



**ANANT  
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UNIVERSITY**  
॥ प्रज्वालितो ज्ञानमयः प्रदीपः ॥

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## **Term-III (2018-19)**

### **Faculty Profile**

**Course title-** Human Centred Design & Frugal Innovation



**Vijay Chariar**

Prof Vijayaraghavan M Chariar is a faculty member at the Indian Institute of Technology, Delhi. Prof Chariar's basic training is in experimental materials science. Over the last two decades, he has worked on diverse areas such as Ecological Sanitation, Appropriate Housing, Design for Sustainability, Traditional Knowledge Systems, and Joyous Leadership. Prof Chariar uses an experiential and learner-centred approach in his pedagogy. He has inspired a large number of students to achieve their highest innate potential, several of whom have taken to entrepreneurship in the social sector. For his innovative pedagogy, Prof Chariar was awarded the Teaching Excellence Award by IIT Delhi in 2011. Prof Chariar taught and researched at Arizona State University as a Visiting Fulbright Scholar in 2012-2013. He is author of several patents, publications, technical manuals and design registrations on innovative technologies. Prof Chariar serves as Chairman of the IIT Delhi's much awarded sanitation start up Ekam Eco Solutions and also mentors several start-ups. He has been a sought after invited speaker by diverse academic, volunteering and corporate institutions on topics including sustainability, start-ups and self-discovery.

# Course Name: Human Centred Design & Frugal Innovation

Faculty Name: Vijay Chariar & Rattan Gangadhar

Number of credits :

## 1) Course brief / Abstract:

*Are you up for an interdisciplinary challenge? Do you see the multiplier effect arising out of integrating social, entrepreneurial and design skills while addressing an issue critical to society? Would you like to apply your academic knowledge to address real-life challenges? Are you interested in looking at development and impact from a perspective which integrates entrepreneurial, technological and social approaches? If you are answering these questions affirmatively, you would find new perspectives in this module "Design for Impact".*

*The pedagogy for this experiential module emphasises principles of co-creation and collaboration.*

*With regard to submissions, deep reflection, transcending existing models & richness of original thinking are encouraged. Plagiarism in any form is to be strictly desisted.*

*It is preferred that the outcome of this module resonates strongly with some personal transformation or breakthrough that the participant in this module has been deeply aspiring for.*

*The course mentors would be happy to carry forward the course outcomes into tangible interventions that see the light of the day. These could be either in the form of impact interventions in the not for profits space or disruptive products and services in the marketplace.*

## 2) Course Objectives:

- *To familiarise students with key concepts in design and innovation for impact, including various elements of the innovation cycle going all the way from need identification to deployment.*
- *To appreciate the community nature of many basic needs, user and market characteristics, delivery and scaling-up considerations, and the role of partnerships and policies*
- *To understand the implications of different social, economic and cultural contexts for innovation and design of products, businesses and services.*
- *To inspire, ideate, design, co-create and deploy innovative technologies, products and services so as to create a positive impact on lives of the underserved*

## 3) Prerequisites:

*An attitude of empathy and openness to deeply reflect and understand issues impacting communities and societies, studying root causes and developing inspirational and creative real-world solutions.*

Some familiarity with the impact space and the interventions made by organizations which have created impact such as the following :

Selco Solar India <http://www.selco-india.com/>  
 Remidio Innovative Solutions <http://www.remidio.com/>  
 MedicMobile <http://medicmobile.org/>  
 Promethean Power Systems <http://www.coolectrica.com/>  
 Digital Green <http://www.digitalgreen.org/>  
 Planet Read <http://www.planetread.org/>  
 Gramvaani <http://www.gramvaani.org>  
 Smartcane <http://smartcane.saksham.org/>  
 Wondergrass <http://wondergrass.in>  
 Ekam Eco Solutions [www.ekameco.com](http://www.ekameco.com)  
 Samagra [www.samagra.co](http://www.samagra.co)  
 Microspin [www.microspin.co.in](http://www.microspin.co.in)  
 Nasofilters [www.nasofilters.com](http://www.nasofilters.com)

#### 4) Learning Outcomes:

- *In this module participants will learn how frugal innovation and design utilises a synergy of social approaches, technology and entrepreneurship to bring out development impact.*
- *Cultivating the value of empathy would be key to identifying opportunities to make interventions in the form of a product, service or business.*
- *Which conditions are conducive for realization of sustainable development of communities, capacity building and conservation of resources.*
- *Gaining knowledge on Frugal Innovation from the perspectives of Technology, Entrepreneurship and Development;*
- *Applying Innovation to real-life social issues such as Sanitation, Education, Health, Food, Revitalising Public Spaces, Drought Relief and Air Quality & and developing a road map to take solutions to market.*
- *Combining different academic disciplines, relating elements of disciplines and integrating one's own field of study to others;*
- *Working in a multi-stakeholder setting, thereby acknowledging local, cultural contexts and interests.*

#### 5) Schedule:

<b>Day</b>	<b>Contents</b>	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>
<b>10 Dec (Mon)</b>	<i>Storytelling Techniques</i>	9:30 – 1:00	2:00 – 4:00	4:15 – 5:30
<b>11 Dec (Tue)</b>	<i>Human Centred Design &amp; Frugal Innovation</i>	9:30 – 1:00	2:00 – 4:00	4:15 – 5:30
<b>12 Dec (Wed)</b>	<i>Case Studies on Sanitation, Education and Food</i>	9:30 – 1:00	2:00 – 4:00	4:15 – 5:30
<b>13 Dec (Thu)</b>	<i>Case Studies on Air Quality, Drought Relief and Public Spaces</i>	9:30 – 1:00	2:00 – 4:00	4:15 – 5:30

<b>26 Dec (Wed)</b>	<i>Elements of Design and Technology from Impact perspective</i>	11:50 – 1:30	2:30 – 4:00	4:30 – 6:00
<b>27 Dec (Thu)</b>	<i>Developing a Minimum Viable Product / Service</i>	11:50 – 1:30	2:30 – 4:00	4:30 – 6:00
<b>28 Dec (Fri)</b>	<i>Elements of Business Plans</i>	9:30 – 1:00	2:00 – 4:00	4:15 – 5:30

**6) Assignment Brief and Evaluation criteria\*:**

<i>Class Participation</i>	<i>Weightage</i> <b>20 %</b>	<i>What constitutes class participation : Regularity and Punctuality, Being engaged, communicating, questioning, agreeing as well as disagreeing, appreciating, critiquing, supporting the entire class to achieve learning outcomes</i>		
<i>Assignment 1</i>	<i>Weightage</i> <b>15%</b>	<i>Individual/Group</i> <b>Individual</b>	<i>Brief of assignment</i> <b>Needs Assessment</b>	<i>Form of output:</i> <ul style="list-style-type: none"> <li>○ Drawing</li> <li>○ Presentation</li> <li>○ <b>Academic Paper</b></li> <li>○ Physical Model</li> <li>○ Digital Model</li> <li>○ Film and Visual media</li> <li>○ Exhibition</li> <li>○ Other:</li> </ul>
<i>Assignment 2</i>	<i>Weightage</i> <b>15%</b>	<i>Individual/Group</i> <b>Individual</b>	<i>Brief of assignment</i> <b>Pitch</b>	<i>Form of output:</i> <ul style="list-style-type: none"> <li>○ Drawing</li> <li>○ Presentation</li> <li>○ Academic Paper</li> <li>○ Physical Model</li> <li>○ Digital Model</li> <li>○ <b>Film and Visual media</b></li> <li>○ Exhibition</li> <li>○ Other:</li> </ul>
<i>Assignment 3</i>	<i>Weightage</i> <b>50%</b>	<i>Individual / Group</i> <b>Group</b>	<i>Brief of Assignment</i>  <b>Final Submission in Doc and PPT formats supported by a short film under 2 min.</b>	<i>Form of Output :</i>  <b>Business Plan / Strategic Research Document</b>

Major component of the course evaluation (>55%) is a project culminating in prototype of a design of product, design or business to be carried out in multi-disciplinary teams of 3 to 4 students

**7) Grading Rubric:** We will go by the Anant Fellowship Grading Rubric.

**8) Samples of expected work:** *Joy Is You Pitch Deck (Presentation Document) & Discussion Paper on National Water Policy (Research Document)* are two excellent examples of quality work that would result in an A Grade.

**9) Reading list and references:**

*Brown Tim, Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, Harper Collins (2009).*

*Chariar V M , Traditional Knowledge Systems of India, Vasudhaiva Kutumbakam, Delhi (2017).*

*Gupta Anil, Grassroots Innovation, Penguin, (2016).*

*Thackara John, In the Bubble: Designing for a Complex World, MIT Press (2006).*

*Mackey John & Sisodia Raj, Conscious Capitalism, Harvard Business Review Press (2014).*

*Phansalkar Sanjiv & Kanitkar Ajit, Gems of Purest Ray Serene, Samakaleen Prakashan (2017).*