

Writing a thesis paper

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Lecture Content

1 – Importance of language

2 – Structure of your
thesis/language

3 – Building blocks of
language

Importance of language

Language Skills

correlates to

Language Footprint

- The way in which you relay your message
- Spoken Word
- Written Word

Engineers must be able to communicate in a convincing, effective, credible manner both in speaking and in writing with different actors who have different technical knowledge.

Importance of language

- CARELESS, CONFUSING LANGUAGE CAUSES MISUNDERSTANDINGS AND UNDERMINES CREDIBILITY
- POOR STRUCTURE SHOWS LACK OF ABILITY TO FORMULATE IDEAS IN A COHESIVE MANNER

Importance of language

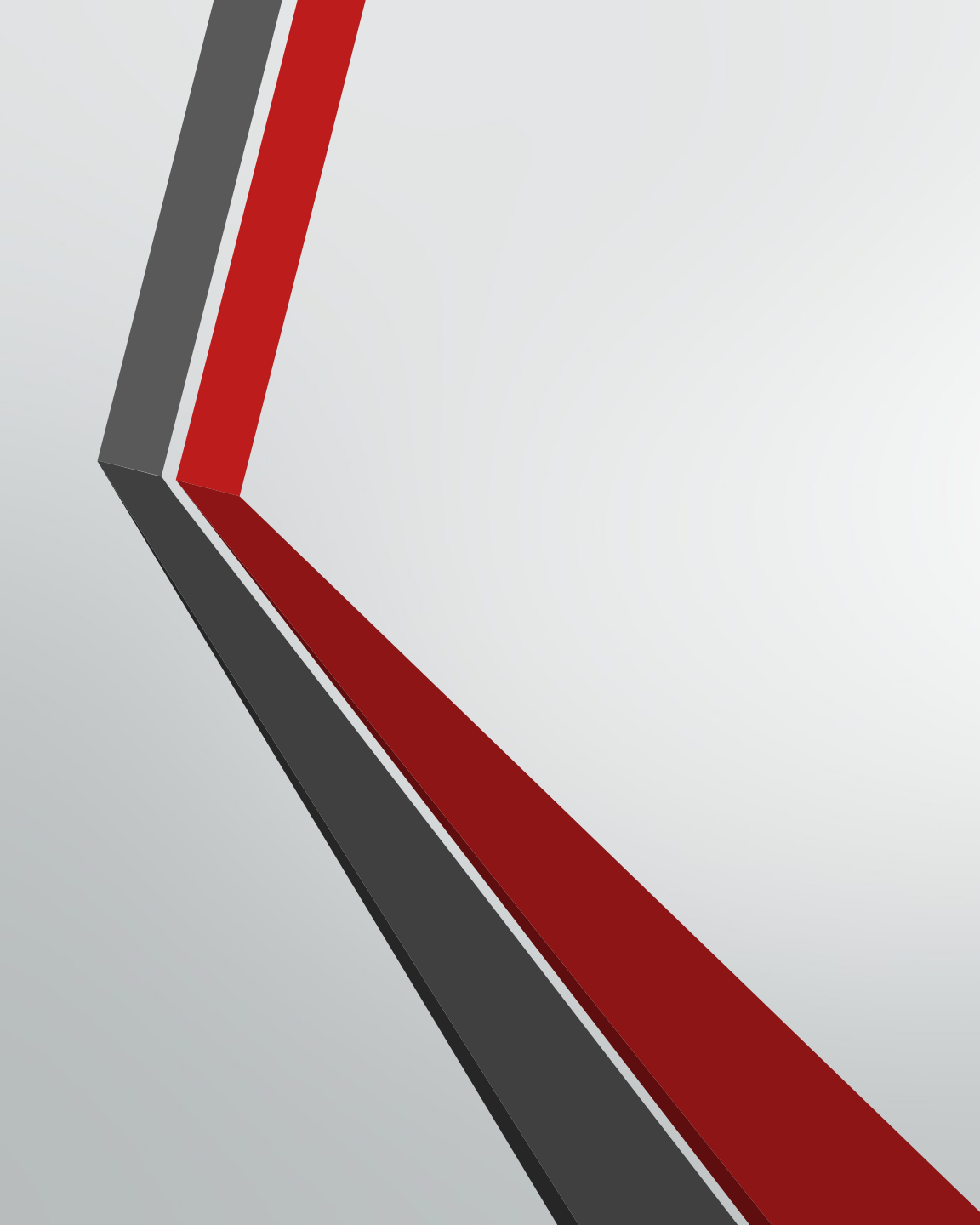


1. Who is reading this?
2. What presumptions are you making?
3. What terms will you have to define?
4. How will the language drive your message?



Importance of language

- What jargon will they know? Not know?
- How can I entice them to read further?
- Communicate effectively : WRITE WITH YOUR READERS IN MIND
- Which English should I use? BE/AE
- The global language is English – *the better your skills are, the more employable you are!*



Style and Tone in Academic Writing

Tone

- Refers to the writer's voice: scholarly, bombastic, ambiguous, rhetorical?
- Refers to the perception of a work: bias, attitude, personality
- Refers to the register of a work: formal or informal

Style: Formal or Informal

- When I got my students to think science was wicked cool, their test scores went thru the roof! When I asked for their spin on their improvement, they just said the test felt like a piece of cake to them after I had implemented the new curriculum changes.
- When I was able to **engage** my students and **get them interested** in science, their test scores **improved significantly**. I asked a few students **why they thought the scores had improved**, and they **admitted** that the test seemed **much easier** because of the new curriculum.
- *** Avoid:** slang, sms spellings, colloquialisms, cliches, contractions

Wordiness and formality

Unnecessary doubling of words:

- mutual agreement (agreement)
- consensus of opinion (*consensus*)
- future prospects (*prospects*)

- **Formulaic phrases:**
- For the purpose of (*to*)
- In view of the fact that (*because*)
- At this point in time (*now*)

Practice:

- Researchers looked at the way strain builds up around a fault.
- Researchers **observed** the way strain **accumulates** around a fault.
- The implementation of Computer-Integrated-Manufacturing (CIM) has brought about some serious problems.
- The implementation of Computer-Integrated-Manufacturing (CIM) has **created** some serious problems.

Objective!

- Scholarly work is work based on fact. (This is why you do research)
- Evidence is required for the assertions made.
- State your points without bias or emotion. (heartbreaking results, a sickening discovery)
- Avoid grand generalizations. (always, never)

Reminders:

- Style and Tone matters therefore:
- be objective
- be direct
- be formal
- be concise

STANDARD STRUCTURE OF A THESIS



INTRODUCTION :
Motivation, Aims, Research
Questions, Delimitations



METHODS



RESULTS



DISCUSSION



CONCLUSIONS

INTRODUCTION

- Establish the importance of the topic
- Inform the reader of previous work done on this topic
- Inform the reader of gaps in previous work
- Clearly state your aim and research questions
- Discuss the scope of your work: limitations /delimitations

**The Introduction section is in the present simple tense.*

Introduction: sets the general tone of your thesis

- It should make a good impression and convince the reader why the theme is important and why your approach is relevant.
- It might be historical in nature
- It might refer to previous research
- It might focus on a specific previous text
- It might refer to a previous or contemporary event
- It may outline a specific problem: a case study or an example

Introduction: scope

- Defining the scope of a study, i.e., its area (theme, field) and the amount of information to be included.
- Narrow the scope so as to clarify and zero in on your thesis question/s
- The research question/s can be formulated as one main question with (a few) more specific sub-questions, or in the form of a hypothesis that will be tested.

Structure and Tenses

- Introduction – present simple tense
- Methods (title can vary) – past simple tense
- Findings/ Results – past simple
- Discussion and conclusion – present simple

Expressing Time - Tenses

Present simple tense: Introduction section

Things that happen regularly

Things that are always true

Things that are permanent

E.g. GPUs are efficient for certain types of operations.

E.g. Many mobile phone providers offer a wide variety of chatting services.

PRESENT TENSES

SIMPLE PRESENT



Ikea makes furniture.

I study English.

PRESENT CONTINUOUS



Ikea is making a new product.

I am studying right now.

* Steer away from continuous tenses

Past tenses

SIMPLE PAST

- I studied last night.



PAST CONTINUOUS

- I was studying when they arrived.



LANGUAGE

- Structure



A SENTENCE: A group of words that are put together in such a way that a complete thought has been expressed.



Can be in the form of a statement, question, command etc.



Grammatical rules apply:



subject and verb (object)



subject and predicate

Sentence Structures

1. The two essential parts of a sentence are the **subject** and the **predicate** (verb portion). The **subject** refers to the topic being discussed while the **verb** conveys the action or state of being expressed in the sentence. All clauses must contain both a subject and a verb. (simple sentence)

Note -Phrases, on the other hand, lack one or both a subject and a verb, so they need to relate to or modify other parts of the sentence.

2. Compound Sentences -have **two** or more main clauses joined by coordinating conjunctions (CC) such as *and, but, for, yet, nor, or, so*. You can also connect them using punctuation such as a semi-colon or a colon. By **coordinating** the ideas, you are giving them roughly equal weight and importance.

Simple Sentences

Independent Clause	Phrases
1. The engineers stood <u>around the table</u>	<u>looking at the schematics</u> <u>for the machine.</u>
(subject) (verb) (<u>phrase</u>)	(<u>phrase</u>) (<u>phrase</u>)

Sentence 1 is a simple sentence. It has one clause, with one **subject** (The engineers) and one verb (stood). These are followed by 3 modifying phrases (“around the table” “looking at the schematics” and “for the machine”).

Compound Sentences

- A compound sentence coordinates two ideas, **and** each idea is given roughly equal weight.
- The two ideas are closely related, **so** you don't want to separate them with a period.
- The two clauses make up part of the same idea; **thus**, they should be part of the same sentence.
- The two clauses may express a parallel idea; they might also have a parallel structure.
- You must remember to include the coordinate conjunction, **or** you may commit a comma splice.

Subject + verb, **cc** Subject + verb

Complex Sentences

COMPLEX SENTENCES express complex and usually unequal relationships between ideas. One idea is “**subordinated**” to the main idea by using a “**subordinate conjunction**” (like “while” or “although”); one idea is “dependent” upon the other one for logic and completeness.

Complex sentences include one main clause and at least one dependent clause. Often, it is stylistically effective to begin your sentence with the dependent clause, then place the main clause at the end for emphasis.

Complex Sentences continued...

- **When** you make a complex sentence, you subordinate one idea to another.
- **If** you place the subordinate clause first, you give added emphasis to the main clause at the end.
- Subordinate clauses cannot stand on their own. Despite the fact that many students try to use them that way. x (*fragment* – replace the period with a comma to fix this error)*

*This is one of the most common language mistakes students make in academic writing. Ask yourself, can that last part with the underline, stand on its own? What does “them” refer to?

Complex Sentence

Dependent Clause	Independent Clause
2. After they discussed different options,	they decided <u>to re-design the components.</u>
Sub. Conj. (subject) (verb) (object)	(subject) (verb) (phrase)

Sentence 2 is a complex sentence, with one dependent and one independent clause, each with its own **subject-verb** combination (“**they discussed**” and “**they decided**”). The two clauses are joined by the subordinate conjunction, “after,” which makes the first clause subordinate to (or dependent upon) the second one.

Compound-Complex Sentences

COMPOUND-COMPLEX SENTENCES have at least two main clauses and at least one dependent clause.

Ex. Because a compound-complex sentence is usually quite long, you must be careful that it makes sense; it is easy for the reader to get lost in a long sentence.

Summary

Using a variety of sentence types as well as using these types strategically to convey your ideas will strengthen your style. Keep the following in mind:

- **Simple sentences** are great for emphasis. They make great topic sentences.
- **Compound sentences** balance ideas; they are great for conveying the equal importance of related ideas.
- **Complex sentences**, when you use them effectively, show complicated relationships between ideas by subordinating one idea to another.

Ambiguity

- “We can cut down the problems by not targeting the kids, but at the same time we must realize that they won’t disappear. ”
- “They know that kids and teens are the targets; but also, how to adapt new technology around them.
- I saw the neighbour wearing my pyjamas.

Sentence Fragments

- Occur when your sentences do not have: a subject, a verb or a complete idea
- Ex. Although Mary was injured (incomplete idea)
- Ex. Tom, an electrical engineer (missing what?)
- Ex. As many of us do -----

Ex. To become an electronics technician.....(incomplete idea)

To become an electronics technician, Mark had to complete a two-year apprenticeship.

Overly Long Sentences – Run-ons...

Ex. Home care has been expanding tremendously over the past few years partly due to recent technological advances that enable assessments and treatments to part of the home setting which at one time could only be performed within the hospital environment.

- Home care has expanded tremendously over the past few years. **This increase** is partly due to recent technological advances that now make more assessments and treatments possible in the home rather than only in the hospital.



BREAK TIME

Paragraph Structure

A Paragraph - A **paragraph** is a series of sentences that are organized and coherent, and are all related to a single topic. The three parts of a paragraph are: the *topic sentence*, the *supporting sentences* and the *concluding sentence*.

A well-organized paragraph supports or develops a single controlling idea, which is expressed in a sentence called the **topic sentence**.

The **topic sentence** states the main point. It can be the first sentence of a paragraph, or it can be elsewhere in the paragraph.

Supporting sentences – develop the main theme of the paragraph.

Concluding sentence - can paraphrase the topic sentence, come to some sort of summary or conclusion or neatly lead to the next paragraph.

See Linking/Transition Word Document on Lisam

- **REINFORCEMENT**

- *Desktop computers are cheaper and more reliable than laptops; **furthermore**, they are more flexible.*

RESULT/CONSEQUENCE

*Prices fell by more than 20% last year. **As a result**, sales increased by 15%.*

GENERALISING

*On the whole, his speech was well received, **despite** some complaints from new members.*

- **CONTRAST**

- *The South East of the UK often has the coldest weather in the winter. **Conversely**, the North West of Scotland frequently has the mildest temperatures.*

- **CONCESSION**

- *It was a very expensive holiday, the weather was bad and the people weren't very friendly. **Nevertheless**, we would probably go back to the same place.*



Supporting Sentences

- Develops the main theme (topic sentence)
- To do this cohesively try these techniques:
- repeating key words or phrases,
- listing ideas or
- chaining ideas

Listing with repetition

- *As I jogged along the river this morning, I thought of all the different roads my friends from school were starting on. I thought of Ruth, who was headed for university in New York, I thought of Max, who was going to be a journalist. I thought of.....*
- ** Careful – you don't want too much repetition – just enough to make your point. Use sparingly for best effect.*

Chaining – with references...

- The process of learning is essential to our lives.
- *All higher animals seek it deliberately.*
- *They are inquisitive and they experiment.*

- * Careful – sometimes the use of too many pronouns in a sentence can lead to confusion. At some point you can refer again to the original topic; in this case "They" refers to what???

Concluding sentences

- **Concluding sentences**, can paraphrase the topic sentence, come to some sort of summary or conclusion or neatly lead to the next paragraph.
- * Always check to see the connections between your paragraphs. Have you used appropriate transition words? Is there a clear flow between the paragraphs? Is there a clear flow/connection between each sentence in the paragraph?

Practice

- Read the following paragraph and look for the following:
- Topic Sentence (TS)
- Developing sentences – listing or chaining or both?
- What type of conclusion sentence is this?
- How is the second version of the paragraph different from the first?

PARAGRAPH EXAMPLE

- Gold, a precious metal, is prized for two important characteristics. Gold has a lustrous beauty that is resistant to corrosion. It is suitable for jewelry, coins, and ornamental purposes. Gold never needs to be polished and will remain beautiful forever. A Macedonian coin remains as untarnished today as the day it was minted twenty-three centuries ago. An important characteristic of gold is its usefulness to industry and science. It has been used in hundreds of industrial applications. The most recent use of gold is in astronauts' suits. Astronauts wear gold-plated heat shields for protection outside spaceships. Gold is treasured not only for its beauty but also for its utility.

PARAGRAPH WITH LINKS

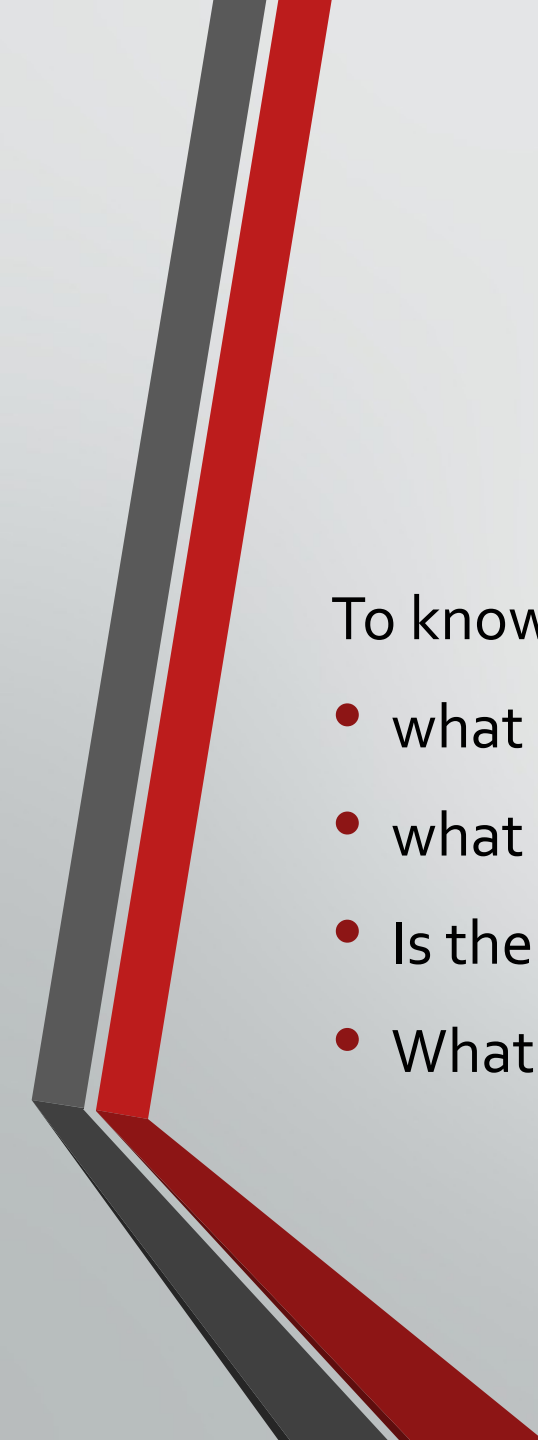
- Gold, a precious metal, is prized for two important (TS) characteristics. **First of all**, gold has a lustrous beauty that is resistant to corrosion. **Therefore**, it is suitable for jewelry, coins, and ornamental purposes. Gold never needs to be polished and will remain beautiful forever. **For example**, a Macedonian coin remains as untarnished today as the day it was minted twenty-three centuries ago. **Another** important characteristic of gold is its usefulness to industry and science. For many years, it has been used in hundreds of industrial applications. The most recent use of gold is in astronauts' suits. Astronauts wear gold-plated heat shields for protection outside spaceships. **In conclusion**, gold is treasured not only for its beauty but also for its utility. (CS)



Building
Blocks
of
Language

GRAMMAR

PUNCTUATION



Subject verb agreement

Getting it right

To know which present-tense form to use. We have to be able to tell:

- what part of the sentence is the subject.
- what part of the subject is the main word (head)
- Is the head singular or plural.
- What is the correct singular and plural form of the verb

Example

The recent development of breeder reactors (is/are) completely changing the economics of ore extraction and (is/are) boosting the known reserves of nuclear energy very considerably.

The recent **development** of breeder reactors **is** completely changing the economics of ore extraction and **is** boosting the known reserves of nuclear energy very considerably.

Subject – Verb agreement...

- **Uncountable** nouns are always in the singular and agree with singular verbs.
- Advice, baggage, equipment, furniture, machinery, money news, evidence, information, interest, knowledge, progress, software, data.
- *E.g. All of the equipment is in the storage area.*
- *Ex. There is a lot of furniture in this room.*

Subject verb agreement

- Collective nouns – denote a group or a collection of individuals. Can take the plural or singular verb depending on whether we refer to the group (singularly) or as the individuals in the group (plurally).

E.g. *The family is of French origin.*

E.g. *The family is/are having dinner.*

Example S/V

1. Surgeons in the US successfully _____ clouded vision or outright blindness by transplanting about 10,000 corneas a year. (alleviate/alleviates)

Surgeons in the US successfully **alleviate** clouded vision or outright blindness by transplanting about 10,000 corneas a year.

2. The congregation _____ mainly of factory workers. (consist/consists)

The congregation **consists** mainly of factory workers.

Example S/V

8. The job of establishing sufficient controls and measurements so that you can tell what is actually happening to athletes tediously complex. (be)

The **job** of establishing sufficient controls and measurements so that you can tell what is actually happening to athletes is tediously complex.

Example S/V

9. Both science and medicine _____ to preparing athletes for competition. (contribute/contributes)

Both science and medicine **contribute** to preparing athletes for competition.

10. The only equipment they work with __ a blackboard and some chalk. (is/are)

The only equipment they work with **is** a blackboard and some chalk.

11. One area of research that _____ great promise is genetics. (show/shows)

One **area** of research that **shows** great promise is genetics.

PUNCTUATION

- Commas ,
- Semicolons ;
- Colons :

Punctuation Marks: the comma ,

1. Commas are used to separate items in a list.

E.g. Compounds of silicon, germanium and phosphorous...

2. A comma is also used to divide a sentence into clauses.

E.g. When the temperature is high enough, the mixture explodes.

3. A comma may also be used to separate an element that interrupts the sentence.

E.g. The fire, although it had been put out, was still very hot.

Commas continued

4. Commas are sometimes used to separate main clauses joined by a conjunction.

E.g. We were optimistic about the outcome of the experiment, **but** were ultimately disappointed with the results.

5. Use a comma at the end of an introductory **Essentially**, an introductory element begins a sentence by providing a transition from the last sentence or background information before the independent clause.

Introductory elements

- **Examples:**
- **Prepositional phrase:** *In a hard fought contest, the home team prevailed after two overtimes.*
- ***Subordinate clause:** *Because I did well on my final essay, I should be able to pass the class.*
- **Transitional expression:** *For example, Staples offers a variety of services that can benefit students.*

- *** Bisats**

Semicolons ;

- The semicolon is used to separate sentences that are closely related.

E.g. The series of experiments could not be completed; without power it was impossible to run the spectrograph.

- A semicolon is also used in a list where commas are used within items in that list.

E.g. When using aqueous two-phase systems for bioconversions, a number of factors have to be considered: the partitioning of biocatalysts, substrates and products; the recirculation of biocatalysts; recovery of products and, finally, the reactor design.

Colons :

The colon may be used in two ways:

- after a main clause where the following statement illustrates the content of the clause:

E.g. The experiment gave erroneous results: the equipment had not been properly calibrated. (explanation of the first clause)

- * A colon is not followed by a capital letter.

Colons continued...

- Before a long list:
- **E.g.** Apart from water, the basic fodder for rats should contain at least three of the following: potatoes, carrots and celery.

Note – there is a difference between: **apart from** and **except for** – what is the difference?

BASICS

- FULL STOP. (one space after a full stop) Comes at the end of a sentence.
- I - This word is always capitalized no matter where it is in the sentence.
For ex. I like tennis. Tennis is the sport I play the most.
- Avoid contractions in academic writing – write out the two words
It's = it is // doesn't = does not // weren't = were not

* Always use an English dictionary such as Cambridge, Longman or Websters for best results regarding spelling, word types and of course, definitions.

Grading Criteria

- Check List:
- Spellings
- Capitalizations
- Subject – verb agreement
- Collective nouns
- Sentence Structure
- Linking words and transitions
- Paragraphing and Cohesion
- Punctuation: commas, semi-colons, colons
- Terminology clearly explained
- References used appropriately



https://www.ida.liu.se/~TDDD89/material/Grading_rubric_TDD89.pdf



Final Thoughts

An academic writer must provide the reader with the **sources**/foundations upon which s/he is building.

An academic writer must ensure that they are not plagiarizing anyone else's work. (This includes AI)

Check your supervisor's instruction documents on Lisam regarding references and plagiarism.

Thank you for you attention!



Best of luck in your writing endeavors!