Birla Institute of Technology & Science, Pilani
Hyderabad Campus

FIRST SEMESTER 2019-2020

Course Handout Part II

01-08-2019

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : **BITS F364**
Course Title : **Human Computer Interaction**
Instructor-in-Charge : Dipanjan Chakraborty (CS&IS) (dipanjan@hyderabad.bits-pilani.ac.in)

Scope and Objective of the Course:

- This course is an introductory course to introduce students to the theories, practices and thumbrules of designing interfaces for humans to interact with machines, and to the design-prototype-evaluate cycles of HCI .
- The course will introduce students to the importance of keeping the users at the centre of the design process, including the capabilities and aspirations of the users, and managing other stakeholders.
- We will study the different communication media available for interface designing and the properties of each medium.
- Within each medium we will discuss on how to design, prototype and evaluate interfaces, with the focus on usability.
- We will also cover additional topics like ethical concerns when dealing with human subjects.
- The course will bank heavily on hands-on components and reading of research papers and articles besides the chapters from the books.
- The delivery of the course will be through discussions and lectures.
- There will be small reading assignments in most weeks.
- Students will be expected to submit a brief review of the reading material on a portal (to be set up) before the in-class discussions on the reading materials.
- For in-class assignments it is the students' responsibility to hand in their answers to the instructor(s).

Textbooks:

1. Human Computer Interaction - Alan Dix et al.
2. The Design of Everyday Things - Don Norman

Reference books

1. Geek Heresy: Rescuing Social Change from the Cult of Technology - Kentaro Toyama
2. Research Methods in Human-Computer Interaction - Jonathan Lazar
3. Interaction Design: Beyond Human Computer Interaction - Sharp, Preece Rogers
4. Social Research Methods – Alan Bryman
5. Additional reading materials to be circulated during the course of the semester

Course Plan:

Lecture No.	Learning objectives	Topics to be covered	Chapter in the Text Book
1	To gain an overview of the course overview	• Overview and motivation for the course • Expectations of the students from the course • Expectations of the instructor from the course	-
2-3	To learn the history of HCI	Evolution of the field over time	R3 ch1
4-5	To learn about design Rules	We will cover usability, rules and heuristics, case studies	T1 ch7
6-7	To learn about Interaction Design	Which engineering models can be applied in interaction design	R3 ch6, T1 ch6
8	Peer learning	Class presentation on project proposals	-
9-11	To engage the users in the design process	• User Centred Design • Capturing requirements and user capabilities • Understanding the importance of user centred design through case studies	T1 ch1, R3 ch 9, T2 ch1
12-15	To engage the users in the design process	• Survey design • Types of questionnaires • Sampling. Quantitative, qualitative, mixed methods • Different ways to administer interviews (self, automated, manual), • Different biases • Case studies	R4 parts 2 and 3
16-18	To engage the users in the design process	• Analysing survey results • Secondary data sources • Formulating design findings ◦ User stories ◦ Storyboarding	R4 parts 2 and 3
19-20	Learn how to design for marginalised communities and universal design	We will look into several case studies	Research papers and articles, R1
21	Learn about different kinds of errors	• Human errors and types • Designing for errors	T2 ch5
22-24	How to design for different media	• Web, mobile apps, visual, audio, text, etc. • Accessibility in different media	T2 ch2,3, external reading materials
25	Peer learning	Class presentations on design assignments / projects	-

26-30	Learning about prototyping	• Prototyping tools and methods, ◦ Paper protyping ◦ Wizard of Oz ◦ A/B testing ◦ High fidelity prototyping • Case studies	T1 ch 6, R3 ch 8, Research papers and articles
31	Peer learning	Class presentations on prototyping assignments / projects	-
32-33	Learning how to evaluate systems	• Evaluation frameworks • Paradigms and techniques	R3 ch11, T1 ch 9
34-35	Learning how to evaluate systems	• User observation • Interviewing experts and users • Case studies,	R3 ch 12, R3 ch13, external reading materials
36	Learning how to evaluate systems	• Testing • task completion	R3, ch14
37	Learning about visual design	• Hiearchy, patterns and components • Material design and other design paradigms	External readings
38	Learning about typography	Theories and thumbrules on typography	T1 ch 5
39	Learning about colours	Theories of colour usage	T1 ch 5
40	Learning about Bias and Ethics in HCI	• Demographic differences between the designer and the users • Different biases • Countering bisases • Ethical concerns	External readings
41	Learning about research methods in HCI	Working with human subjects	R2 ch14
42	Peer learning	Final presentation of project / assignments	-

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Comprehensive examination	3 hours	40%	4th December, 2019, FN	Written, closed book
Mid-term examination	1.5 hours	20%	30/9, 9.00 -- 10.30 AM	Written, closed book
Project	Rolling	20%	-	Take home, open
Assignments, including reading assignments	Rolling	15%	-	Take home, open
In-class assignments	Rolling	5%	-	In-class, open notes

Chamber Consultation Hour: Wednesday 9 am to 10 am

Notices: To be circulated through CMS

Make-up Policy:

- Late submission of offline submission assignments will incur a penalty of 10% per day.
- No make up for in-class peer learning presentations, all group members should be present.
- Only best 70% (rounded up, there will be at least 5 of these exercises) of reading assignments and in-class assignments will be considered for grading for each student, however in case of non-submission or lack of a sincere attempt it will be included in the grading with a zero score.
- Institute rules apply for make up of mid-term and comprehensive examinations.

Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

INSTRUCTOR-IN-CHARGE