

Introduction to Human Computer Interaction
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Lecture – 01
Introduction to Human Computer Interaction

Hi, welcome to this course on Introduction to Human Computer Interaction. This is Spring 2018. I am PK, I am a faculty at triple IIT, Delhi, I have been teaching this course for some time at triple IIT, Delhi. So, I am offering this course on and detail this and stuff.

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Here is a flyer that I have actually used for telling people about what the course is all about. So, on the left, you will see topics that we will covered contextual inquiry, task analysis, sketching, human factors, low fidelity and high fidelity prototyping, visual design, usability engineering, usability evaluation and information visualization.

Broadly, the goal for me to offer this course is to actually look at these three post conditions, what to say that is when you complete the course; you should be able to do these three things well which is understand what makes interfaces more or less useful. Design and build useable interfaces to be able to use tools to actually design and own the interfaces. Scientifically evaluate the usability of the given interface right; so, those are my three goals for this course.

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Who am I?

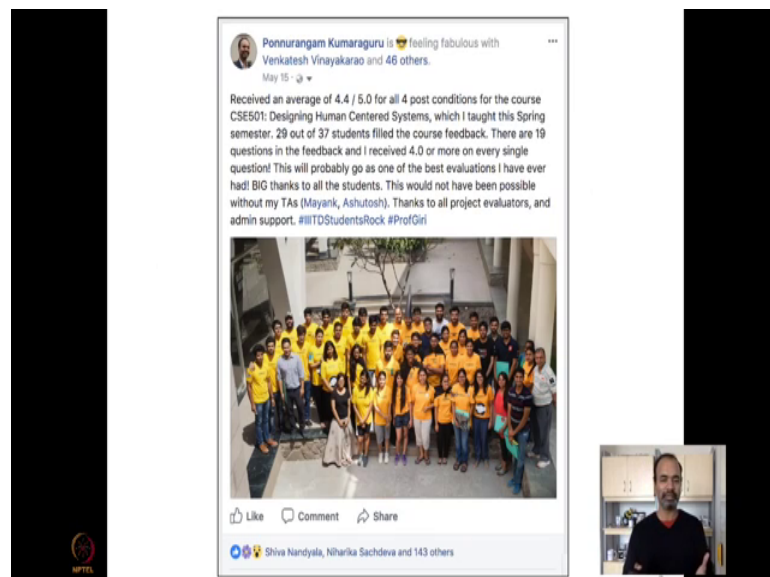
- Associate Professor, IIIT-Delhi
- Ph.D. from School of Computer Science, Carnegie Mellon University (CMU)
- Research interests
 - Human Computer Interaction, Privacy, e-crime, online social media, and usable security
- Co-ordinate and manage Precog, precog.iiitd.edu.in
- Founding head, CERC cerc.iiitd.ac.in
- Courses that I teach @ IIITD
 - Designing Human Centered Systems
 - Privacy and Security in Online Social Media
 - Research methods / Advanced research methods
 - Foundations of Computer Security

Carnegie Mellon



As I said I am a faculty at triple IIT, Delhi some of my research interest are human computer interaction, a privacy crime and more often. Now, I spend more time on social computing and topics surrounded.


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Ponnuram Kumaraguru is feeling fabulous with Venkatesh Vinayakao and 46 others.


May 15 · 🌐

Received an average of 4.4 / 5.0 for all 4 post conditions for the course CSE501: Designing Human Centered Systems, which I taught this Spring semester. 29 out of 37 students filled the course feedback. There are 19 questions in the feedback and I received 4.0 or more on every single question! This will probably go as one of the best evaluations I have ever had! BIG thanks to all the students. This would not have been possible without my TAs (Mayank, Ashutosh). Thanks to all project evaluators, and admin support. #IIITStudentsRock #ProfGiri



Like Comment Share

Shiva Nandyala, Niharika Sachdeva and 143 others



So, what I am what I am showing you here in the slide is the kind of responses that I have had for the course that I have taught here at triple IIT, Delhi, right. So, this is the course that I have been teaching it for 6 times. Now, in campus in the last 6 years and every time when we finish the course, we actually have something called as building

better interfaces where all the students in the course wear the same t-shirt. So, to say and also showcase the product projects that they have done and I get external people to come and evaluate the projects. So, in this picture people who were not in the t-shirt are the external evaluators and there are also teaching assistants in this picture.

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So, just to give you an hp background on my experience with NPTEL I have already taught this course called privacy and security online social media on NPTEL.

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So, it should be easy for to get the course rolling pretty well for each one of you over taking this course.

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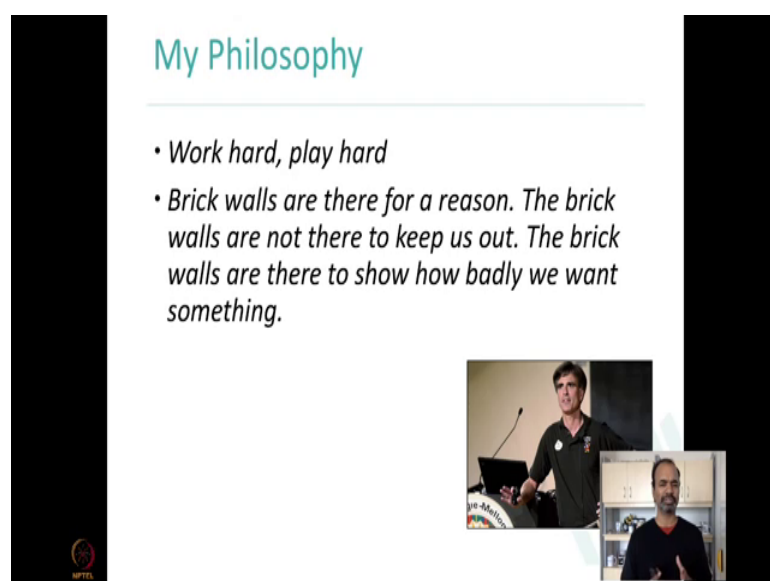
Building Better Interfaces

- https://www.facebook.com/ponnurangam.kumaraguru/media_set?set=a.978806875477959.1073741876.100000459677395&type=3

The slide features a teal title, a list with a blue hyperlink, and a small video thumbnail of a man in a dark shirt speaking. The MPTEL logo is in the bottom left corner.

So, I let you to actually go look at this link which is which showcases the building better interfaces that we have been doing in campus here. So, it will showcase how when we finish the course what kind of things that the students end up doing what kind of things that they showcase above their product.

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My Philosophy

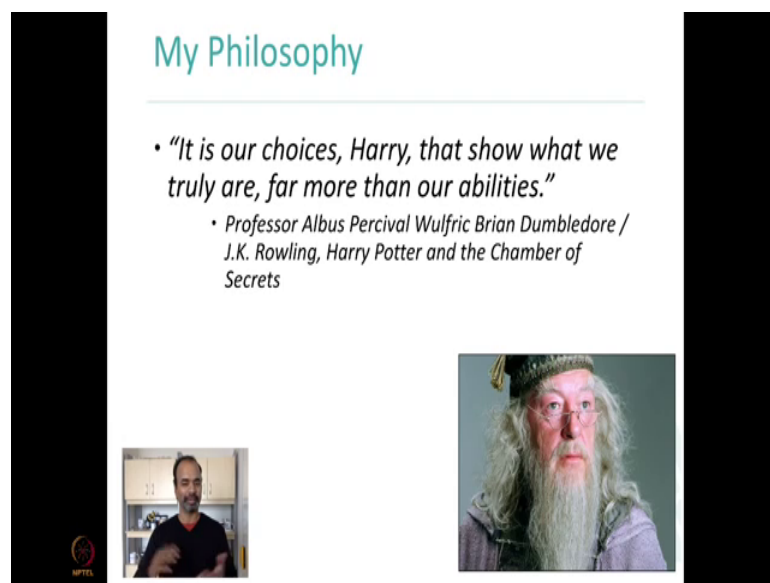
- *Work hard, play hard*
- *Brick walls are there for a reason. The brick walls are not there to keep us out. The brick walls are there to show how badly we want something.*

The slide features a teal title, two italicized bullet points, and two video thumbnails: one of a man at a podium and another of the same man from the previous slide. The MPTEL logo is in the bottom left corner.

So, let me go through some philosophical things because I think this will enhance you to understand how the content that I am delivering for this entire semester. So, first philosophy right work hard play hard one of the biggest influencers on me particularly for in terms of the work that I am doing Ronnie parse, this is Professor Ronnie parse who used to be a faculty at CMU during his last lecture he gave this sentence in stocks and brick walls are there for the reason the brick walls are not there to keep us out the brick walls are there to show how badly we want something.

So, I strongly believe in this philosophy and I think as you can see in your life also that brick walls are always there I am a brick walls. So, if in this course because you have to actually take the quizzes take the home works exams that I am going to set and you have to actually do well for you to complete the course satisfactorily.

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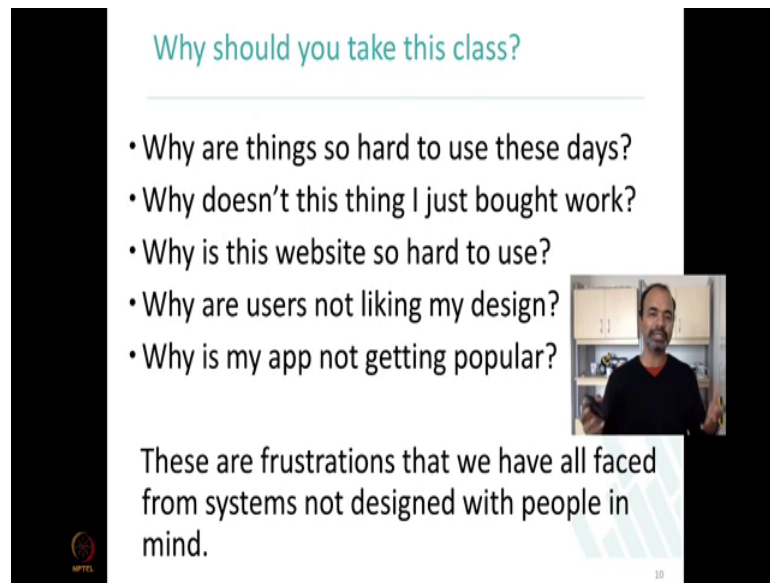
My Philosophy

- *"It is our choices, Harry, that show what we truly are, far more than our abilities."*
- *Professor Albus Percival Wulfric Brian Dumbledore / J.K. Rowling, Harry Potter and the Chamber of Secrets*

The slide features a small video inset of the speaker in the bottom left corner and a portrait of Professor Albus Percival Wulfric Brian Dumbledore in the bottom right corner. The NPTEL logo is visible in the bottom left corner of the slide.

And I am sure many of you were fans of Harry Potter we have known this line it is of choices Harry that show what we truly are far more than our abilities right. So, this was set by Dumbledore, I believe in this philosophy also very much that is you taking this course itself is a choice that you are making, then are I think about 200 plus courses in NPTEL the semester and you can take only four at the marks because of the constraints in the way by which you can take the exams, but the choices that you take the choices that you make are the ones that are going to define who you are not more than probably our abilities ok.

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Why should you take this class?

- Why are things so hard to use these days?
- Why doesn't this thing I just bought work?
- Why is this website so hard to use?
- Why are users not liking my design?
- Why is my app not getting popular?

These are frustrations that we have all faced from systems not designed with people in mind.

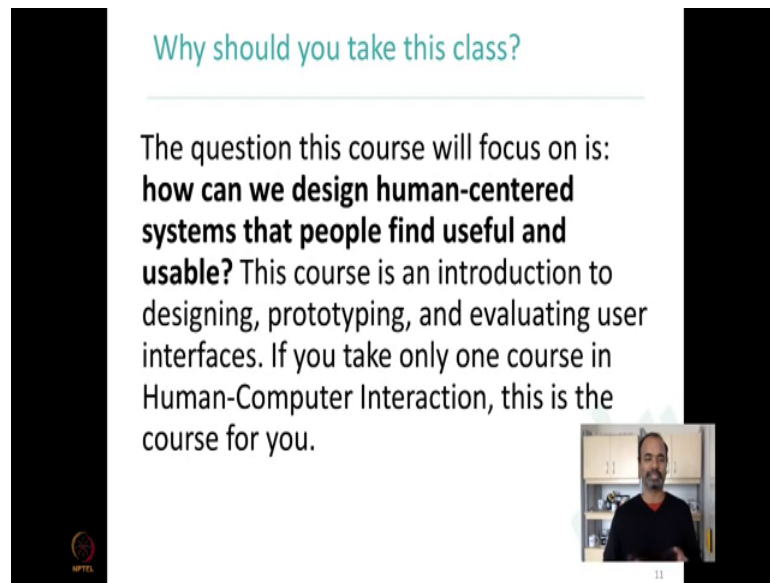
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So, now why should you take this course right the whole idea of human computer interaction and the way I pitch this course is if you are going to take HCI one on one and if you want to get introduction to what human computer interaction is this is the coefficient all right. So, I am sure in your in your life you would have actually faced this question these questions, but I often sometimes more often sometimes not very often why are things.

So, hard to use these days why does not this thing I just bought worth why is this website. So, hard to use why are users not liking my design why is my app not getting popular I am sure many of you have worked on projects many of you have build things that people start using it, but then they do not come back it does not become viral you can probably get 100-150 users or even five hundred users possibly easily, but if it has to go beyond that make it ten thousand maybe twenty thousand it is actually pretty hard.


It is not just the functionality that matters it. So, sometimes it is also the usability that will actually help make these systems more popular I am sure these frustrations that we have all faced from system not designed well will be kept in mind while this course start.

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Why should you take this class?

The question this course will focus on is: **how can we design human-centered systems that people find useful and usable?** This course is an introduction to designing, prototyping, and evaluating user interfaces. If you take only one course in Human-Computer Interaction, this is the course for you.

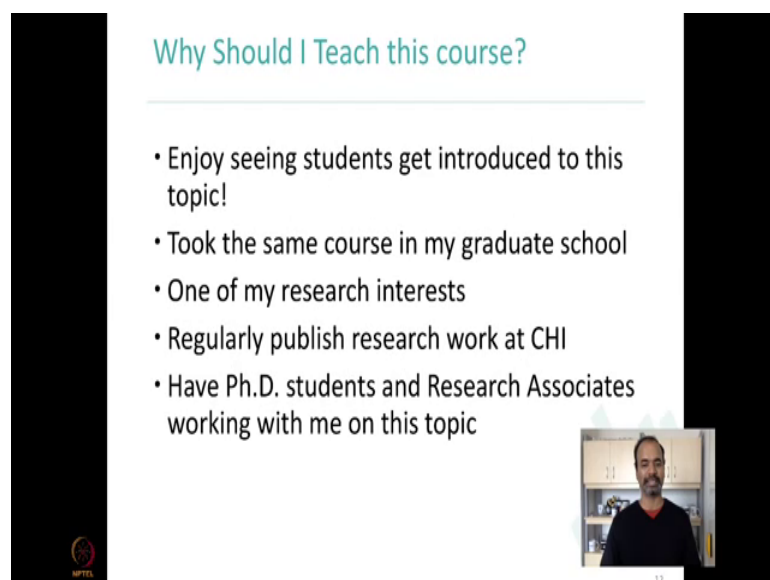


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Here is a primary question that I will actually focus on this class how can we design human centered systems that people find useful and usable you will see this word useful and usable coming many times as we progress in this course as I said this course is an introduction to designing prototyping evaluating and if you are going to take one course this is probably the course which is HCI one on one.

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Why Should I Teach this course?

- Enjoy seeing students get introduced to this topic!
- Took the same course in my graduate school
- One of my research interests
- Regularly publish research work at CHI
- Have Ph.D. students and Research Associates working with me on this topic



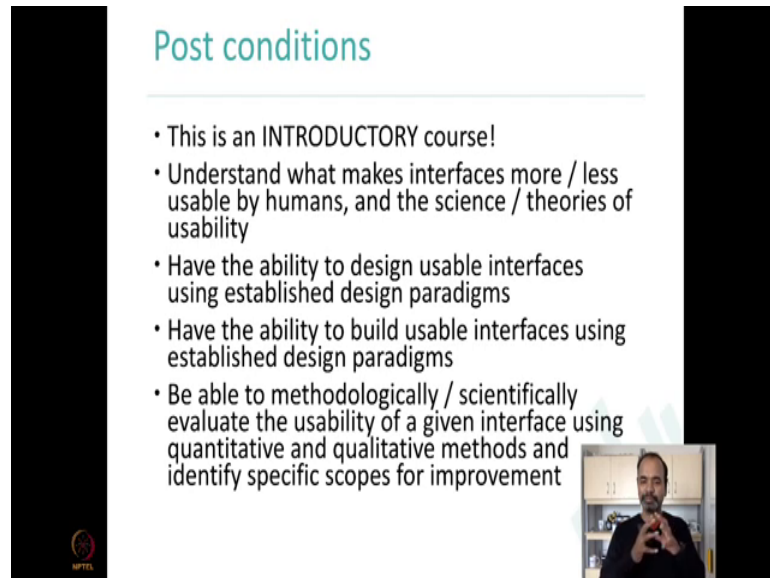
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This slide features a teal title, a horizontal line, and a bulleted list. A small video thumbnail of the speaker is positioned in the bottom right corner. The slide is framed by black vertical bars on the left and right sides.

So, to say I said some of these things before why should I teach this course enjoy seeing students do many of these things I have talk to this many times I thought, I have taken

courses on these topics in my in my grad school and I have also have research students and researchers who say that actually this some aspects of this topic.

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Post conditions

- This is an INTRODUCTORY course!
- Understand what makes interfaces more / less usable by humans, and the science / theories of usability
- Have the ability to design usable interfaces using established design paradigms
- Have the ability to build usable interfaces using established design paradigms
- Be able to methodologically / scientifically evaluate the usability of a given interface using quantitative and qualitative methods and identify specific scopes for improvement

The slide features a small video inset in the bottom right corner showing a man with a beard and glasses, wearing a dark shirt, speaking and gesturing with his hands. The slide also has a small logo in the bottom left corner.

So, I have just put the post conditions in more elaborate ways where I showed you there and a flyer here I actually put them in more textual format which is understand what makes interfaces more or less usable by humans and the science and theories of usability. So, we will actually look at how mental models of users are how actually users perceive when you talk to them or when you show them something.




Have they ability to design usable interfaces using established design paradigms; I am show you would all build or will be building interfaces and solutions, but it is not about just building, it is actually about building using design paradigms design patterns will actually look at that have the ability to build usable interfaces using establish design perhaps the first one was is to ability to design now its ability to build and then when you built it the goal is to actually scientifically very methodically evaluate how the use abilities and be able to justify the design that you are mean is actually pretty good now let us look at the course philosophy.

There are three components I would like to emphasize one is objectives learning and evaluation.

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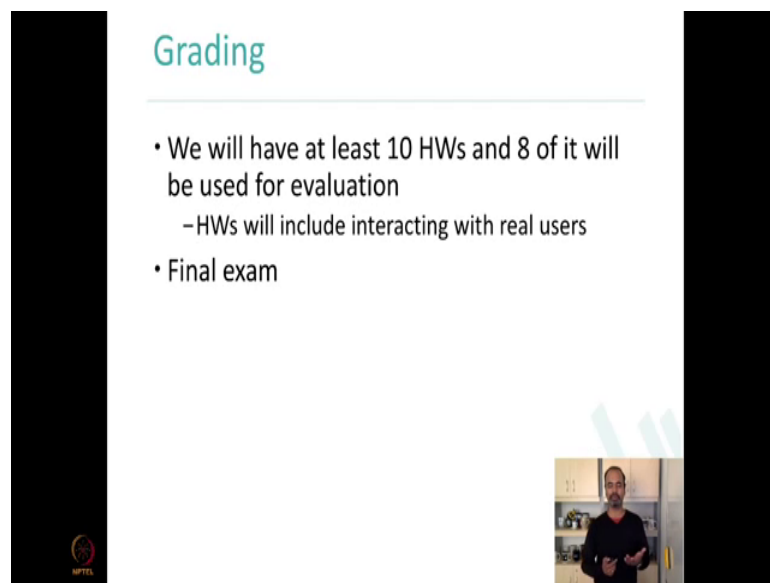
Course Philosophy

- Objectives
 - Introduce various HCI topics
 - Whirlwind tour of various HCI topics
- Learning
 - Lectures, questions, discussions
 - Hangout sessions, #AskMeAnything
 - Physical meet-ups
- Evaluation
 - HWs (will be driven by doing something with real users)
 - Exams



Objectives are the ones that where we look at the different topics that we will cover in the course. So, since this is in HCI one not one I think that the wiki be mostly a whirlwind tour of all topics of HCI what is the medium of learning lectures questions and discussions will primarily, happen in the mailing list and sometimes, I plan to have some angular session or ask me anything and there is interested with people are interested in coming to campus, I will be happy to have some physical meet ups also the modes of evaluation is primarily going to be home works and exams and in terms of home works we will have in terms of n number of weeks, we will have n minus two is the evaluation in total.

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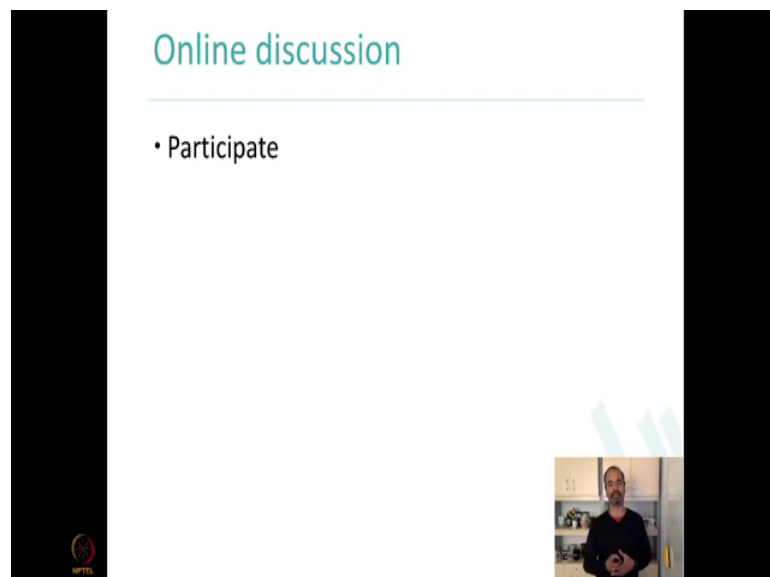
Grading

- We will have at least 10 HWs and 8 of it will be used for evaluation
 - HWs will include interacting with real users
- Final exam

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So, I sincerely request you to participate in the; online discussion because I think that is one of the mediums by which there will be questions asked by the participants sometimes the TAs are also going to ask questions and enhance your learning not just by these 20 hours or n number of hours of lectures unison.

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Online discussion

- Participate

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These are teaching assistants who are going to be part of this course. Their primary job is to make sure that the content that is delivered is understood well. They are going to be the active people on the mailing list, and they are going to make sure that you kind of do the activities properly, they will probably help you if you need anything in particular in doing the tasks and doing the home works.

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I have been teaching this course for multiple times here and in the past companies like Microsoft, Google, IBM have actually come to evaluate the projects in this course and

students I have had a lot of fun and one of the big advantages of having these kind of companies interact with the students is students get feedback about the projects and the companies also get to see what the students do.

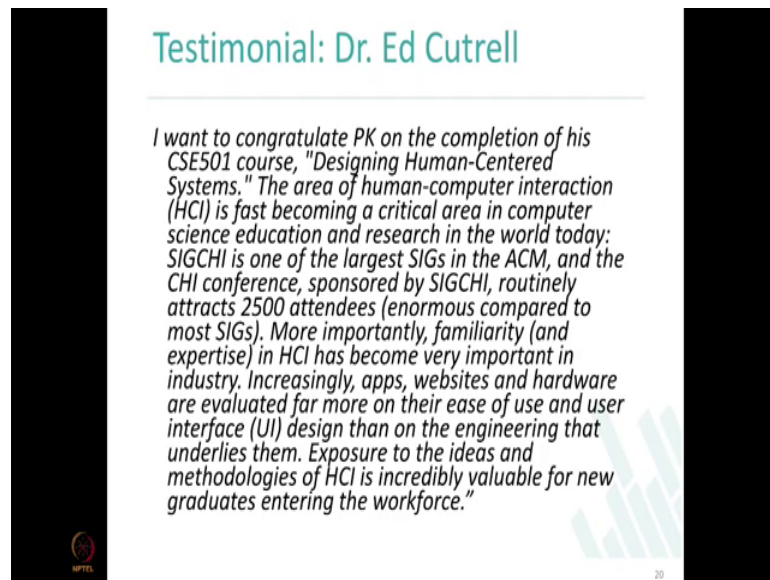
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You know some students who have taken this course who are doing HCI for their for the veteran partner to some extent the to start with; three of them are currently working in organizations and two of them are studying in the US. And in particular Raghavan and the who is on the top, Karan who is at the right bottom and a Purav, who is on the left talked of three of them who are actually working in some cool HCR projects and doing the living by doing HCI. And Vidhaan and Rohan are currently finishing their masters in the US where they are actually doing HCI also.

So, the idea is that taking this course which is an introductory class also enhances you to think that; what is the world out there with respect to human computer interaction user experience and anything; that is around this concept of design.

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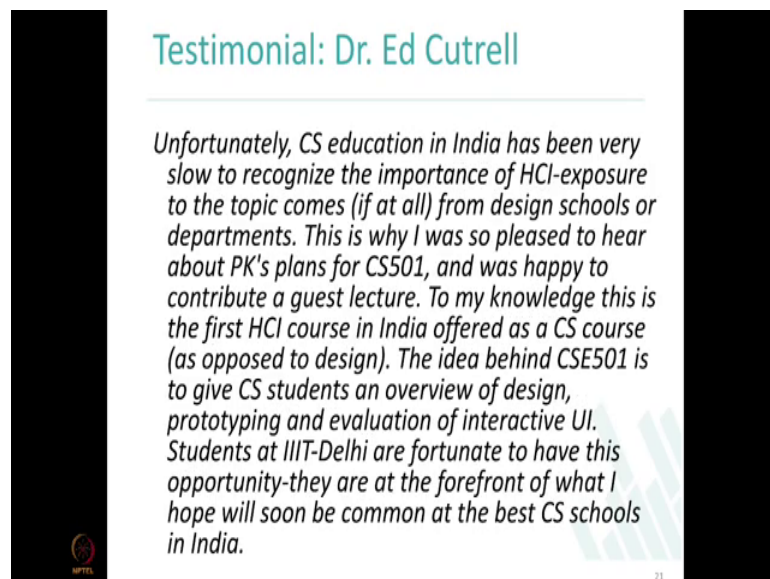
Testimonial: Dr. Ed Cutrell

I want to congratulate PK on the completion of his CSE501 course, "Designing Human-Centered Systems." The area of human-computer interaction (HCI) is fast becoming a critical area in computer science education and research in the world today: SIGCHI is one of the largest SIGs in the ACM, and the CHI conference, sponsored by SIGCHI, routinely attracts 2500 attendees (enormous compared to most SIGs). More importantly, familiarity (and expertise) in HCI has become very important in industry. Increasingly, apps, websites and hardware are evaluated far more on their ease of use and user interface (UI) design than on the engineering that underlies them. Exposure to the ideas and methodologies of HCI is incredibly valuable for new graduates entering the workforce."

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Here are some testimonials by people who have actually helped me generate the content, course curriculum and evaluations for this course and who is who used to be in Microsoft India, research India was helping me actually generate a content for this course and also helped me create the curriculum, I let you delete read the content in this slide.

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Testimonial: Dr. Ed Cutrell

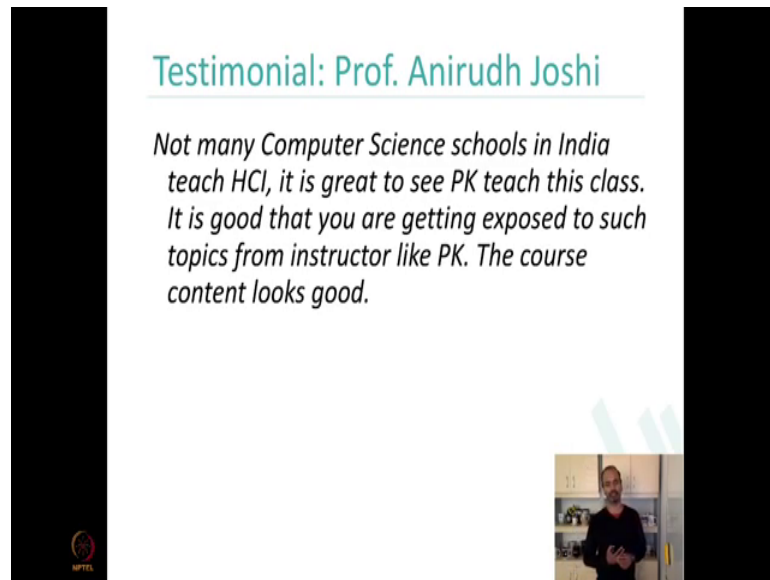
Unfortunately, CS education in India has been very slow to recognize the importance of HCI-exposure to the topic comes (if at all) from design schools or departments. This is why I was so pleased to hear about PK's plans for CS501, and was happy to contribute a guest lecture. To my knowledge this is the first HCI course in India offered as a CS course (as opposed to design). The idea behind CSE501 is to give CS students an overview of design, prototyping and evaluation of interactive UI. Students at IIT-Delhi are fortunate to have this opportunity-they are at the forefront of what I hope will soon be common at the best CS schools in India.

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But I will move on the other testimonials that I want to show you.


Professor Anirudh Joshi, Professor Anirudh Joshi is a faculty at IIT Bombay and he also says importance of HCI and importance of this course at reply to Delhi and the content of this course all.


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Testimonial: Prof. Anirudh Joshi

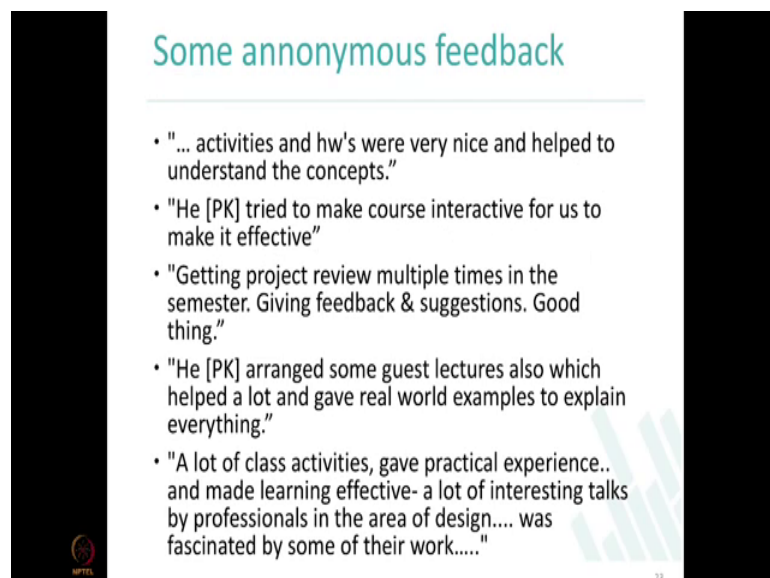
Not many Computer Science schools in India teach HCI, it is great to see PK teach this class. It is good that you are getting exposed to such topics from instructor like PK. The course content looks good.






Some anonymous feedback that I have gotten in the past when I have thought; what I am going to do is I am going to also put the slides for your consumption, not just only the videos. So, you can actually go look at these slides without the recording and the voice also.

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Some anonymous feedback

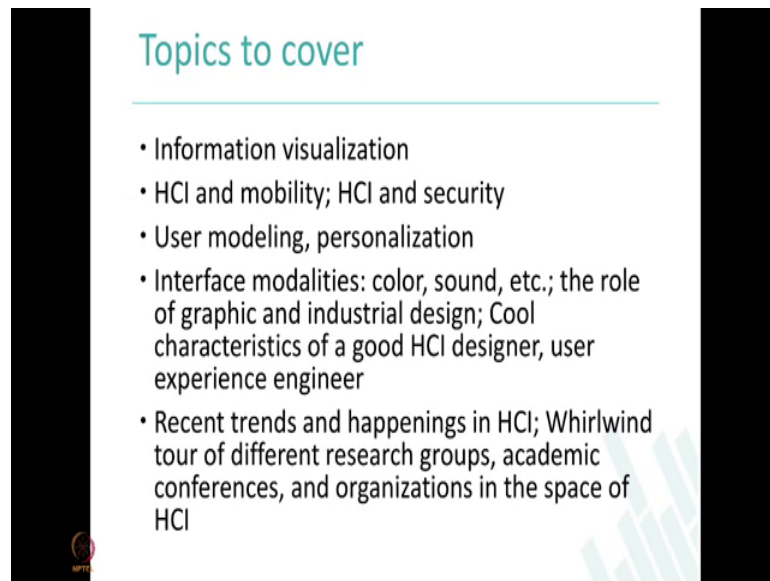
- "... activities and hw's were very nice and helped to understand the concepts."
- "He [PK] tried to make course interactive for us to make it effective"
- "Getting project review multiple times in the semester. Giving feedback & suggestions. Good thing."
- "He [PK] arranged some guest lectures also which helped a lot and gave real world examples to explain everything."
- "A lot of class activities, gave practical experience.. and made learning effective- a lot of interesting talks by professionals in the area of design.... was fascinated by some of their work....."



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You know some of the topics that will actually cover as far on this course.

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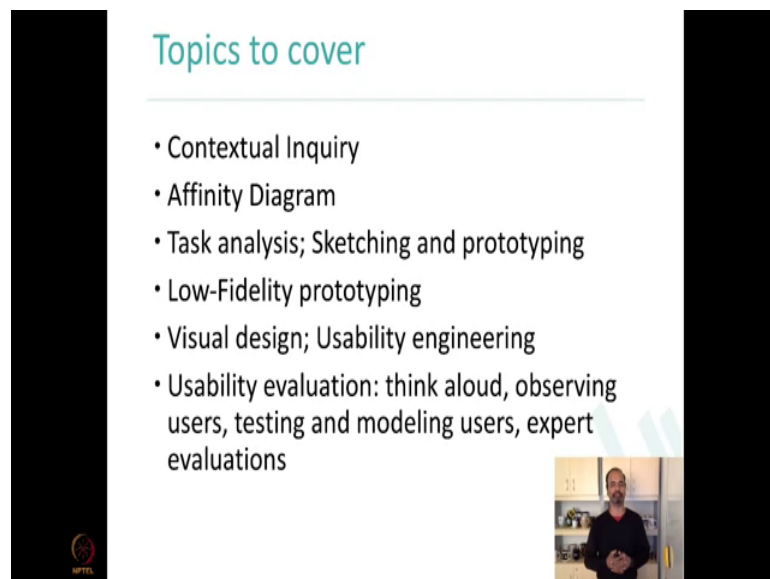


Topics to cover

- Information visualization
- HCI and mobility; HCI and security
- User modeling, personalization
- Interface modalities: color, sound, etc.; the role of graphic and industrial design; Cool characteristics of a good HCI designer, user experience engineer
- Recent trends and happenings in HCI; Whirlwind tour of different research groups, academic conferences, and organizations in the space of HCI

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Topics to cover

- Contextual Inquiry
- Affinity Diagram
- Task analysis; Sketching and prototyping
- Low-Fidelity prototyping
- Visual design; Usability engineering
- Usability evaluation: think aloud, observing users, testing and modeling users, expert evaluations

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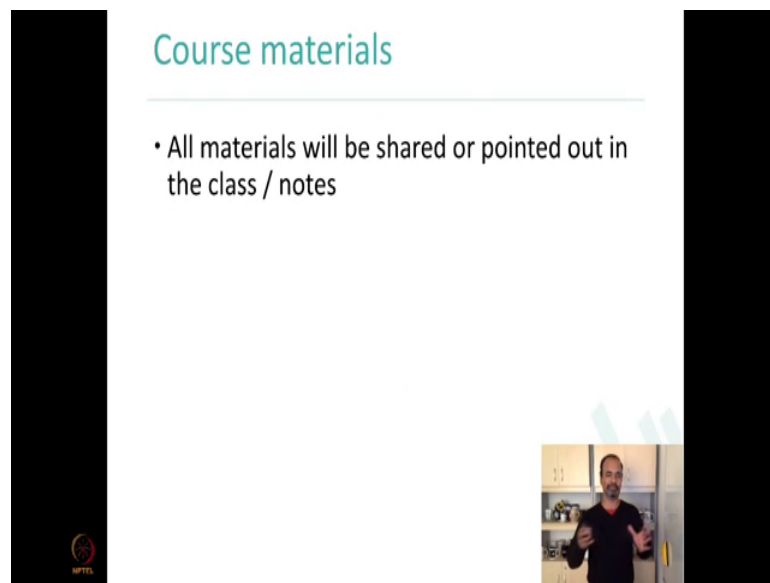
First we will actually do as we start the after this introduction to the course will actually start looking at something like contextual inquiry affinity diagram task analysis sketching and prototyping low fidelity prototypes; what I also plan to do is part of those courses also to give you a view about how to use tools like Photoshop like photo.

So, that you can actually do create content create the designs yourself visual design usability engineering usability evaluation information visualization HCI and mobility let

us see and security these are like some specialized topics that we will also look at user modeling personalization and what is colors, how can use colors well and some recent trends that are happening in HCI it.

So, that will summarize the entire course that; we will cover we will see how much we are able to cover as part of this course and we will see how much be able to consume from the content of this course.

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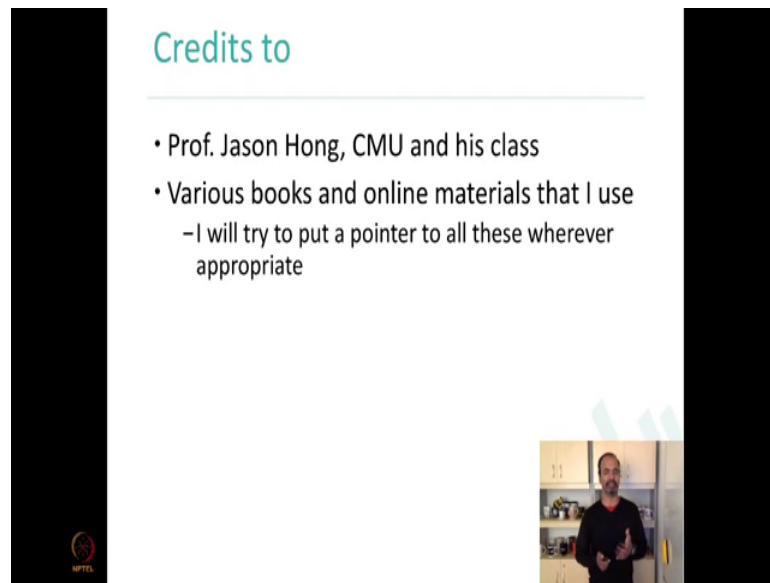
The slide features a white background with a light blue horizontal line. The title 'Course materials' is in a teal font. A single bullet point is centered below the line. In the bottom right corner, there is a small video inset showing a man in a dark shirt gesturing with his hands. The slide is framed by two vertical black bars on the left and right sides. A small logo is visible in the bottom left corner of the left black bar.

Course materials

- All materials will be shared or pointed out in the class / notes

So, one thing there is no prescribed textbook or anything all content all materials that are needed for this course, I will try to actually provide you as in slides any pointers that are needed anything I will actually share it well hand in the class or as part of this life itself.

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Credits to

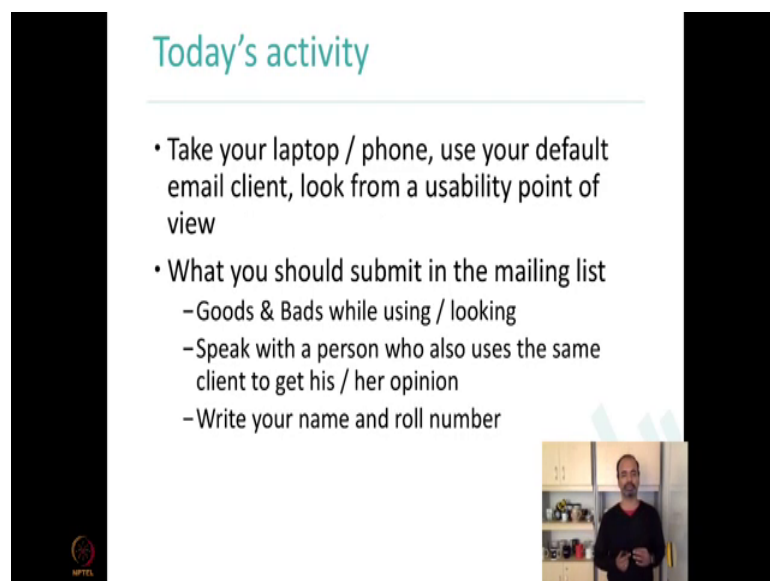
- Prof. Jason Hong, CMU and his class
- Various books and online materials that I use
 - I will try to put a pointer to all these wherever appropriate

MPTEL

The slide features a teal title 'Credits to' at the top left. Below it is a list of two main bullet points. The second bullet point has a sub-bullet. In the bottom right corner, there is a small video inset showing a man in a dark shirt speaking. The slide is framed by black vertical bars on the left and right sides. A small MPTEL logo is visible in the bottom left corner.

One of the main things that I would also mention is that then this topic is quite wide and there are many courses that are around the world which actually contribute with creating this content and I specifically also will use content from a generated which I have actually taken the class also when I was at my grad school Professor Jason's course is one of course, started is actually there for two while doing some of these lectures in this class.

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Today's activity

- Take your laptop / phone, use your default email client, look from a usability point of view
- What you should submit in the mailing list
 - Goods & Bads while using / looking
 - Speak with a person who also uses the same client to get his / her opinion
 - Write your name and roll number

MPTEL

The slide features a teal title 'Today's activity' at the top left. Below it is a list of two main bullet points. The second bullet point has three sub-bullets. In the bottom right corner, there is a small video inset showing a man in a dark shirt speaking. The slide is framed by black vertical bars on the left and right sides. A small MPTEL logo is visible in the bottom left corner.

So, what we are going to do now for its first activity which when you are done I should see a lot of emails coming out in the mailing list which is take your laptop or phone user default email client whatever you using if you are using a Gmail; if you are using an outlook if you are using anything else please open up and then do a from a usability point of view now look at it which is what are the goods in bands while using the system.

Speak of the person who also uses the same client together's or our opinion which is that talk to somebody and then see for example, if I am a user or I can look at the phone I can look at the laptop and then say that oh this is something oh I want to send an email oh it is actually quite hard to figure out where my contacts are who is in my contact it removes not in my contact it is also hard to find out whether when I am sending to a mailing list who are in the mailing list right things like that.

So, not just only the functionalities please think about also the user interface and then write your name and rule number if there is any in the NPTEL registration please put that when you are actually sending the email to the mailing list ok. So, I hope you understand. So, the goal is a look at the client look at the email default email client that you use think through well. So, you are a person who is evaluating that system send us some comments about what do you think would that unstop the content for this week if there are any questions please feel free to sign into the mailing list will actually be happy to make it.