

EEL4930 – Innovative Product Design

Credits: 3 credits

Text book, title, author, and year: Donald Norman, *Design of Everyday Things*, Basic books, 1988.

Supplemental materials: Instructor's notes and assigned readings

Specific course information

- a. **Catalog description:** This course introduces students to methodologies in design of products and services. Lectures, discussions, and problem solving exercises are used to explore the creative/innovative process in product design. Students learn to design based on the user/customer point of view, and student teams design assistive technology products based on their knowledge and enhanced innovative skills.
- b. **Prerequisites or Co-requisite:**
Senior level in good standing, or by instructor's permission.
- c. **Required, elective, or selected elective:** elective

Specific goals for the course

- To study well known principles in design interaction, i.e., basic rules that allow design from the user point of view.
- To enhance innovative problem solving skills.
- To explore creative and innovative processes in product design.
- To practice methodologies in design of products and services.
- To engage student teams in the design of assistive technologies.

Specific outcomes of instruction: At the end of this interactive course, students will:

- Understand building blocks of innovation, problem solving and design interaction
- Be familiar with processes and methods of innovation and product design, and systematic innovation and creative problem solving
- Be familiar with the process (and be able to apply it) of innovative problem solving: observation, definition, representation, ideation, evaluation and decision making, therefore enhance their creative and innovative thinking skills
- Work in teams to communicate, design and build products/services that are based on design principles

Brief list of topics to be covered:

- Introduction; Working with your team
- Becoming an innovative individual; engaging both sides of the brain
- Innovative problem solving: concepts, skills, techniques and methodologies
- Visualization; Inspiration by nature and art
- Use-based design and Nature-based design; Useful designs, Useless and "Un-use-less" designs
- Design for interaction; design rules
- Innovative product design: from idea to prototype to product
- Evaluations