ABET Course Syllabi for IND E 455: User Interface Design

1. Course number and name: IND E 455: User Interface Design

2. Credits and contact hours: 4 credit hours, 5 hours per week

3. Instructor's name: Thomas A. Furness III

4. Text book, title, author, and year
   - Course notes

4a. Other supplemental materials:
   - Selected Readings

5. Specific course information
   5a. Brief description of the content of the course (catalog description):
        Design oriented to cover fundamentals of user interface design; models on human computer interaction, software psychology, input devices, usability, cognitive and perceptual aspects of human-computer interaction, advanced interface, and research methodologies.
   5b. Prerequisites or co-requisites: IND E 351 or equivalent
   5c. Required, elective, or selected elective (as per Table 5-1) course in the program:
        Elective for d (Design).

6. Specific goals for the course
   - Demonstrate an ability to identify, analyze and solve a user interface design problem.

6a. Specific outcomes of instruction

   1. Demonstrate proficiency in the practice of user interface design in an industrial engineering context
      - Define a design problem
      - Identify customer needs
      - Generate design alternatives
      - Choose among the design alternatives
      - Justify the correctness of their design solution

   2. Apply engineering analysis to design problems
      - Identify which analytical skills are appropriate
      - Gather necessary data
      - Make necessary and appropriate assumptions
      - Complete analysis in a correct manner
      - Apply results of analysis to their design decision making
3. Manage themselves and others on a design project
   • Establish and meet deadlines
   • Communicate to others about their progress, results, and methods
   • Identify and implement an appropriate design method

6b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.
   c) an ability to design a system, component, or process to meet desired needs
   e) an ability to identify, formulate, and solve engineering problems
   f) an understanding of professional and ethical responsibility
   g) an ability to communicate effectively
   h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
   j) a knowledge of contemporary issues.

7. Brief list of topics to be covered:
   • Models of human-computer interaction
   • A practical interface design process
   • Hardware, software, and human factors elements associated with the design and use of interfaces
   • Sensory, perceptual, cognitive and psychomotor aspects of human-computer interaction in real and virtual environments.
   • Case studies on good and bad interface designs