

Course Syllabus of ISDN 2000 (Fall 23-24)

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Dear students, please find the course syllabus of ISDN 2000 below:

Introduction

This course introduces what design is and why it is valued. Design is the purposeful act of creative problem-solving. It is a creative discipline across art, engineering and social science, **it has and can significantly improve the life qualities of human beings.** Design is everywhere, it plays an increasingly important role nowadays, in tackling complex challenges such as climate change, urban heat island effect, social aging, shortage of housing, unsatisfied living conditions in megacities, shortages of food etc., since we need to integrate knowledge from multiple areas, have the skills of design thinking, work in or even manage a team consists of experts from multi-disciplines.

The course will include both lectures (theories, history, cases analysis, etc.), field trips, guest lectures from industrial partners, and laboratory works (group work, guided hands-on design projects based on real social issues, experiential learning, physical/digital prototyping, presentations). Students will experience experiential learning, cross-disciplinary teamwork, and student-centered learning. For Non-ISD students, you will get a good taste of ISD learning mode.

Topics to be covered:

1. What is design

Introduction to the typical design disciplines (architecture, urban design, industrial/product design, etc). The importance of design, how designs interact with technological development, and how designs benefit and shape our society.

2. What contributes to a good design

A brief introduction of Design history, how important design movements are rooted in the societal background, and how design shaped our society. Good design cases analysis, fundamental design principles such as **PBL, User-centered design, Aesthetic, Sustainability** etc. Good design cases demonstration.

3. How to design- Idea generation

Considering the following important contributors: societal needs, environmental and social impact, scientific principles/ technical routes, demands of novel technologies, business viability, etc. ***Visit or guest talks from local design industries will be included.***

4. How to design- Problem, needs analysis

Students conduct fieldwork to yield insights for core problems and needs, and narrow down to central design opportunities. Design thinking method will be introduced and provide frameworks for students to conduct group projects of this course. Scientific survey analysis methods will be introduced.

5. How to design- Creativity

Methods and skills of creative design will be introduced. Through cases studies and group works, students will learn different ways of creative thinking and develop more innovative and mature ideas on the design project. How to integrate ***scientific principles and innovative technologies for design purposes will be introduced through cases***, and students are encouraged to explore their own interested topics with the support of instructor and TAs.

6. How to design- Aesthetic

Essential aesthetic design principles will be introduced, in combination with colour science, design psychology and harmony guidelines. Lab works will include hands-on experience of aesthetic study for design.

7. How to design- prototyping

Introduction to quick prototyping using paper, cardboard, foams or other materials. Students will learn the properties of typical materials, and transfer their design ideas into physical prototypes, and can conduct user experience tests and technical experiments.

8. Design presentation

Important design presentation skills, and performance, to help students better understand the holistic design process and improve public communication skills, which is very beneficial for future career and entrepreneurial development.

Assessment approach and weight

Grading type: **Letter Grades**

The course will have a series on-class (e.g. lab work) assignments, and one design project, one short final individual report. The assessment will be based on all the assignments, design project and individual report, covering the evaluation aspects of: Application of critical thinking, Evaluation of information and sources, Problem definition, Cultural awareness, Mode of communication, Aesthetics

Weight:

assignments 35%

design project (including final group presentation) 50%

individual report 15%

Textbooks

The instructor will provide the main learning materials, students can refer to (but not limited to) the following books:

- Bauhaus: Weimar, Dessau, Berlin, Chicago. Hans Wingler
- The Ten Principles of Good Design. Dieter Rams
- Colour and Light, Spatial experience. Anter, Karin Fridell. (2017). Routledge
- Design Thinking: understanding how designers think and work. Cross, Nigel. (2011). London: Bloomsbury.
- Graphic Thinking for Architects & Designers, Paul Laseau