1) **Have formal learning outcomes for the department’s Core courses been developed? What are they?**  
(What specific sets of skills and knowledge does the department expect students completing its Core courses to have acquired?)

The physics department’s core courses share with the university’s Natural Science Core the same desired outcomes, namely that at the completion of a core course in the physics department students will:

   a) expand their understanding of the principles, body of knowledge, and investigative strategies that comprise physics and its technological applications;

   b) develop a scientific literacy that will promote curiosity, respect for the scientific method, and general awareness of the limitations of scientific conclusions;

   c) recognize the role of scientific discovery, past, present, and future, in interrelated concerns such as human health, societal well-being, and planetary sustainability; and

   d) appreciate the role of physics in defining their relationship with the natural world and their position within the cosmos.

2) **Where are these learning outcomes published? Be specific.** (Where are the department’s expected learning outcomes for its Core courses accessible: on the web, in the catalog, or in your department handouts?)

These desired outcomes are described in a general way in the department website and are a part of each core course, whether explicitly or implicitly.

3) **Other than GPA, what data/evidence is used to determine whether students have achieved the stated outcomes for the Core requirement?** (What evidence and analytical approaches do you use to assess which of the student learning outcomes have been achieved more or less well?)

The data differs to some extent depending on the nature of the core course with respect to amount of rigor and mathematical detail. For example, in the core courses that cover classical mechanics, at the beginning of the course the department administers to students the “Force Concept Inventory”/Mechanics Baseline test. At the end of the semester the test is administered again in order to assess student learning.
4) **Who interprets the evidence? What is the process?** (Who in the department is responsible for interpreting the data and making recommendations for curriculum or assignment changes if appropriate? When does this occur?)

All physics faculty members who teach core courses participate in interpreting the evidence, for example, by administering the Force Concept Inventory. However, it is the responsibility of the Undergraduate Affairs Committee (UAC) to coordinate the process, evaluating and analyzing departmental data. That committee reports to the physics faculty as a whole and receives their input. Based on this, and in cooperation with the department’s Teaching Committee, the UAC will work with instructors to develop specific ways to better meet program goals, including changes in the curriculum to address deficiencies.