**Rules for writing your essay (and for nearly**

**all scientific writing)\***

Your 1500-word essay is worth 40% of the final mark of this module. Of this, 20% of the marks are ‘for avoiding common errors’. These are outlined below, along with the number of points that will be deducted per error. It is worth remembering that these are not *grammatical* errors, but errors in scientific writing *style*.

1. **Let the subjects do the work in your sentences. (-0.5 points)** If you do, you'll have shorter sentences that will be clearer and more direct. Consider the following examples:

(i) "It can be seen from the ICP data that . . ."

vs. "The ICP data show that . . ."

(ii) "In a study by NOAA, it was discovered that . . ."

vs. "A study by NOAA discovered that . . ."

(iii) "By looking at satellite images one can see . . ."

vs. "Satellite images show . . ."

(iv) "Based on these results, it appears that . . ."

vs. "These results suggest that . . ."

The second sentence in each pair is much clearer and more direct. Note that each uses the conceptual or physical agent of the sentence as the grammatical subject of the sentence. As you edit, examine each sentence to see what its subject and predicate are doing in the sentence.

**The examples above also show that any sentence beginning with or containing "It can be . . .", "It would be . . .", "The fact that . . .", "Based on . . .", or other functionless words can be rewritten to be more effective.**

1. **Link sentences and paragraphs together so that the continuity of your ideas is apparent**. **(-0.5 points)** Consider the following paragraph:

"Some flattened contacts in these rocks may be the result of either mechanical or chemical compaction, *but* many of the concavo-convex contacts and all the sutured contacts are indicative of intergranular pressure dissolution. *At the sutured contacts*, laminae are terminated by intergranular sutures, indicating that cortex has been removed rather than plastically deformed (Figs. 3b,c,d). *This removal of laminae* without bending demonstrates that the grains were solid at the time of intergranular compaction, and that laminae were dissolved, rather than displaced. One might argue that cerebroid ooids could fit together so as to yield seemingly sutured contacts without pressure dissolution, *but* the interpenetration of otherwise round ooids (Figs. 3Êb,d) shows that this cannot explain all the sutured contacts. Round quartz grains pushed into ooid cortices (Fig. 3a) *similarly* defy explanation as accidents of interfitting grains. Pressure dissolution *thus* seems to be the only reasonable explanation *of the fabrics observed*.

Larger-scale evidence of pressure dissolution in *these limestones* includes . . ."

Note that the italicized words link ideas and thus link sentences in this example. If one removes all the italicized words (and splits single sentences into two sentences where there are "buts"), the text becomes a collection of unconnected thoughts.

**3) Be careful with your tenses. (-0.5 points)** Because geology is so historical and/or interpretative, geologists have to talk about the evidence that presently exists for past events. The present tense is used to talk about things that still exist, whereas the past tense is used to talk about things that no longer exist or that happened in the past. For example:

“Porter and Al-Tabakh (1978) reported that the dolomites exposed on Mt. Morrison are rich in Zn and Cu.” (They reported in 1978 a characterization that presumably still exists today.)

“Ca is the most abundant element in the stalagmite, which grew 10,000 years ago.”

**4) Be clear but tactful in comparing your findings to previous data and interpretations. (no deductions, but be careful!)** There seem to be at least three ways that you can write with regard to other people's conclusions that now seem to be incorrect in light of your work.

1. You can barely mention those other people, or mention them with little comment, and never point out that your results are incompatible with their conclusions.

2. You can mention those other people and their work, and say that your results "fail to support" or "are incompatible with" their conclusions.

3. You can identify those other people and their work, and say that your results show that their conclusions are flat-out wrong, and silly, and the result of shoddy work and weak thinking.

Type 1 is ineffective because it doesn't tell readers why your results are significant, and so your work doesn't achieve its full meaning. Type 3 engenders ill will, which will do you no good in the future, and it makes you seem pedantic. Type 2 is best, because it states what seems to be the truth (your data show someone's previous ideas to be incorrect) but puts the blame for embarrassing that someone on the data, rather than on you.

**5) Don't confuse words for time and logic (-1 point).**

(i) "While" is commonly used for "although", "but", or "whereas". "While" is a term for time; "although", "but", and "whereas" are terms for logic.

*"The Ascot Member was deposited subaerially, while the Derby Member was deposited under subaqueous conditions."*

(ii) "Since" is commonly used for "because", but "since" is a term for time and "because" is a term for logic. Consider the non-trivial potential for confusion:

*"Since the moraine was deposited in the valley, it has been intensely modified by stream erosion".*

(iii) "Subsequently" is a term for time, and "consequently" is a term for logic:

*"Jones (1998) showed that NaBr affects polyp growth, and subsequently Ekatabo (2000) studied the effect of NaBr on byrozoan zooids".*

(iv) "As" is a word for time, whereas "because" is a term for logic. Consider these examples:

*"As the ice mass had melted, the land surface rebounded."*

**6) Refer to figures sensibly, usually parenthetically (-1 point)**. In other words, refer to a figure by putting it in parentheses while discussing the results in the text, rather than discussing the figure directly. For example, many people are inclined to say “As can be seen by Figure 7, the temperature has increased over the last 50 years.”

Much better would be to say “Temperature has increased over the last 50 years (Figure 7).”

Only very rarely refer to a figure outside of parentheses. Look at high profile publications (those in Nature or Science, for example) for good example of how figures are discussed.

**7) Do not use any of the following (-1 point):**

* The passive voice (‘be’, ‘been’, ‘has been’, ‘will be’, etc.). Change to active voice.
* ‘it is…’. Change the sentence structure.

**8) Consider changing anything that has (no points deducted, but please consider):**

* The word ‘of’. For example, ‘the chemistry of the water’ should read ‘the water chemistry’.
* ‘Takes into account’. Change to ‘considers’.
* ‘Shows’. This can be used sometimes, but much better is either ‘indicates, strongly suggests, suggests, implies, is consistent with, demonstrates, reflects, etc.’.
* ‘Changes in temperature’. Change to ‘Temperature changes’ or even better avoid using ‘changes’ at all. Use a better word like ‘Temperature…shifts, reorganisations, fluctuations, evolution, transition, variability, etc.’; each of these have subtle variations in meaning, so one-for-one substitutions may not be possible, but each is usually more applicable than ‘changes’.
* ‘is possible’ to ‘may’