EEL4930 – Innovative Product Design

Credits: 3 credits


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