1. **Course number and name**
   CptS 443: Human-Computer Interaction

2. **Credits and contact hours**
   3 credits, 3 lecture hours

3. **Instructor's or course coordinator's name**
   Chris Hundhausen

4. **Textbook, title, author, and year**
   D. Norman. 2013. *The Design of Everyday Things* (Revised and expanded ed.), Basic Books, New York. ISBN: 978-0465-050659. (Required)
   J. Johnson. 2014. *Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules* (2nd ed.). Morgan Kaufman, Burlington, MA. ISBN: 978-0-12-407914-4. (Required)
   C. Barnum. 2010. *Usability Testing Essentials: Ready, Set…Test!* Morgan Kaufman, Burlington, MA. ISBN ISBN-13 978-0-12-375092-1. (Required)
   Other supplemental materials
   Cognitive walkthrough. http://www.usabilitybok.org/cognitive-walkthrough.
   D. Kieras. 1993. *Using the Keystroke-Level Model to estimate execution times*. <https://emailwsu-my.sharepoint.com/:b:/g/personal/hundhaus_wsu_edu/EYdYvOM6cDZMu_R2z5TuTy8BisAnfsQt5PWkZLCRcLE5RQ?e=U5LSrd>.

5. **Specific course information**
   a. Catalog description: Concepts and methodologies of engineering, social and behavioral sciences to address ergonomic, cognitive, social and cultural factors in the design and evaluation of human-computer systems.
   b. Prerequisites or corequisites: Certified major in CptS, CE, EE, or SE. Junior standing.

6. **Specific goals for the course**
   By the end of the course, students will be able to
   - Design and evaluate interactive software by applying appropriate design principles and concepts (2a, 2b, 6a, 6b).
   - Employ user-centered design methods in the design and implementation of interactive software (1e, 2a, 2c, 2e, 2f, 2g, 6a)
   - Design, conduct, and analyze empirical studies that inform the design of interactive software (1b, 2e, 6b, 6c).
   - Apply analytical methods to the evaluation of interactive software (2e, 6a).
   - Communicate about, reason about, and critically review user interface designs through sketching, oral discussions, peer reviews, and well-written documents (3a, 3b, 3c, 3d, 3e, 3f)

7. **Brief list of topics to be covered**
    - Norman's design concepts (feedback, constraints, affordances, signifiers, natural mappings)
    - Cognitive walkthrough
    - Principles of human perception
    - Principles of human memory
    - Principles of human learning
    - Principles of human decision-making
    - Principles of human motor control and responsiveness
    - Human errors
    - Human-centered design
    - Early data gathering techniques
    - Low fidelity prototyping
    - Predictive modeling (GOMS and KLM)
    - Heuristic evaluation
    - Usability testing
    - Experiment design and analysis