

User Interface Design
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Lecture - 01
Introduction

Welcome to the online NPTEL course User Interface Design. So this is the first lecture and in this lecture we will just talk about what we are going to learn in this the next lectures and what this course is about and who can get benefited with the course. So if we talk about user interface design first it is important to understand what is user interface. So here there are two components, two words are there, one is user and the next is the interface.

So user we can all understand what is user. It is the viewer or whoever is using it, what they are using or the people who is the target audience or whoever is viewing interface or viewing some interface. So the component interface is something difficult to understand. So what is the interface, between what? So interface is something in between of two different things. So one, this interface is the interface between the user and the computer.

So it is the human-computer interface. So the interface between computer and the human is the user interface. And here the computer can be tablet. It can also be the computing device for example laptop, mobile phone and any other things. Or it can be the just the graphic user interface of any product. For example many of the smart products have the graphic user interface.

For example when we change the temperature of AC using the remote, so they also display some information. So that is also the information display. So that is also the interface between man and machine. So instead of just human-computer interface it can be man-machine interface. So in between man and machine what is the interface going on.

And in many other cases for example if there is a digital display in front of refrigerator, in front of in the TV how we operate the navigate between different channels of TV. So all this interfaces are coming within the graphic user interface what is the GUI of this user interface design. So all

these things will be part of the course which is user interface design and they follow a same process of design or similar process of design.

The basic background or the methodology is same. So one aspect of this design which is user interface design is the user. How user think and how they perceive particular things which can be through icons, which can be through words. So how these words, icons, what we see in front of the digital display or the GUI or the graphic user interface, what are the meaning of this and how people react to it. And the other part is how we design.

Based on the understand of people's perception, people's interpretation how we design. So we also need to know the design elements, the principles of design, the contemporary trains of design, what is the platform, on which platform we are designing. What is the brand for which we are designing and what is the final meaning we want to give, we want to communicate with the user. So that also is a important part of the interface designers.

So we can think about three way node. One is the user interface, so that is the designed thing. Another is the user and another is the designer. So designer need to understand what are the users thinking and what is the interface should look like. So that is how designers between these two if they can design and draw the connection between this user and the designed product and how the interface is linked. So then this design will be successful.

So and also there are multiple terminologies for the similar concept. So instead of user interface design, so you might hear many other terminologies which kind of signify the same or the similar subject. Might not be exactly the same or the similar subject. For example user interaction design. So user interaction design is also the term in many design schools. The design company we use this term user interaction design.

So interaction is again the way user interact with the between the man machine interaction. The way the interaction is going on. So that is how the similar subject can be called user interaction design. And there the interaction part will be the way interaction is happening that will be

emphasized. And another terminology can be user experience design. So user experience design is a broader umbrella, not just user interface design or the experience of user around any product.

So here we are talking about the digital interfaces mainly, the web interfaces or the mobile interfaces or the mobile applications or the computer websites. And the experience can be based on a special experience. It can also be the experience of a 3D space the architecturally how the experience is. Or experience of a product. It can be experience of a particular hardware product which does not have a graphical user interface.

So that every experience or the experience of a particular journey. So user experience is a much broader terminology. So user experience designers talk about the experience of a particular system or product through the users mind. So the user experience is not just confined within a interface design. So that is a broader subject. Now another terminology can be human computer interaction design. So human-computer interaction design defines a very it is a more defined one.

So it is just human-computer and the interaction between human and computer. That is the subject we call human computer interaction design. So many other, so these are the main terminologies which come from the academia and also there can be few terminologies which come from the company. So for example GUI, so graphic user interface. So it is the graphical user interface or the front-end design can also be called GUI.

And then there are job profiles like for example UIUX designer or the user interface designers or the user experience designer which is a little broader terminology. So they conduct generally the user testing and the user research how people behave. So we will talk about this, how user research and these things are done within the course. Also there is a terminology called visual communication designer.

So visual communication design is not exactly same. It is bit different but we will discuss about the communication part of interface design. So within the interface when we are designing the GUI or the graphic user interface the visual elements or the graphical elements how they

communicate visually with the users so the digital website or the application how they are communicating graphically with the users and that is the visual communication design.

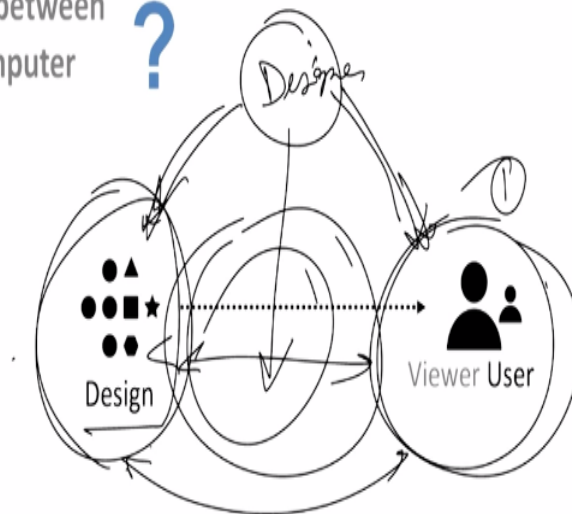
So visually what is the communication going on. But visual communication design is again a broader terminology. So it kind of overlaps with the user interface design. So it does not deal with the user experience. It only deals with the visual part or the color, texture, the type of tabs or the navigation is going on, that visual part of it or the front-end part. But within visual communication there can be many other domains which we will not discuss.

For example animation or the graphic design or the print media, the traditional way of print media, of lithograph, scenography, or linography. So those are also part of the visual communication design or creating feature film, set design. Those can be a visual communication design. So how the set is visually communicating with the people, the scenography or how animation, it can be painted animation or just a one single frame or painting or the scroll painting everything how they are communicating with the people.

So that is part of visual communication design or the bigger umbrella of visual communication design. We will just talk about the visual communication design on digital platform. So how in digital platform when we are designing the interface between human and computer what is the visual communication element here. So it overlaps with the subject. So part of it we will discuss and the other terminologies, the other part of the user experience design we will discuss focusing on the digital interface. So what is the interface?

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Interaction between Human-Computer Interface



So this is interaction between human-computer interface. So this interface is the interaction between human-computer. So that is why this is also called interaction design. So it can be called human-computer interaction design. So there are two component, one is the design and another is viewer or the user and this is the interaction going on between these two interface, a human-computer interface. And there is the designer who should understand the design element.

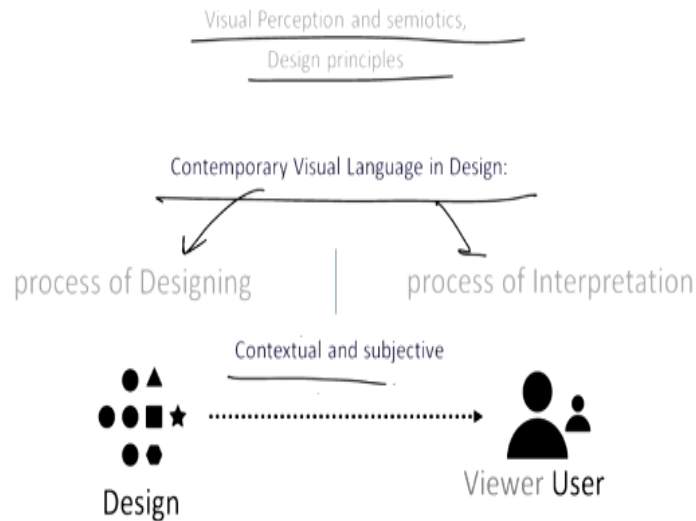
Who should understand the users and also create the interface between these two. So part of the course, we will be talking about the people's perception or the how people perceive and the process of user testing, dealing with the user research and how to take user's feedback and how they create meaning for example semiotics and semantics. That will be discussed. So that will be part of the user's centric approach of the course.

Another is the part of the design element. So we will be talking about the design elements. We will be talking about the typography. We will talk about the contemporary design trends, how it changes and the paradigm of design, different platforms of design that will be part of here. And then the interaction or the interface or the methodology of designing this.

So the many of the modules we will be talking about the methodology of how to connect the user with a computer interface or the machine interface. So what is the process between them and

what is the process of designing it and how the different paradigms are shifting and how different.

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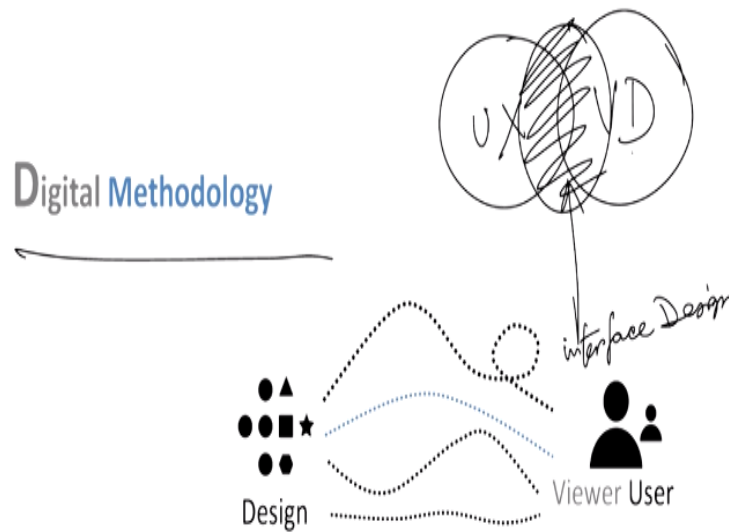


Also we will be talking about in the later stage of the course what are the emerging platforms of different computing devices. So based on the process of designing and the process of interpretation this course can be divided into two. So in the process of designing the elements, principles, and typography and how it changes the contemporary architecture is there. And then part of it will be design semiotics, visual perception and how to conduct the user interface, user research and user survey.

Then we will also talk about the visual perception, semiotics and principles. How it is combined and culminates into the contemporary visual language. So contemporary visual language is actually between these two. So how contemporary design language changes based on the design platforms as well as the viewer's perception. So contextual and subjective things, so this contextually correlates the users with the design element.

So how the design element changes based on the perception of people over the time, over the place and over different spaces of the world and that we will be discussing and also the typography typefaces. How the different typefaces have a different connotation, different meaning and different style into it. So all these parts will be covered within this course.

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Now while connecting this, which is the interface. So when this interface is designing, is being designed based on the connecting the design elements and the viewer. So that interface might have different multiple ways of connecting. So we will be discussing what is the method of connecting this. What is the optimum or the best method suitable to connect this and while discussing that, we will discuss the methodology of creating a design.

So there can be multiple different options. So we will talk about a multivariate design option creation. So creating different design options and then selecting the best. So that is the process of design methodology which we will be discussed in few modules and it has a large component in the course, what is the methodology part of creating user interface and within this methodology there will be discussed the user research component which is coming from the user experience design part.

So user experience design part will be discussed based on only graphical user interface which is a human-computer interface design. Not the other special architectural part or the product design part of it would not be discussed. We are focusing on the graphical user interface and then the next part will be the visual communication, how to delineate the next layer or putting the color and all this detailing it or the visual communication design part.

So part of the visual communication design will also be discussed. So if you look at the UX part and then the VD part, so this will be something interface design will be in between this. So interface design overlaps with the user experience or the research and feedback and testing part and also the visual communication design part. So it both will be covered focusing on the interface design. Now design methodology will be discussed, that I have told.

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And then types of digital media technology that will be discussed in the later stages and the advancement of digital media technology, the brief games will be given in the, what are the different trains coming into them, design methodology. Then there will be a software demonstration on while creating the user interface different softwares. Just a brief introduction will be given and it will be just introduced to you. But complete demonstration will not be given.

And while creating the basic layout how a different software like balsamiq you can create information architecture or the low fidelity or the initial stages and later you can in visual communication design part you can use the software, Photoshop and InDesign. Photoshop or InDesign are very common software. So it would not be discussed because there are lot of videos in YouTube on digital platform. You can go through that and most of you already know that.

And there is another software which is used for eye tracking device, for user testing, to test whether the final design works or not. We can track user's eye and that can tell whether this user

interface is functional or not. So eye tracking will be just it will be showed to you how eye tracking is done and the product will be shown to you in the later phases of demonstration. So these are some reference books which we can follow in different parts.

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Reference books

- Krug, S. (2006) Don't Make Me Think, Rider publication. ↙
- Lauer, D.A. and Pentak, S. (2008) Design Basics, Wadsworth Publishing. ↙
- Lupton, E. (2004) Thinking with Type: a critical guide for designers, writers, editors and students, Princeton Architectural Press. ↙
- Ruder, E. (2001) Typography: a manual of design, Verlag Arthur Niggli. ↙
- Norman, D. (2013) Design of Everyday Thing, Basic books ↙
- Norman, D. (2005) Emotional Design: why we love (or hate) everyday things, Basic books
- Leborg C. (2004) Visual Grammar, Princeton Architectural Press.
- Lidwell, W., Holden, K. and Butler, J. (2010) Universal Principles of Design, Rockport Publishers.
- Anshel, J. (2005) Visual Ergonomics Handbook, Taylor & Francis.
- Manovich, L. (2001) The Language of New Media, MIT Press
- Jim K. (2010) Design Basics Index, How books
- Jim K. (2010) Colour Index, How books

So there are books on interaction, user experience design, interaction design, basic design, Stephen and Pentak and then other focusing on the typefaces these are the books and Designing of Everyday Things by Donald Norman, again the experience of people. But this is mostly focusing on the product design and other design by other books by Donald Norman, Emotional Design.

And other books you can go through it and so this is the list of the books, reference books apart from the study material and slides which will be given to you and the lecture, video lectures. These are the study materials which you can follow for better preparation.