Graduate Center Doctoral Course – Spring 2009

PHYSICS AT THE LARGE HADRON COLLIDER

The next major development in the area of Particle Physics is the coming online of the Large Hadron Collider (LHC) which will begin to collect data later this year. In this course a study will be made of the scope of the LHC in probing the Standard Model, extensions to the Standard Model and Beyond the Standard Model.

So the course would be made up as follows:

1. Introduction to particle physics
2. Introduction to the LHC
3. Calculating cross sections at the LHC
4. The Standard Model and the LHC
5. Supersymmetry and the LHC
6. Grand Unified Theories and the LHC
7. The Phenomenology of String Theory at the LHC.

The prerequisites for this course are: one year of graduate quantum mechanics and electromagnetism.