



Executive M.Tech. in CSE (Design Thinking & Innovation)

Duration - 2.5 Years

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ABOUT THE PROGRAMME

Everything we have around us has been designed. Though traditionally used to describe the visual aesthetics of objects such as books, websites, products, architecture, and fashion, design, both as a concept and a discipline, is expanding to include not just the shaping of artifacts but also the ways people interact with systems, services, and organizations. Design Thinking is the act of creating what Herbert Simon called 'desirable futures': a proactive stance that resolves or dissolves problematic situations by design. Through a hybrid of lectures, discussions and field trips, this interdisciplinary course unpacks the idea of design thinking -- both as a concept and a toolkit -- and introduces the participants to the methodological aspects of the problem-defining, innovation-led, human-centered design approaches, which will enhance their skills as ethnographers, visual thinkers, strategists, analysts and storytellers.

This course aims to bridge theory and praxis by equipping the participants with the ability to apply what they have learned to public service, social and entrepreneurial challenges, and untangle the complexities of policy issues and explore innovative ways to create genuine social impact in the local context. It reflects on 'design' as a human-technology interface, and points toward theoretical, critical, methodological and pedagogical practices arising out of such imbrication. This will equip participants with the expertise to frame and investigate problems using design thinking, and critically review the ideas and theories associated therewith, including with reference to local socio-economic contexts.

This course will enable students to understand the concepts of Design Thinking and important tools associated with the application of Design Thinking. The focus will be given to areas of mindset transformation for a human-centered approach first. Throughout the course, tools and techniques for fostering individual and group creativity, management practices that foster (or inhibit) innovation, methods for developing and evaluating ideas for new products, services, and the business models to execute these ideas, and principles and practices for leading innovation are explored. Using a variety of readings, case examples, discussions, experiential exercises, and a challenging team project, students explore and apply the principles of creativity and artificial intelligence in industries. The course also covers the concepts for systematically establishing, defining, and managing the requirements for large, complex, changing, and software intensive systems, from technical, organizational, and management perspectives. Design Thinking allows us to connect Business, Technology and Operations of a bank uniquely and engineer solutions that drive unprecedented value, making it a joyous collaborative experience. This indispensable belief catapulted into establishing the state-of-the-art Design Center dedicated for 'Design' -- which allows to interrogate a problem, challenge a statement to design a viable solution and demystify complexities to create algorithms.

The 8012 FinTech Design Center is where the sparks of innovation and enterprise are ignited.

ABOUT THE INSTITUTE

Indian Institute of Information Technology (IIIT) Ranchi is an Institute of National Importance under the Act of Parliament of India established in 2016. The major objective was to set up a model of education which could produce best in class human resources in IT and harness the multidimensional facets of information technology in various domains.

Indian Institute of Information Technology, Ranchi (IIIT Ranchi), is one of the Indian Institutes of Information Technology, a group of 25 Interdisciplinary Technical Universities of higher education started by Government of India, focused on Information Technology. It is an "Institute of National Importance", declared by an act of parliament.

Indian Institute of Information Technology Ranchi is an autonomous institute setup by the MoE, Government of India, and Government of Jharkhand along with the industry partners TTL, TCS and CCL on a Public Private Partnership.

The IIIT Ranchi is funded by Government of India (50%), Government of Jharkhand (35%) and Industry Partners (15%).

IIIT Ranchi will be one of the leading Institutes in India for its academic excellence and good governance.





INTELLECT DESIGN ARENA LTD.

Intellect Design Arena Limited is a global leader in Financial Technology for Banking, Insurance and other Financial Services. With a rich suite of products across the organisation, they are an authority on vertical and integrated products that enable institutions to meet their ambition to be the principal service provider to their customers.

Intellect Design Arena Limited provides Large Enterprise-Grade Composable and Contextual solutions driving higher business growth, reducing cost and risk on a sustainable basis. They believe in leveraging the power of the design mind, focusing their energies towards accelerating digital journeys for their trusted customers. They believe in the art of possibilities and the power of believing in their clients, their technology and themselves.

The Banking and Financial Services industry is an innovative and dynamic one and Intellect, has always been ahead of the FinTech curve through sustained research and development. Comprehending the customers' psyche and empowering them with their exponential technologies, has been their approach to going beyond the expected and connecting with them, making their dreams come true.

Their NextGen Open Finance, Composable and Contextual FinTech architecture challenges, innovates and sparks change through disruption, not only powering the world of banking, but also by creating opportunities for everyone. Their ground breaking solutions enable financial institutions to realize their business aspirations through digital transformation. This is made possible through their customer-centric design thinking approach, which enables engineering of agile solutions combined with performance assurance.

They ensure customer intimacy by providing solutions that are unique to the bank, corporation sectors and the organisations. They offer superb STP for rapid execution simply initiated with strong risk management, each and every time. Through Intellect, we can obtain rich information and analytics in real-time, enabling banks to make better decisions to execute the next transactions.

ADMISSION PROCEDURE

Eligibility

- B.E./B.Tech or equivalent in Computer Science and Engineering / Information Technology/ Software Engineering / Electronics and Communication / Telecommunication / Electronics and Instrumentation/ Electronics / Electronics and Electrical/Electrical
- Qualifying CGPA 6.0 on 10 points Scale or 55% aggregate marks in BE/B.Tech.
- Minimum 2 years of work experience after BE/B.Tech.
- Candidate should be currently working in an industry/organization
- Self-sponsored candidate should be owner of a company with annual turnover of Rs. 10 Lakhs.

CORE COURSES

- Design Thinking Concepts & Tools
- Creativity & A.I
- Advanced Data Structures & Algorithms
- UX & UI Design
- Requirement Engineering
- Business Model Innovation
- Object Oriented Modeling & Design
- Human Centred Design for Inclusive Innovation

LABORATORY REQUIREMENTS

- Design Thinking Concepts & Tools Lab
- Advanced Data Structures & Algorithms Lab (Python)
- Object Oriented Modeling & Design Lab
- UX & UI Design Lab

ELECTIVE COURSES

- Web Services & E-Commerce
- Real Time Data Analysis
- Software & System Engineering
- System Defect & Quality Prediction Techniques
- Optimization Techniques
- Cloud Computing
- Deep & Reinforcement Learning
- Stochastic Process & Queuing Theory
- Information Theory & Coding
- Pattern Recognition

INDUSTRY PARTNERS

INTELLECT DESIGN ARENA LIMITED Provides large enterprise grade composable and contextual solutions driving higher business growth, reducing costs and risk on a sustainable basis.

COURSE OUTCOMES

- Break cognitive fixedness and approach problems with a new mindset that integrates creative problem-solving and management.
- Put design thinking into action by collaborating with peers from a wide range of professional experiences.
- Practice empathy and apply human-centered design through different techniques and mental models.
- Projects at 8012 FinTech Design Center that bridges the theory and praxis by equipping the participants with the ability to apply what they have learned to public service, social and entrepreneurial challenges, and untangle the complexities of policy issues and explore innovative ways to create genuine social impact in the local context.

CREDIT REQUIREMENTS

SEMESTER/PROJECTS	CREDITS
I	14
II	15
III	15
IV	14
V	16
TOTAL	74

SEMESTER FEES

Tuition Fees - Rs 1,50,000/-

Institution Fees - Rs 15,000/-

ADDITIONAL FEES

(ONE TIME PAYABLE)

Caution Fees - Rs 20,000/-

Alumni Membership Fee - Rs 2,000/-

Note: Caution fees is refundable after completion of the course

RESOURCE PERSONS

The resource persons for the programme will include experts from School of Design Thinking(SoDT), Intellect Design Arena Ltd., IIMs, IIIT Ranchi, NITs, and reputed academic/research organizations.

FILL THE REGISTRATION FORM TO APPLY

CONTACT DETAILS



Dr. Bam Bahadur Sinha (Programme Co-ordinator)

Design Thinking & Innovation,
Indian Institute of Information Technology
Ranchi

+91-9199610251

bahadurbam@iiitranchi.ac.in

IMPORTANT DATES

PROCESS	DATE
Beginning of online application process	20th October 2022
Application Deadline	30th November 2022
Announcement of provisional shortlisted candidates	10th December 2022
Date for interview	20th - 22nd December 2022
Declaration of result	24th December 2022
Fee payment deadline	2nd January 2023
Date of waitlisted candidates admissions	4th January 2023
Registration and Operation	5th January 2023