Indian Institute of Technology Kanpur

Proposal for a New Course

1. **Course No:** XXX

2. **Course Title:** Human Centered Design for Systems, Strategies, Services, and Speculations (HCD-4S)

3. Per week Lectures: **3**(L), Tutorial: **0** (T), Laboratory: **0** (P), Additional Hours [0-2]: **0** (A), Credits (3*L+2*T+P+A): **9**   Duration of Course: **Full Semester**

4. **Focus course for departments:** Department of Design
    Other Departments/IDPs that may be interested in the proposed course: Sustainability School, Computer Science, Medical School, Engineering, Management, and other associated departments and centers that may involve human-centered design in their projects and teaching.

5. **Instructor:** Vivek Kant

6. **Pre-requisites, if any:** None

7. **Short Summary:**
    The aim of the course is to help the students design human-centric experiences for the next generation of systems and services while addressing design at the level of strategy and futures.

8. **Course Description:**

The aim of the course is to help students to create human-centric systems, services, strategies, and speculations. This course is meant to be a survey course of these areas: Systems-Oriented Design, Service Design, Strategic Design, and Speculative Design. While the traditional avenues of design have focused on products, interaction, and media, there is an increasing need for design to move beyond this boundary in the realm of complex systems and services. Here, design is not a part of creating tools to satisfy needs and desires; it is about envisioning and providing alternatives for living. This design dimension is sorely needed due to the ongoing transformations that will affect most of humanity. How will the next generation of Indians bring about a better future? What will the role of human-centered design principles be in a sustainable future? What are alternatives when human-centered design plays a leading role?

This course is envisioned as a course designed for postgraduate students. It will also support dual-degree students in design and students from other departments. The course will address the human-centered design of systems, services, strategies, and speculations as an interwoven and interdisciplinary approach. The current course is primarily a *design course*

which is builds on human-centered design theory, systems thinking, and futures thinking. It does not address the design of the underlying technology or computation or addresses technology and human culture (Other courses on design management, sustainability, humanities and sociology will be a better fit). This course will, nevertheless, supplement these other courses in providing the students with a broad overview. The students will gain an insight into existing tools, techniques as well as the theoretical basis of design for these areas. The course is an appropriate mix of lectures and studio practice. The students will complete certain assignments individually and work on a mini-project as a team.

a. Course Objectives:

At the end of this course, students will be able to,

- o Demonstrate ways in which human-centered design techniques presented in course will be able to extend traditional design avenues, at various levels of scale and temporality
- o Understand and use tools of Synectics and Lateral Thinking to generate alternative design solutions
- o Use techniques and principles for human-centric mapping of systems and services
- o Articulate ways to create alternative human-centered futures using systems, thinking, and futures thinking
- o Understand theory, methods, and challenges associated with service design and strategic design, and other associated concepts to articulate novel pathways and strategies for organizations and communities

b. Course Content:
90 mins per session: 16 lecture sessions + 11 studio sessions

S.No.	Topic and Details	Sessions (Lectures & Studio)
1	**Foundations I** **-** Why HCD for systems, strategies, services and speculations? - Beyond the Form and Function - Alternatives to the monetary basis of design - Design for Life	1
2	**Foundations II** - Design Synectics - Lateral Thinking Techniques - Visual Analogistics - Bisociation	2
	Studio Practice 1, 2: Exercises for Design Synectics	2

3	**Systems Oriented Design I** - Principles of Human centered Design - Objects and systems - Design and Emergence in systems - Parts, Wholes and Compositionality - Functions and Structure - Objects and Relations	1.5
4	**Systems Oriented Design II** - Systemic Transitions and Change - Qualitative modelling techniques - Human-Centered Mapping techniques - Co-creation and Co-design - Influence Maps - Designing for systemic roles	1.5
5	Studio Practice 3: Gigamap Planning	1
6	**Systems Oriented Design III** - Systemic Transitions and Change - Leverage Strategies - Intervention Model and Strategies - Facilitating Systems Change - Transition by Design	1
7	Studio Practice 4: Gigamap Creation	1

8	**Strategic Design I**
	- Design and Organizations
	- Organizations as Activity Systems
	- Design as a basis for developing organizations
	- Organizational Design Audit
	  - Planning a design audit
	  - Conducting a design audit
		1

9	Studio Practice 5,6: Organizational design audit exercise	1
10	**Strategic Design II** - Design and Public Policy - Design and Social Innovation - Design and Competitive Advantage - Design and Sustainability - Sustainable Design Transitions	1
11	**Speculative Design** I - Design Futures - Discursive Design - Cognitive Defusion - Pluriverse and world making - Trend Analysis	2

	- Scenario Design	
12	Studio Practice 7: Trend Analysis and Scenario Creation Exercises	2

13	**Speculative design II**
	  - Envisioning alternatives
	  - Pattern comprehension and resynthesis
	  - Design beyond Humanity
	  - Speculative life and ecosystems
		2

14	Studio Practice 9, 10: Speculative Prototyping	2

15	**Service Design I**
	  - Service design as activities
	  - Services as events and encounters
	  - Service design methods
		1

16	**Service Design II**
	  - Service blueprint
	  - Service prototype
	  - Expectation Maps
	  - Service Roleplay
	  - Service staging
		2

17	Studio Practice 11, 12: Service Prototyping Exercises	2
	Total Sessions (Lectures + Studio)	27 sessions
	Total Hours = 27 * 1.5 hrs	40.5 Hrs

Assignments (studio exercises+ presentation) 60% + final exam 40 %

c. Recommended Books:

Text books:
- Dunne, A., & Raby, F. (2013). *Speculative everything: design, fiction, and social dreaming*. MIT press.
- Manzini, E. (2015). *Design, when everybody designs: An introduction to design for social innovation*. MIT press.
- Holland, R., & Lam, B. (2014). *Managing strategic design*. Bloomsbury Publishing.
- Sevaldson, B. (2022). *Designing Complexity: The Methodology and Practice of Systems Oriented Design*. Common Ground Research Networks.
- Penin, L. (2018). *An introduction to service design: designing the invisible*. Bloomsbury Publishing.
- [other book excerpts and readings assigned in class for interdisciplinary readings]

Bibliography [select]

- Bason, C. (Eds.). (2016). *Design for policy*. Routledge.
- De Bono, E. (2014). *Lateral thinking: An introduction.* Random House.
- Escobar, A. (2018). *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds.* Durham, NC: Duke University Press.
- Fry, T. (2020). *Defuturing: a new design philosophy* (Vol. 1). Bloomsbury Publishing.
- Gordon, W.H.H. (1960) *Synectics, The Development of Creative Capacity*. Harper & Row, New York .
- Jones, P., & Van Ael, K. (2022). *Design journeys through complex systems.* Amsterdam: BIS.
- Nixon, N. (2015). *Strategic design thinking: innovation in products, services, experiences and beyond*. Bloomsbury Publishing USA.
- Nixon, N. (Eds.). (2020). *The creativity leap: Unleash curiosity, improvisation, and intuition at work*. Berrett-Koehler Publishers.
- Polaine, A., Løvlie, L., & Reason, B. (2013). *Service design: From insight to implementation*. Rosenfeld media.
- Potter, N. (1980). *What is a designer, things, places, messages.* Reading: Hyphen Press.
- Smith, R. C., Vangkilde, K. T., Otto, T., Kjaersgaard, M. G., Halse, J., & Binder, T. (Eds.). (2016). *Design anthropological futures*. Bloomsbury Publishing.
- Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2018). *This is service design doing*. O'Reilly Media, Inc..
- Stickdorn, M., & Schneider, J. (2012). *This is service design thinking: Basics, tools, cases*. John Wiley & Sons.
- Tharp, B. M., & Tharp, S. M. (2019) *Discursive design: Critical, speculative, and alternative things.* Cambridge, MA: MIT Press.