

IEEM 3200 Product Design and Development

Instructor: Professor Chih-Hsing Chu (瞿志行), First Engineering Building, Room 823, 5742698

Class Time: Mondays 2:20~5:10PM

Course Website: TBA

TA: 吳翰昇 Room 727, 33931

Textbook: Product Design and Development, K.T. Ulrich and S.D. Eppinger, McGraw Hill, 5th Edition.

References:

1. Class-notes and related reading materials.
2. Product Design, K. Otto and K. Wood, 2000, Prentice Hall.

Course Description:

This course introduces the basic concept, process, methodologies, and empirical knowledge in new product development (NPD). Students are expected to learn fundamental knowledge in product design, to realize its interdisciplinary nature, and to position themselves in product value chain for future career.

In order to achieve this goal, students in group must realize one product concept. This project is to provide a real environment where students can experience and learn new product development in school environment. Each group is responsible for marketing analysis, product planning, product specifications, product architecture, concept generation, engineering design, prototyping, in addition to project management, scheduling control, project coordination, as well as liaison.

The project execution and the final grading emphasize the process, not the final result! The execution details of the project and the outputs produced at each stage must be recorded and well documented. All the discussion note, decision factors, and related documents among team members should be preserved and will be graded.

Project Scope

Each project team consists of 4 team members. Typical roles in a project team include project manager (PM), marketing specialist, industrial designer, design engineer, and manufacturing engineer. Note that the boundary and tasks of each role sometimes cannot be clearly differentiated (this is normal in real industry). Many activities must be conducted by team, not individually. Each group needs to conceive product concepts, generate sketches, and realize one design during the course of the project subject to functional, schedule, and budgetary constraints. In other words, students need to manage the project by properly controlling quality, time, scheduling, and if necessary cost.

Functional

1. As simple as possible (product development is more complicated than you think!)
2. The working prototype must demonstrate the original design functions and comply with the chosen product specifications.
3. The product must be a software or software plus hardware system in this class.

Schedule: details TBD

Budget: XXX NT\$ including the material and manufacturing costs for all the hardware components, but without labor and overhead.

Each project must complete a working prototype. We will have a tradeshow/exhibition in the end of the semester. Each group will make a poster and demonstrate the prototype for public in this event.

This course is not a typical engineering course conducted only via lectures and homework. We emphasize less on theories, but more on practices and learning of real-world experiences. Interdisciplinary design is the idea we want to convey throughout this class. Students are expected to spend a significant amount of time on the course activities. The grading will be determined by the product development process and team dynamics during the process, rather than the final result!

Grading:	Homework 20%	Class/Team Participation 10%
	Midterm 30%	Final Project 40%