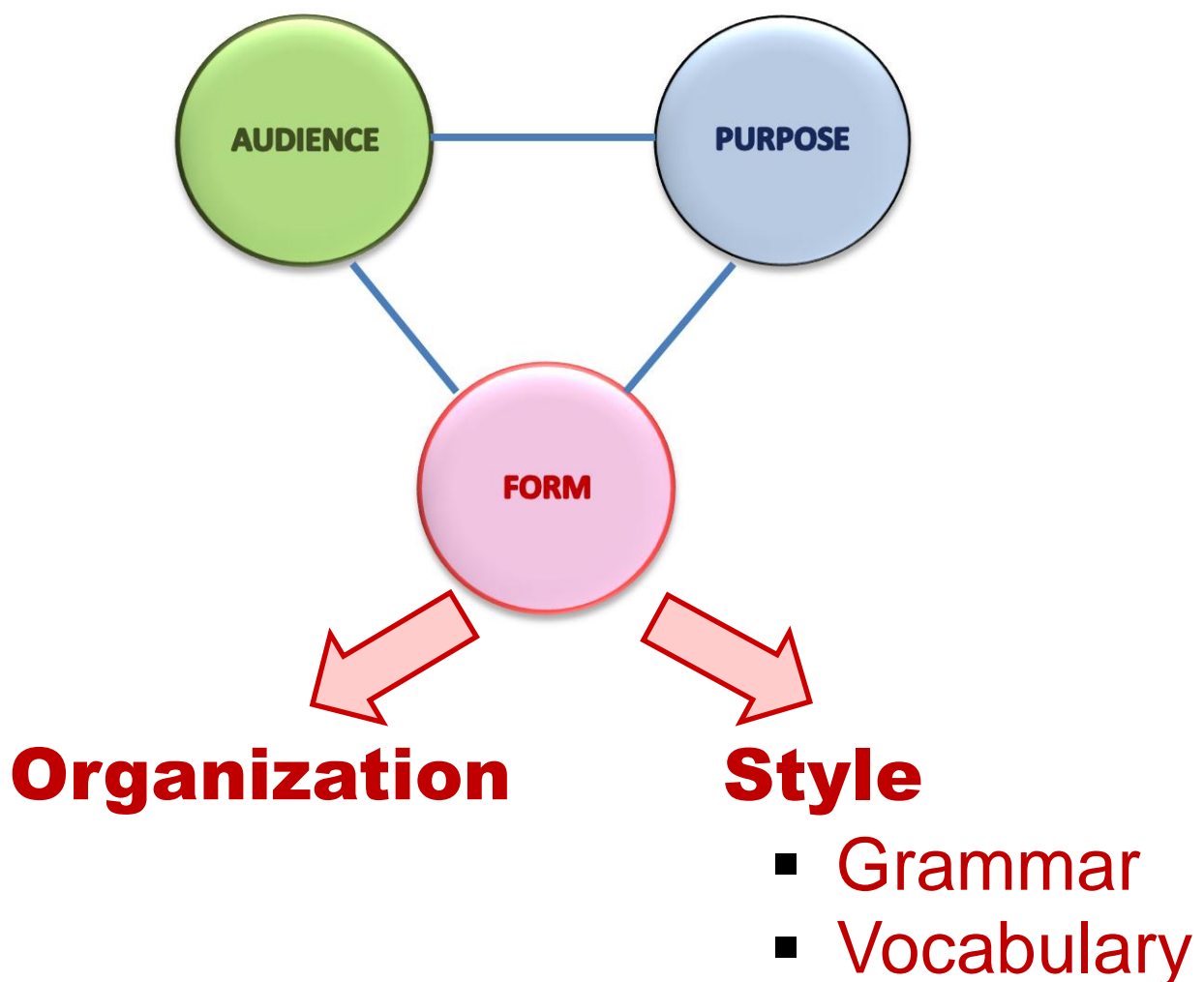


FORM AND STYLE

As we have already seen, consideration of *purpose* is vital for achieving the correct *form* (organization) of your text. If your purpose is to educate and inform your reader, then you would need to proceed from general concepts that are already familiar to your audience, defining each new concept and providing examples, as you move to more unfamiliar topics. In contrast, if your purpose is to persuade your readers, then you would want to stress the importance and relevance of your topic, as well as use an appropriate organizational pattern, such as the *problem-solution* pattern.

However, organization is not enough. You must also consider your *audience* in terms of the language forms that you choose to use in expressing this purpose. To be credible (i.e., believable) at university and in professional life, you need to 'sound' like someone from your field of study. You need to choose vocabulary and language forms that are more formal, objective, free of emotions and less colorful than those you would use with friends and family.



Style and Formal Grammar

The following are some nonvocabulary-related recommendations for maintaining a more formal writing style.

1. Avoid contractions.



Hydrogen is very difficult to store because **it's** the smallest element.

A Porsche **doesn't** necessarily have more energy in its gas tank than a Hyundai; it is just able to transfer it more quickly.



Hydrogen is very difficult to store because **it is** the smallest element.

A Porsche **does not** necessarily have more energy in its gas tank than a Hyundai; it is just able to transfer it more quickly.

2. Avoid using the possessive 's with inanimate objects.



The momentum of a material object is defined as $p = mv$, the product of **the object's** mass and its velocity vector.

A **computer's** keyboard is an input device partially modelled after the typewriter.



The momentum of a material object is defined as $p = mv$, the product of the mass and velocity vector **of the object**.

A **computer keyboard** is an input device partially modelled after the typewriter.

3. Use the more appropriate formal negative forms.

not ... any → **no**

The new assembly process **didn't** lead to **any** noticeable changes in quality.

The new assembly process led to **no** noticeable changes in quality.

not ... much → **little**

Not much information is available on these kinds of systems.

Little information is available on these kinds of systems.

not ... many → **few**

The download edition **doesn't** include **many** desktop applications.

The download edition includes **few** desktop applications.

4. Avoid use of the "run on" expression "etc." (See pp. 54-56)



Semiconductors can be used in robots, CD players, **etc.**



Semiconductors can be used in robots, CD players, **and other electronic devices**.

Semiconductors can be used in **devices such as** robots and CD players.

Semiconductors can be used in many **devices, including** robots and CD players.

5. Avoid personal pronouns "you", "we", "I", as well as "people".



You can see the results in Table 1.

People commonly refer to the kilogram as a unit of weight, but it is a unit of mass.



The results **can be seen** in Table 1.

The kilogram **is** commonly **referred to as** a unit of weight, but it is a unit of mass.

6. Limit the use of both direct and indirect questions (See p. 57).



What can be done to lower costs? [Direct question]

This study proposes **what can be done to lower costs**. [Indirect question]



This study proposes **several METHODS for lowering costs**. [Noun]

7. Place adverbs within the verb (See p. 105).

When the verb has many parts, place adverbs in mid-position. In informal English, adverbs often occur at the beginning or end of sentences.



Also, light energy can be absorbed by matter, i.e., converted into heat.

Our planet's rotation **has slowed dramatically** since it first formed.



Light energy **can ALSO be absorbed** by matter, i.e., converted into heat. (Midposition)

The rotation of our planet **has DRAMATICALLY slowed** since it first formed. (Midposition)

Typically, in the case of one-word verbs, placement of the adverb depends on the type of verb:

1. After the verb **to be** :

The increase in greenhouse gases **is mainly** the result of humans changing the natural patterns of vegetation and polluting the atmosphere.

2. Before all **other verbs**

The Earth's dry atmosphere **mainly contains** nitrogen.

Style and Vocabulary

Learning to distinguish between spoken and more formal written forms is important for communicating in any language. In English, there are some easy rules that will help to guide you. Avoid *phrasal verbs*, verbs consisting of one or more words (e.g., to *put up with* = *withstand*); avoid the most common short verbs (e.g., *get, take, go, come, do, make, have, put, give*); and whenever possible prefer words that are derived from Latin and French (put → insert).



Task 1: Verbs

Select a verb from the box that increases the formality of the verbs underlined in the sentences below.

address analyse/analyze avoid consume conserve convert	decline denote determine develop examine flow form	generate investigate monitor obtain obviate occur operate	perform prevent process raise release retrieve rise
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1. Wireless mobile networks that work without the need of a fixed infrastructure are widely known as ad hoc networks.
2. The data transfer rate is critical in applications that must store or get back long data streams, such as in image storage or back-up applications.
3. The objective of this project is to find out whether temperature would have an affect on the performance of a fuel cell.
4. This paper looks at the problem of modelling and estimating the cost of a heat exchanger network.
5. Fuel cell vehicles are the least polluting of all vehicles that directly use up fuel.
6. Scientists plan to do tests with methanol-like fuels during the next stage of research.
7. The aim of this report is to take a look at different generalization algorithms that are commonly used with vector-formed data.
8. The parameter S stands for the ratio of the area of the inner electrode.
9. As the cost of production goes down and efficiency goes up, fuel cells are expected to find many more applications.
10. For weather forecasting, vast amounts of data must be quickly handled to get reliable results.
11. Fuel cells use electrochemical reactions to turn chemical energy, which is given off by an oxidizing material, into electric energy.
12. Researchers are working to come up with a network to communicate with implantable sensors, such as devices which would check blood pressure, glucose levels and other key medical factors.
13. One problem with a fuel cell hybrid vehicle is the danger that the electromotive force made by the motor during shut-down of the vehicle could get into the fuel cell. To keep this from taking place, conventional fuel cell hybrid vehicles use a simple contactor as a safety device between the fuel cell and the vehicle controller.



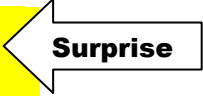
Task 2: Adverbs

Replace the underlined words below with a more formal equivalent.

1. In the earth's atmosphere, the molecules are moving around all the time.
2. Despite the fact that fuel cells are not in widespread use, we have the knowledge and the products to make it a real prospect.
3. The concept of hydrogen power has become more and more attractive in recent years.
4. The European Union (EU) nowadays consists of 27 member states, but this number is expected to grow.
5. Nowadays, the peer-to-peer network has become used a lot for file sharing, instant messaging, and distributed computing.
6. All fuel cells convert hydrogen and oxygen directly into water and electricity producing water and heat as the only byproducts during the process. Because of this, fuel cells provide a more environmentally friendly alternative for power generation.
7. This approach is used a lot in environmental studies associated with peat regeneration.
8. By definition, the term 'loudness' is used to describe a sound's perceptual disturbance or perceived sound level. But loudness is also used in a musical sense in order to represent the sound level of an acoustical instrument.
9. Coal currently provides 30% of the energy in Europe. Yet EU carbon emissions limits may greatly affect the coal industry in the near future. So many agencies are developing "clean coal" technology in an attempt to allow increased coal use in the future.
10. The emissions are much cleaner because of the fact that fuel cells convert the fuel to electricity through an electrochemical process rather than a combustion process typical of most power plants.
11. The appeal of hydrogen is overwhelming. Molecular hydrogen can easily be stored and transported. Also, hydrogen can be derived from water with molecular oxygen as the only by product. When hydrogen is burned, it combines with oxygen in the air to form water once again so that it generates the source material.
12. Although the rolling of metals and polymers has received a lot of attention in the engineering research community, not a lot of work has focused on the sheeting of dough in the food industry.

Table 1. The most common formal linking words used in science and engineering

	Subordinators (Sub + sen ¹ , sen ² .)	Sentence adverbials (Sen ¹ . Adv , Sen ² .)	Prepositions (Prep + Noun/ NP)
Addition	not only..., but also... both... and	In addition, [--] Moreover, [--] [+] Furthermore, [++]	in addition to as well as
Adversative	although even though though	[+] However, [--] [--] Nevertheless, [++]	despite in spite of
Contrast	while (USA) whilst (UK) whereas	In contrast, However, On the other hand, Conversely,	in contrast to unlike contrary to instead of
Cause-Effect	because since (USA) as (UK)	Therefore, As a result, Consequently, Thus,	because of, due to, as a result of
Clarification		In other words, that is, ...	(i.e., ...)
Similarity		Similarly, Likewise, Analogously,	similar to like
Illustration		For example, For instance,	(e.g., ...) ..., such as ..., including
Intensification		On the contrary, Indeed, In fact,	



Task 3: Nouns and adjectives

Replace the underlined words below with a more formal equivalent.

1. One practical way to define an energy unit is to base it on heating water. The SI unit of energy is the joule, J, named after the British physicist James Joule. One Joule is the amount of energy required in order to heat 0.24 g of water by 1°C.
2. One of the biggest disadvantages of a hydrogen fuel cell powered vehicle is the trouble in refilling the hydrogen.
3. Engineers have never succeeded in creating a perfectly efficient thing for converting heat energy into mechanical energy.
4. Burning fossil fuels has made China's cities the most polluted on the planet, and the country's total energy supply is not enough to support American levels of energy consumption for more than a small fraction of China's population.
5. Sending people into orbit has just been too expensive to be a good scientific or commercial activity.
6. Converting certain types of energy into different forms is often pretty hard.
7. The surface of a small solid is comparatively greater than that of a big one.
8. Even with state of the art technology, landing a human crew safely on the red planet with all their stuff will be challenging.
9. Thermometers at different places in a system may indicate differing temperatures.