1. **User-centered design process**

   The User-Centered Design (UCD) process is the overall development process for creating interactive systems. Knowledge of UCD entails understanding the various phases and which methods are most useful. It includes knowing how the principles of the above learning goals fit into the discipline. In demonstrating knowledge of the UCD process, students should be able to successfully order the stages of the process and identify methods or principles for conducting each of the stages.

   **Proposed outcome:** students can successfully order the stages of the process and identify methods or principles for conducting each of the stages. We are currently assessing this outcome.

2. **Principles for designing user interfaces**

   For many HCI practitioners, designing Web pages or graphical user interfaces is an important component of their job responsibility. While the successful design depends on judgment, intuition and subjective assessment, there are some established principles that often lead to better designs. For assessing the design knowledge of our students, we choose to test them on their awareness of common principles for effective design.

   **Proposed outcome:** Students can articulate and apply common design principles for making good decisions in the design of user interfaces. We are currently assessing this outcome.

3. **Usability Testing**

   Usability testing is the most useful method for assessing how well users can learn and use computer software. When conducting this method, practitioners ask test users to complete tasks in order to observe where people have difficulty. Students should be able to create effective instructions for the test users. We are currently assessing this outcome.

   **Proposed outcome:** Students can create effective instructions for test users for conducting usability tests.

4. **Interface Implementation**

   Students should have knowledge for implementing user interfaces and using them for prototypes in the design process. Technical knowledge includes an understanding of languages and tools for specifying the layout of components such as labels, menus and user
controls for both web and stand-alone applications. Students should also have familiarity with event handling and databases in their support of user interfaces.

**Proposed outcome:** The details are to be determined, but assessment will probably involve understanding or writing code for implementing or prototyping user interfaces.

5. **Cognitive Principles**

In HCI a human user interacts with a technological artifact. The way that the user interacts with any particular design is constrained by the user's perceptual and cognitive processes. Understanding how the human brain and sensory system work allows HCI designers to avoid unusable designs, and allows HCI evaluators to determine why users have problems with a design. Students should be familiar with the visual and aural perception systems, and the cognitive processing mechanism (including attention, memory, and decision making), and how they constrain human performance with computer systems.

**Proposed outcome:** The details are to be determined, but assessment could include asking students to identify cognitive mechanisms and explain how they account for common errors.