



भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

Batch
02

Executive Programme in
**Healthcare Entrepreneurship
and Management**

5 Months | Live Online



Programme offered by
Continuing Education Programme (CEP),
IIT Delhi

Overview

The world has changed ever since the pandemic. Health and well-being have come under more and more scrutiny. Healthcare has been the focus of the majority of inventions, from the adoption of a variety of medical apps and telemedicine technologies to the increased public interest in smart wearables and medical gadgets. For businesses and start-ups, this has created a once-in-a-lifetime opportunity for businesses and start-ups to enter this market.

Unlock new paradigm of growth in healthcare industry with Executive Programme in Healthcare Entrepreneurship and Management- IIT Delhi curated for graduates and working professionals to develop transitional entrepreneurship roles. This learner-centric programme will cover the conception, design, prototyping, testing, customer discovery, sales and marketing, commercialization, and management of innovative healthcare products and services. This programme will cover the conception, design, prototyping, testing, customer discovery, sales and marketing, commercialization, and management of innovative healthcare products and services.



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There will be discussion with IIT Delhi's faculty, doctors from AIIMS, and industry experts on:

- ▶ A wide range of healthcare issues, from mental illnesses to foot pain, and appropriate product- and service-related solutions will be developed.
- ▶ Key design concepts will be taught for B2C, B2B products, and hands-on experience will be provided on customer discovery, iterative design optimization, and design of minimum viable product (MVP).
- ▶ State-of-the-art prototype development processes, tools, and testing methods will be discussed, along with the role of AI/ML, strategies for effective product branding, pricing, sales, and go-to-market.
- ▶ In-depth discussions on commercialization and management concepts, particularly those related to business model development, funding, intellectual property, regulations, and scale-up.
- ▶ The majority of experiential and hands-on learning content will be taught by top faculties with engineering, clinical, industry, and start-up backgrounds. The learnings will be valuable for healthcare companies as well as for graduates willing to start up in the healthcare space or get into the role of a biomedical engineer or entrepreneur.
- ▶ Additionally, doctors, engineers, researchers, and medical professionals in the field of biotechnology in a company or institute, will gain valuable insights into lab-to-market transfer of healthcare products.

Programme Highlights

01



Certificate from prestigious CEP, IIT Delhi

02



Top IITD faculties and industry experts

03



Holistic curriculum covering concepts & applications

04



Projects and Hands-on experience

05



Rich peer group learning and networking

Key Learning Outcomes

- ▶ Innovate new healthcare products and services from a value-driven and a customer-centric approach.
- ▶ Gain successful process-oriented design thinking capabilities.
- ▶ Be an expert in healthcare product prototyping and testing.
- ▶ Develop a strong foundation in branding, pricing, sales and go-to-market strategies.
- ▶ Learn key commercialization concepts such as business model development, funding, intellectual property, regulations.
- ▶ Learn UX/UI for medical app development.
- ▶ Launch successful healthcare start-ups.

Programme Content

Module 1. Conception

- ◆ Basics – What is entrepreneurship? What is a product? What is the difference between product and service?
- ◆ Healthcare problems and unmet need – Current health related challenges-pre and post pandemic, existing solutions, product, and service requirements
- ◆ Empathy, Personas, User Stories – stepping into consumers' shoes and understanding medical issues
- ◆ Identifying New Opportunities in Healthcare Innovation using Data – market gap
- ◆ Understanding healthcare policies and strategies
- ◆ Market Research for Healthcare Product or Service Development – How to conduct market research?
- ◆ Idea Generation & Need Analysis – Source, evaluate ideas
- ◆ Concept testing using Surveys-Customer Discovery: template, evaluate the value proposition
- ◆ Design Thinking for B2C, B2B Products and Services
- ◆ Competition Analysis and Product Market Fit

Module 2. Design

- ◆ Product Design Process - 7 Stages
- ◆ Healthcare Product Specifications and Features - I
- ◆ Healthcare Product Specifications and Features - II (Contd.)
- ◆ Visual Design Elements – Branding elements
- ◆ User experience (UX) and User Interface (UI) design
- ◆ Introduction to Medical App Development
- ◆ Quality Engineering and Iterative design optimization. Design for Manufacturing
- ◆ Computational Tools used in Design and Analysis of Healthcare Products

Module 3. Prototyping

- ◆ Minimum Viable Products (MVP)
- ◆ Types of MVP
- ◆ Prototype development for Physical and Digital Healthcare Products, and Services
- ◆ Wireframing
- ◆ Manufacturing Techniques – Additive (3D Printing), Subtractive, biochemical, multi-scale
- ◆ Material Selection for Healthcare Product Prototyping
- ◆ Role of Robotics and Automation in Prototyping
- ◆ Prototype Functionalization using Electronics and Instrumentation, Role of AI/ML
- ◆ Prototype-to-Product and Mass Production
- ◆ Medical App Prototyping- Hands-on on Figma

Module 4. Testing

- ◆ Usability Testing
- ◆ Simulated Test Marketing
- ◆ Beta Testing
- ◆ Material Testing and Characterization
- ◆ Role of AI/ML in Healthcare Product Development and Testing
- ◆ Ethics, Testing on Animal Models and Human Subjects
- ◆ Clinical Testing Methods
- ◆ Regulations and Standards: ISO

Module 5. Sales and Marketing

- ♦ Branding, Brand Awareness, Consumer Brand Knowledge
- ♦ Human Behaviour Management
- ♦ Product-line Decisions (extension, reduction), Product Category expansion
- ♦ Pricing Model and Strategy
- ♦ Segmentation | Target | Positioning
- ♦ Sales Forecasting
- ♦ Distribution Channels
- ♦ Lead Generation-Role of Contacts and Social Media
- ♦ Customer Acquisition and Retention

Module 6. Commercialization

- ♦ Introduction to Business Model Canvas
- ♦ Funding Requirement and Avenues
- ♦ Team Building and Collaborations
- ♦ Intellectual Property and Trademarks
- ♦ Ethical and Legal Implications in Healthcare Industry
- ♦ Market Competition and Creating Barriers to Entry
- ♦ Deployment and Distribution Strategy
- ♦ Launching of Start-up: Rules and Steps
- ♦ Scale-up Model and Sustainable Growth Plan
- ♦ Healthcare Quality Management

Project(s)

Bootstrapped development of 1 Product or Service per participant, with a tested deployment, marketing, and go-to-market commercialization plan. Will include expertise from top hospitals such as AIIMS.

Note: This is an indicative list of modules, projects, and tutorials, tools and is subject to change as per IIT Delhi's discretion.



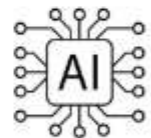
Gain exposure to the applications of below tools and libraries in healthcare space:



UI UX DESIGN



Machine Learning



Pedagogy

The teaching will focus on learning important concepts from scratch through discussions on real life examples. The topics will then be applied by the students as a part of the course and project assignments. The project, which will run throughout the course, will involve hands-on training on the topics taught and enable the development of a strong technical and entrepreneurial mindset. Dynamic two-way feedbacks will ensure effective mentoring and student learning.

Duration	<ul style="list-style-type: none">• 5 Months
Delivery	<ul style="list-style-type: none">• Synchronous, Live Online Mode• 80 Hours Live Online Lectures• 40 Hours of Project
Schedule	<ul style="list-style-type: none">• Lectures: 1 day weekend class (Saturday) 10:00 to 12:00 PM, 12:30 to 2:30 PM• Project: 1 day weekend class (Biweekly Sunday) 10:00 to 12:00 PM, 12:30 to 2:30 PM• Session Timings: 10:00 AM to 12:00 PM, 12:30 PM to 2:30 PM• Commencement Date: 6th April 2024• Application Closure Date: 31st March 2024
Eligibility	<ul style="list-style-type: none">• A bachelor's degree.• Prior work experience or a certificate of completion of an internship or project is desirable.
Screening & Selection	<ul style="list-style-type: none">• Applications will be reviewed based on the eligibility and subsequent shortlisting process as laid down by the Programme Coordinator.
Assessment Criteria	<ul style="list-style-type: none">• 40% Assignments• 50% Projects• 10% Attendance <p>Candidates need to secure a minimum of 60% overall to be eligible for the Successful completion certificate.</p>
Attendance	<ul style="list-style-type: none">• Participants with Grades > 60% and Attendance > 70% will get completion certificates. Rest of the participants with Grades < 60% and Attendance > 50% will get participation certificates. No certificates will be issued for participants with below 50% attendance.

Application Requirements

Education Document

- Consolidated graduation mark-sheet / Passing Certificate

Experience Document (If applicable)

- For Previous Organization(s): Relieving letters
- For Current Organization: Current Salary Slip or Bonafide Certificate from the HR department on company letterhead.

ID Proof

- Any Government-issued photo ID like PAN Card/ Driving License/ Passport, etc.

Programme Fee Details

Fee Structure

Particulars	Amount
Total Programme Fee	INR 1,10,000/- + GST

Instalment Pattern		
Particulars	Instalment Amount	Payment Schedule
Instalment 1	INR 60,000/- + GST	within 3 days from date of offer letter
Instalment 2	INR 50,000/- + GST	on or before 05 th April 2024

*Payment of fees should be submitted in the IIT Delhi CEP account only, and the receipt will be issued by IIT Delhi CEP account for your records

*Loan Options is a service offered by Jaro Education and IIT-Delhi is not responsible for the same

Withdrawal & Refund from Programme:

- Candidates can withdraw within 15 days from the programme start date. A total of 80% of the total fee received will be refunded. However, the applicable tax amount paid will not be refunded on the paid amount.
- Candidates withdrawing after 15 days from the start of the programme session will not be eligible for any refund.
- If you wish to withdraw from the programme, you must email cepaccounts@admin.iitd.ac.in and crm.supportiitd@jaro.in, stating your intent to withdraw. The refund, if applicable, will be processed within 30 working days from the date of receiving the withdrawal request.

Programme Certification

- You will be awarded a Completion Certificate if you obtain 60% aggregate marks in the evaluation components and maintain a minimum attendance of 70% in lectures and tutorials.
- Participants who are unable to score 60% marks in the evaluation will be eligible for the Participation Certificate if their attendance is above 70%.
- The organising department for this programme is the Centre for Biomedical Engineering.
- Only e-certificates will be issued by CEP, IIT Delhi, as per the sample below.





Dr. Arnab Chanda

Assistant Professor in the Centre for Biomedical Engineering, IIT Delhi
PhD, University of Alabama, USA

- ▶ A joint faculty at the Department of Biomedical Engineering, AIIMS, Delhi
- ▶ Founder of a startup company BIOFIT Technologies LLC, USA

Dr. Arnab Chanda is an Assistant Professor in the Centre for Biomedical Engineering, IIT Delhi, and a joint faculty at the Department of Biomedical Engineering, AIIMS, Delhi. He is also the founder of a startup company BIOFIT Technologies LLC, USA. He has also worked as a postdoctoral researcher at the Department of Bioengineering, University of Pittsburgh, USA and as a research scientist in LP Amina, China. Dr. Chanda is an expert in the fabrication and mechanical characterization of tissue mimics, and has previously developed artificial surrogates for human skin, muscles, brain, artery, and plantar fascia, and tested them at both lab and clinical settings. These experimental models have been used extensively for surgical training and to study a wide range of injury scenarios. To date, he has received young researcher awards from ASME and MHRD, and also holds 7 US Patents and several tech-transfers. Currently, Dr. Chanda heads the "Disease and Injury Mechanics Lab (DIML)", where his team is working on developing cutting-edge wearable technologies to mitigate foot-related disorders (i.e., diabetic ulceration, plantar fasciitis, slips, and falls) in India. They also aim to fabricate low-cost artificial organs for surgical training.



Prof. Biswarup Mukherjee

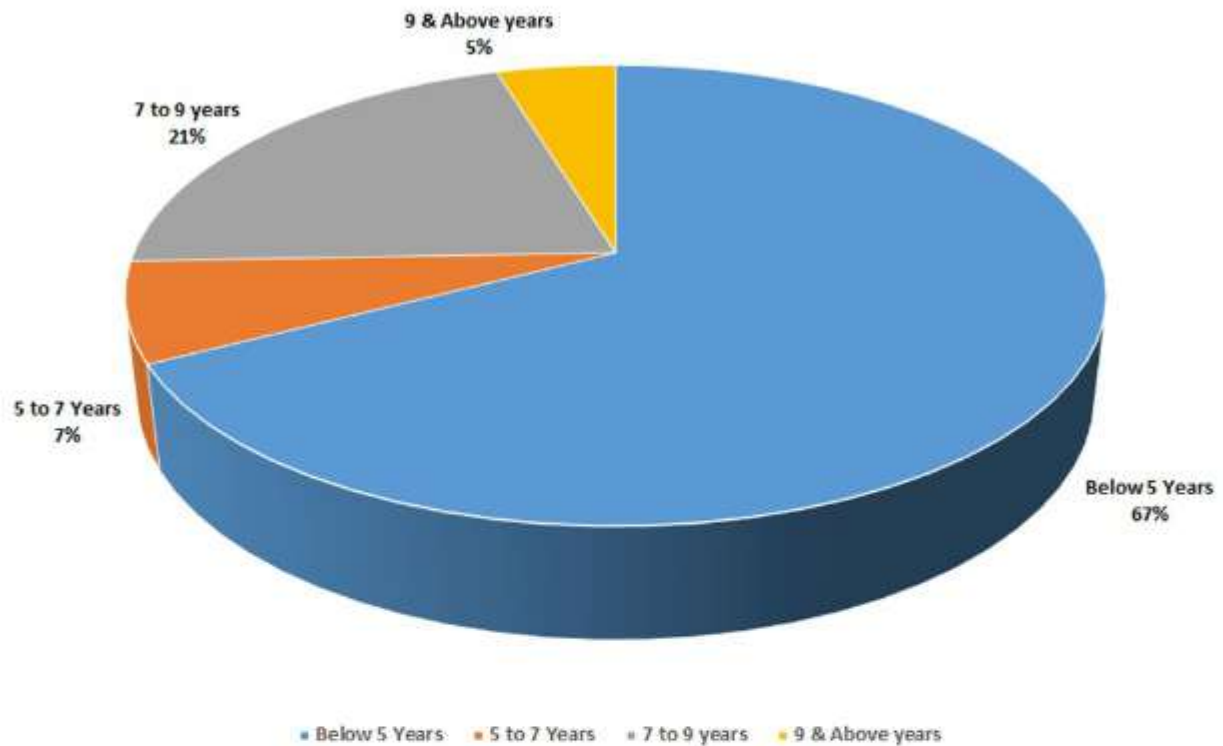
Assistant Professor at the Center for Biomedical Engineering, IIT Delhi

- ▶ PhD, Indian Institute of Technology Madras (IITM)
- ▶ Ex-postdoctoral research fellow at Harvard Medical School

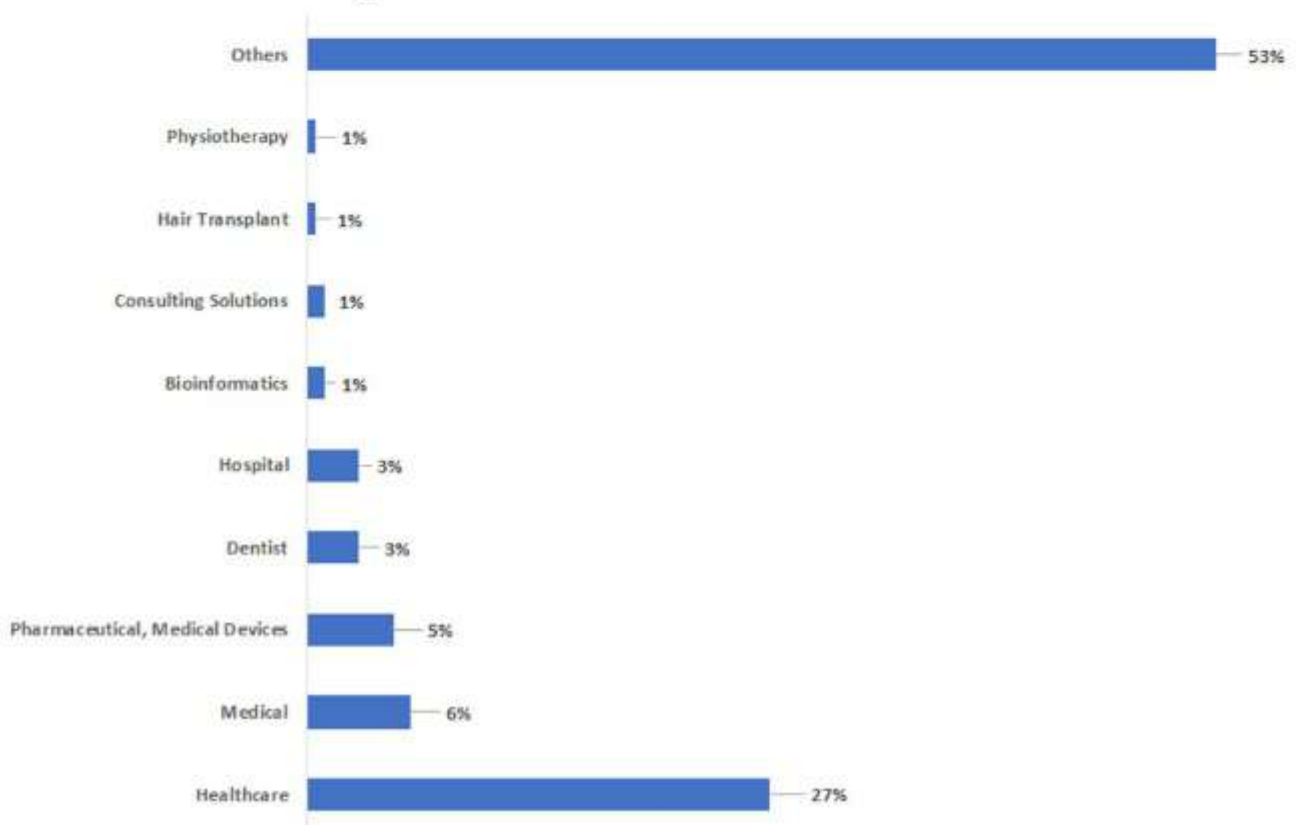
Dr. Biswarup Mukherjee is an Assistant Professor at the Center for Biomedical Engineering, IIT Delhi. His research effort is focused towards developing multi-modal platform technologies that provide the means to non-invasively monitor aspects of neuromuscular activity in real-time, particularly for rehabilitation applications. Development of biomimetic sensors to improve sensorimotor integration in individuals with motor disabilities. He is also interested in developing tools and devices for quantitative assessment of motor skills. He obtained PhD in Electrical Engineering from IIT Madras where he developed capacitive and magnetic sensing systems for medical training and simulation applications. He was a postdoctoral research fellow at Harvard Medical School where he developed novel medical training models for emergency medicine, ophthalmology and nursing. He was a Research Assistant Professor with the Department of Bioengineering at George Mason University. He was also an affiliate faculty at the Center for Adaptive Systems of Brain-Body Interactions at Mason. There he was involved in multiple federally funded projects to develop low-power ultrasound instrumentation and techniques for muscle-activity monitoring for prosthetic and rehabilitation applications.

Recent Batch Profiles

Work Experience



Industry Representation



Designation/Role of Previous Participants



Top Companies Our Batch Are Working At

Deloitte.

pwc

Fortis

Apollo
HOSPITALS
TRUSTED CARE

AstraZeneca

MGM
HEALTHCARE

Boston
Scientific

PRO PHYSIO
BELIEVE YOU CAN

EUGENIX
HAIR SCIENCES

Note:

- All company names are trademarks or registered trademarks of their respective holders. Use of them does not imply any affiliation with or endorsement by them.
- This only indicates the organizations where participants were employed.
- The list is partial.



About IIT Delhi



as per QS World University
Rankings (2024)
in India



as per NIRF India
Engineering Rankings (2023)



as per NIRF India Rankings
(2023) Overall



as per NIRF India
Management Rankings (2023)

The Indian Institute of Technology Delhi (IIT Delhi) is one of the 5 initial IITs established for training, research and development in science, engineering and technology in India. Established as College of Engineering in 1961, the Institute was later declared as an Institution of National Importance under the "Institutes of Technology (Amendment) Act, 1963" and was renamed as "Indian Institute of Technology Delhi". It was then accorded the status of a Deemed University with powers to decide its own academic policy, to conduct its own examinations, and to award its own degrees.

Since its inception, over 48000 students have graduated from IIT Delhi in various disciplines, including Engineering, Physical Sciences, Management, Humanities and Social Sciences. Of these, nearly 5070 received PhD degrees. The rest obtained a Master's Degree in Engineering, Sciences and Business Administration. These alumni today work as scientists, technologists, business managers and entrepreneurs. There are several alumni who have moved away from their original disciplines and have taken to administrative services, active politics, or are with NGOs. In doing so, they have significantly contributed to the building of this nation and to industrialization around the world.

About Continuing Education Programme (CEP)

Executive education is a vital need for the companies to build a culture that promotes newer technologies and solutions and builds a workforce that stays abreast of the rapidly transforming needs to the technological, business and regulatory landscape. Committed to the cause of making quality education accessible to all, IIT Delhi has launched Online Certificate Programmes under eVIDYA@IITD (ई-विद्या@IITD): enabling Virtual & Interactive-learning for Driving Youth Advancement@IITD for Indian as well as international participants. These outreach programmes offered by the Indian Institute of Technology Delhi (IIT Delhi) are designed to cater to the training and development needs of various organisations, industries, society and individual participants at national and international level with a vision to empower thousands of young learners by imparting high-quality Online Certificate Programmes in cutting-edge areas for their career advancement in different domains of engineering, technology, science, humanities and management.



Programme offered by Continuing Education Programme (CEP), IIT Delhi

Glimpse of Our Previous Participants






Service provided by

jaro education

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 **priya.rathod@jaro.in**

**For any feedback, please write to
CEP IIT Delhi at
contactcep@admin.iitd.ac.in**

"Online Certificate Programmes are offered by the Indian Institute of Technology Delhi under the aegis of Continuing Education Programme (CEP) so that the Institute can realise its vision of serving as a valuable resource for industry and society, and fulfil its mission to develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.