432018 PHILOSOPHY OF PHYSICS (Spring 2002)

Instructions for the seminar in Week 8

Reading: For the seminar, as well as the preliminary reading for the lecture, please go to the library and find something to read on Special Relativity. Important things to look out for are: the Michelson-Morley experiment, the relativity of simultaneity, Lorentz transformations, length contraction, time dilation, the twins paradox and Minkowski space-time. I am not expecting you to gain a deep understanding of the mathematics, I just want you to begin to see how Special Relativity challenges some of our preconceptions about space and time. An example of a suitable physics text is:

A. Beiser, Concepts of Modern Physics (McGraw-Hill, 1987), Ch. 1.

A less mathematical and more philosophical introduction to the subject can be found in

B. Russell, The ABC of relativity.

Please don't take these books out of the library since other people will need to refer to them.

Instructions: In the seminar, I would like to concentrate on how Special Relativity has lead to a revision in our understanding of our concepts of 'space' and 'time'.

As such, I would like you to prepare a few questions for the class. In the seminar these questions will be discussed and so you should, if possible, prepare answers to your own questions or questions which other people may raise.