Semester: Spring 2024
ENT-1016 Jugaad and the Tech Enterprise
Duration: 6 sessions of 3 hours each

Instructors:
Prof. Jaideep Prabhu (University of Cambridge),
Prof. Mukesh Sud (IIM-Ahmedabad),
Dr. Priyank Narayan (Ashoka University)

Course Overview:
This undergraduate course explores the principles, strategies, and practices of frugal innovation/entrepreneurs in high technology sectors.

Students will examine how resource-constrained environments can lead to creative and efficient solutions, focusing on technological advancements that deliver high value at a low cost. Students will also get opportunities to learn how to be frugal entrepreneurs in high tech sectors by analyzing examples of such enterprises. Through a combination of lectures, case studies, group projects, and discussions, students will develop a comprehensive understanding of frugal innovation's/entrepreneurship's role in driving technological progress and delivering societal impact.

A key component of the course will be student presentations in groups analyzing the case of a firm they have found that exemplifies the frugal high-tech approach in an industry. The group presentation will consist of 10 slides: 5 on why the company is innovative and 5 on why/how it is frugal, namely what principles or strategies were followed to deliver on the frugal objectives. In total the presentation will take 10 minutes with an additional 5 minutes for Q&A.

Course Objectives:
The conceptual framework of the course will be a roadmap or playbook with key principles that guide frugal innovation and entrepreneurship across high tech sectors. Key strategies of how to get more and do better with less will include demand and supply side approaches to overcoming resource constraints in developing and delivering highly affordable solutions at scale. Some of the key approaches will include:

1. Bootstrapping (e.g., lean start-up and jugaad principles) to set up and scale a business with minimal resources
2. Engaging and iterating with customers or other key partners
3. Co-creating with prosumers
4. Partnering with other innovators (e.g., large companies or the government with resources to scale)
5. Piggybacking on existing infrastructure, e.g., M-Pesa on mobile texting in Kenya, UPI on Aadhaar in India
6. Contrarian and lateral thinking, a la Edward de Bono
7. Starting small and scrappy, with a minimal viable product, then improving over time with scale and learning by doing
8. Leap-frogging by adopting newer technologies that have lower fixed costs and lower minimum efficient scale
9. Leveraging lower labour and/or operating cost base
10. Using economies of scale to achieve affordability

11. Establishing a beachhead in a large home market before going global (reverse innovation)
12. Using design thinking approaches to focus on solving the key problem from the customer's perspective rather than achieving a perfect engineering solution (which might in fact be overengineered).
13. Following the 80/20 rule that 80% of the benefit can be got at 20% of the cost

Evaluation:

- 30%: Attendance and Class participation of which –
    - 15%: contribution in class discussion
    - 15%: class notes
- 30%: Mid-term assignment (individual project) – interview any frugal innovator (doesn't have to be high-tech) and submit a video/presentation describing the innovation and the frugal principles used
- 40%: End-term assignment (group presentation) – identify and analyze frugal innovation in an Indian high-tech startup that has operated at low cost to reach scalable and sustainable solutions

Course Outline:
** SUBJECT TO CHANGE BY INSTRUCTOR, W/T ADVANCED NOTICE**

Session 1: Introduction to Frugal Innovation
- Definition and key concepts of frugal innovation
- Historical and cultural contexts influencing frugal innovation
- Examples of successful frugal innovations in high technology fields

Key Readings:

Required:

- Chapter 1 of Radjou, Navi, Jaideep Prabhu, and Simone Ahuja. Jugaad innovation: Think frugal, be flexible, generate breakthrough growth. John Wiley & Sons, 2012.
- Chapter 1 of Radjou, Navi, and Jaideep Prabhu. Do better with less: Frugal innovation for sustainable growth. Penguin Random House India Private Limited, 2019.

Suggested:

- Prabhu, Jaideep. "Frugal innovation: doing more with less for more." Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 375, no. 2095 (2017): 20160372.

Session 2: Frugal Innovation in Space
- Case study: Team Indus and Pixxel

Key Readings:
TBA

Session 3: Frugal Innovation in Finance
- Case study: M-Pesa, Pix, Aadhar and UPI

Key Readings:

Required:

- Chapters 1, 2 and 3 of Prabhu, Jaideep. How Should a Government Be? The New Levers of State Power. Profile Books, 2021.
- Montes, Carlos and Jaideep Prabhu, "Playbook on Nationwide Digital Infrastructure at the Service of Prosperity," University of Cambridge whitepaper.

Session 4: Frugal Innovation in Healthcare and Education

- Case studies of medical devices
- Thyrocare
- Serum Institute of India and Adar Poonawala
- Cipla and Yousuf Hamid
- Darshana Joshi: Vigyanshaala
- Sugata Ghosh: Hole in the Wall

Key Readings:
TBA

Session 5: Frugal Innovation in Sports

- Case study of IPL

Key Readings:
TBA

Session 6: Student Presentations

Faculty Details:

Prof. Jaideep Prabhu (University of Cambridge):

Jaideep Prabhu is Professor of Marketing and Jawaharlal Nehru Professor of Indian Business & Enterprise at Cambridge Judge Business School. His research focuses on international business, marketing, strategy and innovation. He has a BTech degree from IITD and a PhD from the University of Southern California.

He has published in and has been on the editorial board of leading international journals such as the Journal of Marketing and the Journal of Management Studies. His work has been profiled by the *BBC, Bloomberg BusinessWeek*, *The Economist*, *The Financial Times*, *Le Monde, The New York Times,* and *The Times*. He is the co-author of *Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth*, described by *The Economist* as "the most comprehensive book yet" on the subject of frugal innovation. His 2015 book *Frugal Innovation: How to do Better with Less* with Navi Radjou won the CMI's Management Book of the Year Award 2016. His most recent book *How Should a Government Be: The New Levers of State Power* was published in February 2021. He was elected a Fellow of the British Academy in 2023.

Prof. Mukesh Sud (IIM-Ahmedabad):

Prof. Mukesh Sud has over three decades of professional experience divided equally between entrepreneurship and academia. After graduating from the Indian Institution of Technology (IIT) Delhi, Prof. Sud was an entrepreneur where he established several small scale industries which he exited in 2000.

He then completed a doctoral program at IIM Bangalore. From 2006, he spent the next decade in academia in US finally teaching at Fairfield University in CT where he got tenure. He joined IIM Ahmedabad in 2015 where he was a full time faculty in the Strategy Area till 2023. He continues as a visiting faculty there as well as at Ashoka University.

In 2022, Prof. Sud co-authored a book titled "Leapfrog: Six Practices to Thrive". It has been published by Penguin Random House and is a national bestseller. Leapfrog has been translated into multiple Indian languages and also been printed and is being sold in Singapore.

Dr. Priyank Narayan (Ashoka University):

Priyank Narayan is the Founding Director of the Centre for Entrepreneurship at Ashoka University. He started his career with IBM. Priyank is a seasoned entrepreneur and an educationist who brings with him rich experience in organization building. He is the Founder of IndiaPreneurship, an organisation focused on showcasing entrepreneurial opportunities in India to the world. He also mentors a number of startups based in India and abroad.

Priyank teaches courses on Design Thinking, Innovation Management, and Developing an Entrepreneurial Mindset. He is a guest faculty member at IIT Delhi, IIM Ahmedabad, HEC Paris, and Naropa Fellowship, Leh. Priyank is an alumnus of AIM, Manila and IIM Ahmedabad. He has completed executive education programmes at Harvard Business School and Singularity University, California. He holds a PhD from the Department of Management Studies, IIT Delhi.

He has recently been in the news as co-author to the national bestseller Leapfrog: Six Practices to Thrive. Priyank is an avid golfer and a licensed scuba diver. He is also trained in Indian classical music.