



Birla Institute of Technology & Science, Pilani

Hyderabad Campus

FIRST SEMESTER 2022-2023

Course Handout Part II

Date: 29-08-2022

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: This course is an introductory course to introduce students to the theories, practices and thumb rules of Human Factors in Computing. The course will introduce design, computing and research methods in the domain

Objectives:

- 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.
- Within each medium we will discuss on how to design, prototype and evaluate interfaces, with focus on usability.
- We will introduce the topics of Extended Reality
- We will also cover additional topics like ethical concerns when dealing with human subjects.

Textbooks:

1. Human Computer Interaction - Alan Dix et al. 3rd Edition, Pearson, 2005.
2. The Design of Everyday Things - Don Norman. Basic Books. 2013

Reference books

1. Design Justice: Community-Led Practices to Build the Worlds We Need – Sasha Costanza-Chock. MIT Press. 2020.
2. Research Methods in Human-Computer Interaction - Jonathan Lazar. Wiley. 2nd Edition. 2017
3. Interaction Design: Beyond Human Computer Interaction - Sharp, Preece Rogers. Wiley. 5th Edition. 2019
4. Social Research Methods – Alan Bryman. 5th Edition. 2015
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	<ul style="list-style-type: none"> Overview and motivation for the course Expectations of the students from the course Expectations of the instructor from the course 	-
2	To learn the history of HCI	Evolution of the field over time	R3 ch1
3-5	To learn about design of everyday objects	Psychopathology of Everyday Things	T2 ch1
6-8	To learn about Human Centred Design	Design Thinking, Double Diamond Model, Human Centred Design	T2 ch6
9-10	Peer learning	Class presentation on project proposals	-
11-13	To learn about the psychology behind human actions	<ul style="list-style-type: none"> Psychology of Everyday Actions Knowledge in the Head and Knowledge in the World 	T2 ch 2, 3
14-15	To Learn about Constraints, Discoverability and Feedback	<ul style="list-style-type: none"> Knowing What to Do: Constraints, Discoverability, and Feedback 	T2 ch 4
16-19	To learn about user research methods	<ul style="list-style-type: none"> Quantitative Research Qualitative Research Mixed Methods Research 	R4 parts 2 and 3
20-22	To learn about prototyping and usability Testing	<ul style="list-style-type: none"> Prototyping Usability testing techniques NASA TLX SUS Scale 	External readings
23-25	To learn how to design for marginalised communities and universal design	We will look into several case studies	Research papers and articles, R1
26-28	To learn about different kinds of errors	<ul style="list-style-type: none"> Human errors and types Designing for errors 	T2 ch5
29-30	Peer learning	Mid-semester projects class presentations	-
31-32	To learning about typography	Theories and thumb rules on typography	T1 ch 5
33-34	To learn about colours	Theories of colour usage	T1 ch 5
35-36	To learn about Bias and Ethics in HCI	<ul style="list-style-type: none"> Demographic differences between the designer and the users Different biases 	External readings



		<ul style="list-style-type: none"> Countering biases Ethical concerns 	
37-40	To learn about AR, VR, ER systems	Augmented Reality, Virtual Reality, Mixed Reality, Extended Reality	External readings
41-42	Peer learning	Final presentation of projects	-

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Mid Semester Examination	90 minutes	25%	02/11 9.00 - 10.30AM	Partially Open Book
Course Project (5% for mid-sem grading)	-	20%	TBA	Open
Assignments Design Assignment: 1 Programming Assignment: 1 peer-grading: 3 (10% for mid-semester grading)	-	15%	TBA	Open
Comprehensive examination	3 hours	40%	22/12 FN	Partially Open Book

Note: 40% of evaluations will be completed at the time of mid-semester grading.

Chamber Consultation Hour: To be announced in class

Notices: Announcements will be made in class and/or put up on CMS and/or Piazza

Make-up Policy:

- Institute rules apply for makeup of mid-semester and comprehensive examinations, however the decision of the I/C is final.
- No make up for missing non-real-time components or peer-grading

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

