

ARTD 230 / ENG 298 / TE 298

Design thinking / need-finding

Fall 2019 / Tues Thurs 2.00 – 3.20 pm, Room 306, Flagg building

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NB At this point it is not clear whether this course will be delivered on campus, or remotely, or in some hybrid combination so some aspects of delivery may change. The details of weekly sessions have been omitted for that reason.

The aim of this course is to introduce you to human centered design practice, (HCD) as a basis for problem finding and opportunity identification, an invaluable pre-cursor to good innovation development. It is focused on determining people's needs and collaborating with them in developing design solutions which address those needs This course is operated in a rather different format from most of the courses you have experienced at UIUC and we hope it will be a valuable and transformative experience for you. It remains an experimental learning experience and one which requires your active participation, as well as your continued reflection on your progress. Successful participation will require getting involved with the fuzzy front end of design development, where design requirements are often ill defined or ambiguous, where problems can be wicked and design solutions hard to test in familiar quantitative ways. We aim to give you some tools and strategies to navigate this zone of ambiguity.

Design thinking is a term with origins in industrial design practice, rather than the more quantitative realm of engineering design and design science. It describes a human-centered approach to design and innovation in products and services, addressing the tri-partite requirements of feasibility, desirability and viability. This involves considering all aspects of the relationship between people and the products, services and experiences they will make use of, including functional, visual, tactile, social, contextual and emotional aspects. It involves using a variety of thinking processes - with an emphasis on the use of observation, empathy, ideation and modeling to discover and address opportunities for design propositions, along with the communication of design outcomes by diagrammatic and narrative means. Design thinking also has many applications in the social realm, impacting many areas of human activity. This kind of design activity is best done in teams, hence the project team basis for this course.

Thinkers about design, such as Jane Fulton Suri of IDEO, have characterized the historical development of human-centered design practice as starting with “ **design for** (people), proceeding to **design with** (people), and aiming towards **design by** (people)” Our activities on this course are located in the middle of that spectrum, emphasising designers collaborating with people to better answer those peoples needs

The course will be centered on design projects carried out in teams comprising no more than six people from different disciplines. Much of the course time will be involved with the actual project work but there will be a series of support lectures covering the nature of innovation; discovering user needs and the use of empathic research methods; ideation, conceptualization and prototyping; communication strategies; teamwork and team building;

the nature of multi-disciplinary teams. In the time that we have the outcome will be design concepts and proposals, rather than fully resolved designs.

The emphasis of the course is on problem-finding, as problem framing is an essential part of the design process, but we will be giving you opportunities to exercise your undoubted problem solving skills in the later stages of the semester.

The course uses “Innovating for people” by the LUMA Institute as the course textbook and each group will be given a photocopy copy of this as we start. Other texts and videos will be suggested as we go along and you are encouraged to read these. The course will use two 80 minute time slots with usually a mixture of group session / lectures on one day and studio workshops on the other. Meetings with users will need to take place at various times throughout the week, not always in the class time, so you will need to make particular arrangements for these, This may be a looser pattern of activity than some of you are accustomed to but I am sure you will adjust quickly.

Course outcomes

By the end of the course, you should have.....

- 1/ developed familiarity with the process of determining user needs and identifying design opportunities
- 2 / developed collaborative design skills by working with people in the development of design solutions which address their needs
- 3 / gained experience of a number of research, ideation, prototyping and team-working strategies for collaboration within your project teams
- 4 / developed communication skills in presenting research findings and design proposals to others
- 5/ developed your ability to reflect individually on the processes involved in these design activities

Assessment/submission requirements

There will be two assessment events, with grading to reflect the degree to which you have attained the learning outcomes identified above

1/ Production of an Individual Reflexive design journal / 25%

This journal is intended to develop your ability to reflect on your experiences on the course. You should aim to produce one page per week as an account of your work within the projects and in your team. You should use it also as a scrapbook to record inspirations and relevant research activities. Each week you should aim for an entry which describes three design opportunities or interesting design interventions. Each case should be an image and a paragraph of text. The journal is intended to be honest and will be confidential to the faculty unless you wish to share it more widely. Photos and links to websites, articles, books etc. are most welcome. The journal will be submitted as a PDF file to the course Box folder. Expression and inventiveness in presentation are positively encouraged. The journal should relate to each of the four phases of the course

2/ Collaborative design project / 75%

In teams of five or six, composition to be determined at the start of the semester, you are to research a user group, define design opportunities for an identified need of that group and work collaboratively with them to produce design proposals. The results of your investigations will be presented to the class in presentations in at least three sessions during the semester. Inventiveness in presentation is encouraged but content is paramount. All team members will

receive the same assessment so it is in everyone's interest to collaborate. Instances of irreconcilable breakdown of relationships will be dealt with on a case-by-case basis. You will be able to comment confidentially on the performance of others in the team in your journals. Final presentations will be in the form of a Powerpoint presentation and a 20 page report from the group (This should not be simple reprints of the PPT slides)

Assessment

Assessment for each of the course components will be on a five point scale based around 2 as the centre

2 = wonderful, results are those expected for satisfactory completion of the course/component

1 = less than wonderful

3 = more than wonderful

4 = a lot more than wonderful

F = unsatisfactory or non-completion of course or component

For group projects, all members get the same grade unless there is solid evidence of non-participation (this is rare but occasionally happens) Almost never does one members grade get increased because they have done all the work (they say)

Grades for components are averaged out, weighted by the component percentages

Consistent wonderfulness is likely to result in A- / B+ for the course but this is not guaranteed. I will try and give feedback on performance at each of the presentation stages

Submission requirements

You will be invited to the class Box folder for submitting presentations in advance of events. When you do this please use the following protocol for subject lines

ARTD 230 / TEC 298 / ENG 298 / title of presentation / presentation event / your name(s) / date

Also if you are sending me emails, please use the course number in the subject line so that we can find them!

Location of sessions for on campus delivery (this may change)

Room 320, Flagg building. Each team will have a workspace in that room with key access, so that you can work in the space at times other than class times. We encourage you to use the space as much as possible. At this point there are no other classes scheduled in that room but other students will have access to use the printers in there. You should bear that in mind when leaving work, tools and personal possessions about. We will have some locker space available in the room to lock things up in. We may sometimes use other rooms for lectures and presentations.

Course material

All lecture PPTs from the course will be available in a Box folder that you will be invited to, and to which you will post your presentations and journals. The PPTs will not contain any copyrighted material displayed in class for educational purposes.

Outline of the course

The course is organized in four phases and the outline shows critical dates and the times of lectures and briefings, In the first two weeks we will establish the composition of the teams. We will

try and get our teams to be broadly composed with a mixture of disciplines. If there are other students you do not feel comfortable working with you just need to cite “personal reasons” and we will work around that.

i6 An Illinois approach to design thinking

Phase 1 Inquiry

To quote from “Innovating for people “

“Innovation begins and ends with people. It calls for keen and caring observation. The disciplined practice of Human-centered design involves careful investigation. It requires curiosity, objectivity and empathy. You need to engage all of your senses (looking, listening and so forth) in pursuit of meaningful findings “

Observation is critical to establishing user needs and is also the first part of building a relationship with users which will be essential in the later stages of the semester. The text broadly describes three methods of inquiry – Ethnographic research, Participatory research and Evaluative research. We will engage in at least three of the methods within these topics and compare results

Phase 2 – Insight

“Innovation is not a light bulb moment of genius, It calls for deep understanding and rigorous discernment.....The disciplined practice of HCD involves thoughtful analysis. It requires critical thinking and problem framing. You need to identify patterns, determine priorities and translate your research into actionable insights “ (Innovating for people)

So this phase is about generating the insights which will inform the design phase which follows, using the approaches of people and systems, patterns and priorities and problem framing. This will also involve considering the needs of stakeholders in the process so whilst some of these approaches can be done by the team on its own, others will involve working closely with your user group

Phase 3 – Ideation

And now the part you have been waiting for...you get to design some things which address the needs you have identified.

“Innovation puts great ideas into action. It calls for making things happen in a resourceful and resonant manner. The disciplined practice of HCD involves imaginative, visual expression. It requires a commitment to successive improvement through frequent iteration. You need to think with your hands to bring new ideas to life.” (Innovating for people)

Bringing ideas to life means prototyping on a whole variety of levels. We will concentrate on quick and dirty prototypes where returns are faster and the process more immediate, using

sketches and sketch models to do this.

Phase 4 – Involvement

This stage involves working with users in a co-design activity as together you develop, articulate and test your ideas. You should be going back to your users with demonstrations of your ideas for their critical feedback. A particularly important feature of this stage is presentation and communication to them as well as the rest of the class. Establishing a narrative or story for your work is a very effective approach at this stage and we will introduce you to a number of ways of doing this

Phases 5 and 6 of the Design thinking methodology are **Implementation** and **Informing** but we are not anticipating we will complete those stages in this course. **Informing** will be a constant feature of our work at various stages however, with a variety of different presentations

Books

Innovating for people , a handbook of Human-centered design methods Luma Institute
A sound and eminently practical guide to methods of eliciting and evaluating user needs and desires with lots of very useful approaches. Highly recommended. Out of print often but available electronically on Amazon

Useful additional reading

Research methods for Product design / Alex Milton and Paul Rodgers

This is from the series Laurence King Portfolio skills for product design...all are excellent and aimed at students with a wealth of helpful information about tools and techniques which de-mystify and enhance the product design process

100 things every designer needs to know about people Susan M Weinschenk

How behavioural psychology offers insights in the complex relationship between people and the world, with particular application to the world of websites and UX, but with wider relevance as well.

Creative confidence / Tom Kelley

A good account about how creativity is a muscle we all possess that can be nurtured

PresentationZen Design...Garr Reynolds **

Everybody who uses Powerpoint or does presentations of any kind should read this. Lots of solid design advice for people who don't have the benefit of a Graphic design degree. Enough connection with Zen philosophy to make it interesting for people inclined that way (like me)

Hidden in Plain Sight Jan Chipchase with Simon Steinhardt
HarperCollins, 2013

“Jan Chipchase is one of the world’s experts on emerging markets; his regular reports from the field are a fascinating way to stay aware of the bubble many of us live in while we try to design for the whole world. His blog is also great to follow.”

A Field guide to human centered design / IDEO

A great practical guide, available as a free download from the IDEO website, concentrates on social applications of HCD and design thinking

Faculty

David Weightman is a Professor of Industrial Design at the School of Art and Design. After obtaining his Master’s degree in Industrial design (Engineering) from the Royal College of Art in London, he worked at the Indian Institute of Technology in Delhi, India, then taught on the Industrial Design Transport program at Coventry University. Latterly, he was the Dean of the School of Art and Design at Staffordshire University and a consultant to Yamaha, Massey Ferguson, British Rail, BBC television and the Tate Gallery London. Now in the US, his teaching and research involves exploring the new relationship between product users and the design/ manufacturing process with a focus on the effect of new technology. He was a member of the National Association of Schools of Art and Design working group on the future of design education and recently served as Midwest District Vice President of the Industrial design Society of America. He has recently completed a Residency as an IDEA Studio Scholar at Autodesk LLC in San Francisco

David Weightman / Professor Industrial design / UIUC / July 2016