DESIGN PROJECT

UHON 351U — UNCERTAINTY, SPRING 2013

1. What is to be done

You will form a group which includes 3–5 students. The group as a whole will select one of the two following problems:

Design a risk management policy for a large corporation: The corporation may be real or fictional, although it should be large enough to engage in an interesting range of risks, and you should have enough concrete information about it to make a meaningful design. You may design the policy either from the perspective of the company (for selecting and implementing appropriate risk profiles) or from the perspective of regulators charged with insuring the stability of major industry participants.

Design a software system to aid practicing physicians: The system should aid physicians in diagnosing and/or treating patients. You may choose to make your system a generalist, or a specialist. The goal is to improve physician performance (as measured, at least in major part) by patient outcomes) by making relevant recommendations, checking contraindications, or providing other consultant-like advice. Recall that the professional human judgment of the physician must be respected.

For whichever problem you select, you are to solve the design problem in view of the scientific, philosophical, and mathematical apparatus we explore in the class. Of course, some points will be more useful than others to any particular design solution, but you should take appropriate advantage of anything you can; your design should at least be an informed one.

Groups will present written and oral reports on their solutions, giving integrally connected scientific and philosophical justifications for their approaches. Teams may choose to submit a software artifact as a major component of their written report, but the basic expectation is only a concept-level design: that is, an explanation of how the system would work, with a justification for that concept.

2. Due Date

February 4: Team Composition and Project Selection, in typed hard-copy
May 10: Written report
May 10, 10:10am–12:10pm: Oral presentations

3. Grading

In addition to the usual criteria, I will assess the following content questions:

(1) Does the design solution presented effectively address the problem? Is the solution feasible, at least in principle?

(2) Does the solution demonstrate cognizance of the scientific, philosophical, and mathematical apparatus developed in the course? Is the conceptual framework of the solution adequately explained and defended in the report?

I will assess the following form questions:

(1) Was the team composition and project selection reported by the deadline and essentially unchanged? Did the team exhibit professionalism in working together and managing differences?
(2) Does the oral report make good use of the audience's time, while observing the stated time limit? Are all team members appropriately involved?
(3) Is the oral report sufficiently independent of the written one as to be understood by someone who has not read the written report?