Example A:
Peer assessment for Essay Assignments

A/P Adrian Lee, Department of Chemistry

Module Outline

Module: GEK1535 — Our atmosphere: a chemical perspective Number of Students: 200+
Faculty: Science

Module Description
In the second half of the 18th century, it was realised that 'air' was not a single chemical element, as envisaged by a number of the early Greek thinkers, but a physical state that many chemical substances could assume, and that atmospheric 'air' was a mixture of several different chemicals in the same vaporous state. It was from our studies of the atmosphere that led to the emergence of chemistry as a distinct, rational science. In the last century, our studies of the atmosphere centred largely on understanding the distribution of ozone. Ozone plays two roles in the atmosphere: first, in the stratosphere it protects us from potentially lethal ultraviolet radiation; and second, in the troposphere it is a significant pollutant with impacts, *inter alia*, on both human health and agriculture. In 1985, scientists discovered dramatic ozone depletion over Antarctica during spring in the now infamous 'ozone hole' events. The ozone hole is arguably the single most important event in environmental politics. It galvanised support that led to the formulation of the first-ever global, international treaty on an environmental issue. This treaty, the Montreal Protocol, is providing the framework for governments in their attempts to limit the emissions of greenhouse gases and thus mitigate global warming. Whether or not ozone depletion was the environmental issue of the last century, without a doubt, global warming will be this century. All these issues — historical, political and scientific — will be covered in an entertaining and absorbing manner in a module that will give students a deeper knowledge and appreciation of our atmosphere.

Assessment task(s)

The essay will be on 'Addressing Climate Warming: Should Universities Stop Serving Meat?', that as part of creating a sustainable and environmentally responsible campus, university food services should stop serving meat. A global temperature rise of more than 2°C from pre-industrial (1880) levels will have significant harmful consequences for life on Earth. Greenhouse gases (carbon dioxide, methane and nitrous oxide) are implicated in global warming. Individuals and orgnisations interested in sustainability are now looking for ways to reduce their carbon footprint (see carbon footprint calculator to understand how carbon footprints are calculated.) While transportation choices and energy used in heating and cooling buildings are significant contributors to carbon footprints, a recent study (Scarborough *et al.*, 2014, a copy of which has been placed in the Workbin) has found that dietary choices can also make a significant impact on one's carbon footprint. Meat heavy diets (7.19 kgCO2e/day) generate significantly more greenhouse gases (through production, transport, storage, cooking and wastage) than do fish (3.91 kgCO2e/day), vegetarian (3.81 kgCO2e/day) or vegan (2.89 kgCO2e/day) diets. The study further suggested that based on a 2,000 kcal daily energy intake, shifting from a high meat diet to a low meat diet would reduce an individual's carbon footprint each year by nearly the equivalent of an individual's economy return flight from Singapore to Beijing.

A portal with relevant research can be found at http://www.fcrn.org.uk/research-library. The focus of this essay is on environmental sustainability. While there are ethical and health arguments for reducing meat consumption, please focus on the environmental agenda. Even within this focus, the issues are wide-

ranging. Should universities concern themselves with sustainability? If so, is food sustainability a key issue in overall campus sustainability? Should Universities impose environmental policies on food services and, therefore, its students and staff? Should Universities engage in moral purchasing? What are the potential social, political and financial costs and benefits? What effects might such a policy have on other university relationships (e.g., food industry sponsors and donors)? What other environmental policies might be more effective?

The deadline for submission is the end of **Week 8**. The word limit for the essay is **1500 words** (not including title and references). Submission will be to the Student Submission folder in the Workbin. I will be emailing you all an individual identifier with which you are to name your essay file. After submission you will all receive the identifiers of 3 essays for you to grade using the Essay Writing Rubric found in the Assignments folder in the Workbin. You will have 2 weeks to grade the assigned essays. After grading, you will be required to self-grade your own essay. Of the 25% awarded for the essay, 15% will be attributed to the grade awarded and 10% will be attributed to the quality of grading.

Please note that if you do not agree with the grade awarded by your peers you may request that I grade your essay. In such cases, my grade will be final and may be higher or lower than that awarded by your peers.

Rationale of Assessment Choice

Peer assessment and feedback are important components that can be used to enhance student learning. I use peer assessment to get students to make evaluative judgements of their peers' essays. I also provide a grading rubric that students can use as a guide while grading. The main point of this process though is to return the feedback from the peers back to the individual students. Each student provides feedback for at least 3 essays. This allows students to see others' work compared to their own essays. My class, being a heterogonous class prompted me to moderate student grades so as to take into account the easy-graders and strict-graders. In addition, I also get students to mark their own essay after having marked their peers' essays. This acts as a reflective element for their own learning.

Thus, with peer assessment, students get an opportunity to observe their peers' learning process and also be able to get a more detailed knowledge of their classmates' work. This fosters increased responsibility in students, enabling students to be fair and accurate when assessing their peers' essay, thereby making fair judgments, while also aiding in self-assessment of their own work.

To organize the peer feedback and grading process, I would suggest the use of TeamMates, an online peer evaluation tool used by some of my colleagues in the Department of Chemistry, though I have yet to try it personally.