(301C8) Ethics, Philosophy and Methods of Research

Convenor: Zoltan Dienes

Essay ESS:

**Qualitative Methods** - 1,000 words (35%):

Students may use any provided essay title other than one you have already used to write an assessed essay. *(NB: on completion of the Qualitative Methods resit essay students should state on the first page the title of the essay they previously completed at initial attempt)*

**Ethics and Research Governance** - 1,000 words (35%):

Students may use any provided essay title other than one you have already used to write an assessed essay. *(NB: students should state on the first page the title of the essay they previously completed at initial attempt)*

**Philosophy of Science** - 1,000 words (30%):

Students should complete a set of 15 questions with short answers, totalling about 1,000 words. Please refer to page 2 for the questions.
Philosophy of Science: Alternative Paper

For the following paper, where a key result apparently testing a theory comes from a t-test (or F with one degree of freedom), answer the following questions. Try to limit your total words to about 1,000, so each answer will need to be very concise, while being informative.

Use the original paper to inform you of the expected effect size for the key effect in one experiment and see if the failure to replicate is sensitive:

Section A. Popper (25 marks):

1) Concisely state the theory that the authors present as being put up to test?
2) What pattern of results, if any, would falsify the theory?
3) What background knowledge inspired this theory but is not being directly tested?
4) What background knowledge must be assumed in order for the test to be a test of the theory in (1)?
5) How safe is the background knowledge in (4)?

Section B. Neyman Pearson (25 marks):

6) Have the authors determined what minimal difference could be expected if the theory were true? If not, determine one yourself and state your reasons. Use it to construct a null region.
7) Calculate a confidence interval and use it, and the null region, to argue whether the data sensitively distinguished the alternative and null hypotheses.

Section C Lakatos (25 marks):

8) State the hard core of the research programme the authors are working in
9) Does the paper contribute to the research programme in a progressive or degenerating way? State your reasons.

Section D Bayes (25 marks):

10) What was the mean difference obtained in the study?
11) What was the standard error of this difference?
12) Can you determine an expected value or a maximum value?
13) Specify a probability distribution for the difference expected by the theory and justify it.
14) What is the Bayes factor in favour of the theory over the null hypothesis?
15) What does this Bayes factor tell you that the t-test does not? Include a screen grab of what you entered in the Bayes calculator, and its output.