NOTES ON SDM SAMPLE PAPER

Question 1 is compulsory and will consist of a number of fairly short parts. As you see, some parts are bookwork, others are problem solving; the parts range over the whole course. Some parts might depend on earlier parts, as here, but mostly the parts are independent.

Note: The question about why you might not want your bidirectional transformations to be hippocratic has puzzled several people! This is my fault: I wrote the sample paper before I had given the relevant lecture, and I think I didn't actually talk about hippocraticness enough for you to understand how to answer that question, in the event. The essence is: if changing a model from say M to M' doesn't affect the meaning of it, and in particular doesn't affect what it's consistent with, is it OK for the bidirectional transformation to make that change when it restores consistency, even if it doesn't actually need to make any change, because the models are already consistent? Or should we insist - as hippocraticness does - that if the models are already consistent then no change at all must be made? This relates to a genuine disagreement between people in the field, which is closely related to something we did talk about, namely the *pragmatics* of use of a language. In the case of a diagrammatic language, someone who thinks there are no important pragmatic aspects of the way people use layout may be quite happy for the tool to re-layout the diagram when it restores consistency; they may even prefer that, if the tool can do some automatic layout that leaves the diagram neater. That person may not want to insist that their bidirectional transformation should be hippocratic, because they are quite happy if, when consistency restoration is applied between two models that are already consistent, one of them gets "tidied up" by being re-laid-out in this way. In my experience people in the graph transformation community tend to feel that way, perhaps for historical reasons: I first came across the opinion when I gave an invited talk in a graph transformation conference, and experienced push-back from the audience when I gave hippocraticness as an example of a property we should always want our bidirectional transformations to have.

There is a choice between Questions 2 and 3. The ones shown here are taken from past SEOC papers (2016 main diet and resit, respectively). As this suggests, the style of questions 2 and 3 will be similar to the style of the questions from SEOC past papers, though of course the precise content will depend on exactly what material we get through in this SDM presentation, and I wouldn't tend to ask a lot about basic UML, because that will already have been covered in the lab assessment. Don't read too much into the details of the questions shown here. For example, while there could be an essay question based on required reading, there doesn't have to be.