count: 36. New word count: 25).

**A Few More Techniques to use in your writing:**

**Make negative constructions positive:**

Not all = most, many, some;

Not many = few;

Not late = punctual;

Not negative = positive;

Not possible = impossible;

Less depressed =happier;

Not healthy = unhealthy;

Not forget = remember;

Less tired = energized

**Good writing matters—no matter the profession**

No one is born knowing how to write. The people who learn it faster tend to be those who like to read. But everyone can learn how to improve their writing with a few tricks of the trade.

One such trick—and one of my favorites—was emphasized by William Strunk Jr., a famous Cornell University professor whose little handbook, *The Elements of Style*, is as instructive today as it was when it was first published—over a hundred years ago in 1918.

**“Omit needless words!”**

But what are the needless words? Which ones to omit? Using the *Chicago Manual of Style* (another great resource for those who want to understand how language works), below is a list of words and phrases that writers you would be well advised to avoid.

**Here’s a starter list of needless words**: There are, of course, many more. These are just a few of the worst offenders:

* **in actual fact.** Redundant. Try *actually* instead, or simply omit.
* **at the time that; at the time when.** Use the plain and simple *when* instead.
* **in the affirmative; in the negative.** These are slightly pompous ways of saying *yes* and *no*.
* **at the present time; at this time; at present.** These are turgid substitutes for *now*, *today*, *currently*, or even *nowadays*.
* **due to the fact that.** Use *because* instead.
* **inasmuch as.** *Because* or *since* is almost always a better choice.
* **in excess of.** Try replacing this verbose phrase with *more than* or *over*.
* **in regard to.** Try a single-word substitute instead: *about*, *regarding*, *concerning*.
* **literally.** This word means “actually; without exaggeration.” Omit it if you’re using it loosely as an intensifier, as in *they were literally glued to their seats* (unless glue had in fact been applied).
* **presently.** This word is ambiguous. Write *now* or *soon*, whichever you really mean.
* **previous to.** Make it *before*.
* **prior to.** Make it *before* or *until*.
* **question whether; question of whether; question as to whether.** The first phrasing is the best, the second is next best, and the third is to be avoided.
* **in the process of.** You can almost always delete this phrase without affecting the meaning.
* **subsequently.** Try *later*.
* **subsequent to.** Make it *after*.
* **whether or not.** Generally, use whether alone. The *or not* is necessary only when you mean to convey the idea of *regardless of whether* (*we’ll finish on time whether or not it rains*).

**Practice Sentences: INSTRUCTIONS (THIS IS PART OF YOUR ASSIGNMENT due next class)**

* **Each student is to open a blank page, put your name, section and team # at top. Then, write each of the original sentences below and edit them using the techniques set forth in this hand-out. You should have an original and a revised version.**
* **In addition, take 3 sentences from your draft paper that need work and revise them. Do the same thing: write the original and the revised versions below.**
* **THERE NEEDS TO BE 8 original and revised sentences.**
* **Save this document and upload to Team’s File Exchange by the start of next class.**

1. He dropped out of school on account of the fact that it was necessary for him to help support his family.

2. It is expected that the new schedule will be announced by the bus company within the next few days.

3. There are many ways in which a student who is interested in meeting foreign students may come to know one.

4. It is very unusual to find someone who has never told a deliberate lie on purpose.

5. Trouble is caused when people disobey rules that have been established for the safety of all.