



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్ भारतीय प्रौद्योगिकी संस्थान हैदराबाद Indian Institute of Technology Hyderabad

Inventing & Innovating in Technology for Humanity (IITH)

HYDERABAD, TELANGANA, INDIA



ABOUT HYDERABAD

- Hyderabad is the capital of southern India's Telangana state, with a population of 12.2 million and is home to **50+** national research institutions for Research, Manufacturing and Innovation. Hyderabad is a major center for the technology industry and a well-known hot spot of scientific research and innovation, a fact reaffirmed by recently released global rankings. Hyderabad's T-Hub Is World's Largest Innovation Campus (2.3 million sqft built-up space) for Startups, it aims to put India's innovation ecosystem worldwide.
- > Hyderabad has historic sites such as Golconda Fort, a former diamond-trading center, the Charminar, an old city landmark, and many more.
- > IIT Hyderabad (IITH) campus is in Kandi, Sangareddy district in Telangana State, about 65 km from Hyderabad (1 hr drive from the airport).
- ➤ IITH is one of the 8 IITs that were set up in 2008 (called the 2nd Gen IITs). India has 23 IITs now.
- > Since its inception, IITH has a strong relationship with Japan, through JICA financial support and the JICA FRIENDSHIP program.

IITH, A Dream Destination for Students, Academicians, Researchers & Industries



VISION

inventors and innovations. It will advance knowledge and scholarship to students in science, technology and liberal arts, and equip them to handle the challenges of the nation and the world in 21st century.

MISSION

To be recognized as ideators and leaders in higher education and research, and to develop human power with creativity, technology and passion for the betterment of India and humankind.

A GLANCE AT IIT HYDERABAD

- IITH is a 2nd Gen IIT established in 2008.
- Though IITH is 14 years old, it has been ranked, for the 7th consecutive time, among the top 10 institutes in India for Engineering in the NIRF ranking.
- In <u>QS Rankings-2023</u>, too <u>IITH</u> is among the <u>top 10 engineering institutes</u> in India engineering institutions, making it one of the most coveted schools for science and technology in the world. Among the <u>QS World University Rankings-2023</u>, IITH has acquired a place in <u>581-590 range</u> in the "Top universities in the world" category.
- IITH creates a unique holistic ecosystem for education that offers interactive learning, a very flexible academic structure, cutting-edge research, strong industry collaboration, and entrepreneurship.
- IITH enjoys a very special relationship with Japanese universities and industries that goes beyond academic and research collaborations.
- The campus is spread across 600 acres with some of the iconic buildings that will carry the signature of Japanese architecture.

- 4266 Students (~1200 PhD, ~1300 PG,
 ~1700 UG)
- 300 Faculty
- 280+ Staff
- 18 Departments (15 regular + 3 Virtual)
- 170+ Patents
- 9 Online MTech + Online MDes
- 8 Interdisciplinary MTech Programs
- 8 Centers of Excellence
- 9 Research and incubation centres
- 125+ Start-ups (1000+ jobs, INR 800+ Cr revenue)
- 9000 + publications (1,20,000+ citations)
- Rs. 600 Cr+ research funding

DEPARTMENTS

ENGINEERING

- Artificial Intelligence
- Biomedical Engineering
- Biotechnology
- Chemical Engineering
- Climate Change
- Civil Engineering
- Computer Science and Engineering
- Electrical Engineering
- Engineering Science
- Heritage Science and Technology
- Materials Science and Metallurgical Engineering
- Mechanical & Aerospace Engineering

SCIENCE

- Chemistry
- Physics
- Mathematics

LIBERAL ARTS, DESIGN, AND MANAGEMENT

- Liberal Arts
- Design
- Entrepreneurship and Management

ACADEMIC PROGRAMS

Under Graduate Programs

Bachelors of Technology (BTech)

- Artificial Intelligence
- · Biomedical Engineering
- Biotechnology & Bioinformatics
- Chemical Engineering
- Civil Engineering
- Computer Science and Engineering
- · Electrical Engineering
- Engineering Science
- Engineering Physics
- IC Design & Technology
- Industrial Chemistry
- Materials Science & Metallurgical Engineering
- Mechanical & Aerospace Engineering
- Mathematics & Computing
- Computational Engineering (Interdisciplinary)

Bachelors of Design (BDes)

Post Graduate Programs

Master of Technology (MTech)

- Artificial Intelligence
- · Biomedical Engineering (3 specialisations)
- Biotechnology
- Chemical Engineering
- Civil Engineering (5 specialisations)
- Climate Change
- Computer Science and Engineering (2 specialisations)
- Electrical Engineering (5 specialisations)
- · Techno-Entrepreneurship
- Materials Science & Metallurgical Engineering (2 specialisations)
- Mechanical & Aerospace Engineering (4 specialisations)
- · Interdisciplinary programs (8 specialisations)
- Online Mtech/MDes (10 specialisations)

Master of Science (MSc)

- Physics
- Chemistry
- Mathematics

MA in Liberal Arts (2 specialisations)

Master of Design (MDes)

Professional

IITH offer the following professional programs:

Master of Technology (Executive MTech) Biodesign

The Dept. of Biomedical Engineering offers an executive MTech. The program is an amalgamation of engineering and life sciences

Fellowship program

The Center for Healthcare Entrepreneurship (CfHE) offers a 12 months long fellowship program comprising of 30 credits of class room entrepreneurship training, including 8 weeks of clinical

FIRST Fellowship program

IITH offers PhD program for foreign students with a fellowship of about 10,000 USD per year and a contingency grants of Rs. 1 lakh per year.

RESEARCH PROGRAMS

All the departments (except Engineering Science) at IITH offer PhD program

IITH offers regular PhD programs in the following departments

- Artificial Intelligence
- Biomedical Engineering
- Biotechnology
- Chemical Engineering
- Civil Engineering
- Climate Change
- Computer Science and Engineering
- Electrical Engineering
- Heritage Science and Technology

- Materials Science and Metallurgical Engineering
- Mechanical and Aerospace Engineering
- Chemistry
- Physics
- Mathematics
- Liberal Arts
- Design
- Entrepreneurship and Management

INTERDISCIPLINARY (ID) PhD PROGRAM

- IIT Hyderabad offers Interdisciplinary (ID) PhD program for enthusiastic aspirants exploring the interface of various science and engineering disciplines. The interdisciplinary PhD program is coordinated by the Center for Interdisciplinary Programs (CIP).
- The ID PhD Program involves rigorous course work (12 or 24 credits depending on the background of students) followed by research work in their chosen area leading to a doctoral thesis.
- The Institute has formalized "Four" research areas as part of CIP interdisciplinary PhD program. The full list of interdisciplinary research projects can be found below.

Novel Materials & Techniques

Energy, Environment & Creative Design

Bioengineering & Healthcare

Artificial Intelligence,
Communications & Networks

RESEARCH THRUST AREAS

- 5G and Next Generation Communication Technologies
- Additive Manufacturing
- Artificial Intelligence
- Bio-Inspired Processes and Systems
- Catalysis
- Climate Change
- Energy
- Health Care
- Integrated Computational Engineering
- Nano-Technology
- Sensors and Devices
- Waste Management
- Smart Mobility
- Transportation
- Rural Development
- Robotics

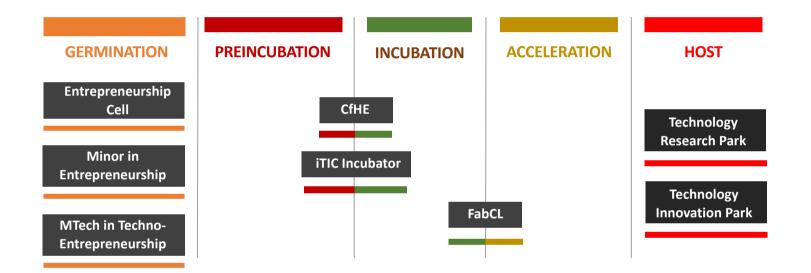


Life on IITH Campus

CAMPUS AMENITIES • Dining Hall • Cafeteria (Nescafe, Amul) Vending Machines • Specialty Clinic • 24X7 Hospital & Pharmacy • Bank Services and ATM Recreation center • Tinkerer's lab • Dance Room Supermarket • Sports facility (Basketball, Football, Badminton, Gym, TT, Swimming pool & Squash) • Post Office • DAV School IITH Campus

INNOVATION AT IITH

IITH ENTREPRENEURSHIP ECOSYSTEM



DEPARTMENT OF ENTREPRENEURSHIP AND MANAGEMENT
INSTITUTION'S INNOVATION COUNCIL
INTELLECTUAL PROPERTY CELL

itic

iTIC

- i-TIC Foundation is the Technology Business Incubator (TBI) at IITH. The focus is on creating a supportive and nourishing environment for entrepreneurs.
- The thrust areas at the Incubator are Artificial Intelligence, Aerospace, Telecommunication, Digital Manufacturing, Chip Design, Sensors, IT, Bio-Medical, Automotive, Advanced Materials, Energy, Flexible Electronics, and Other Emerging Technologies. 70+ Startups supported, 5 Cr+ Funds Granted to Startups, 100 Cr+ Revenue Generated by Startups, 800+ Jobs created by the Startups, ~1.5 L SFT Incubation Space & 150+ Mentors.
- To know more, visit: https://i-tic.iith.ac.in/



CfHE

- The Center's objective is to catalyze healthcare innovation to bring about affordable solutions to address the healthcare needs of India.
- The Center hopes to foster entrepreneurs to deliver a pipeline of cost-efficient solutions, which are increasingly 'commercialized'. Housed in a 6000 sq.ft., brand new facility, the CfHE incubator offers design and 3D fabrication facilities for prototyping of solutions and devices and serves as a rapid acceleration platform for the fellows and startups.
- To know more, visit: https://cfhe.iith.ac.in/



FabCI

- The Fabless Chip Design Incubator (FabCI) is a flagship program being executed with the support of the Ministry of Electronics and Information Technology (MEITY) and focuses on creating an ecosystem wherein these primary activities get executed for any startup in the area of chip design.
- The primary motivation for this unique incubator program is to provide a one-stop solution for start-ups focusing on the area of chip design.
- To know more, visit: http://fabci.iith.ac.in/

IITH TRP

- IITH Technology Research Park is an independent Section 8 Company, founded, promoted, and hosted by IITH and is a self-reliant team endorsed by IITH and its alumni.
- The IITH Research Park promotes the betterment of research and development by the institute through friendship with industry, helping in the advancement of modern ventures, and built-up economic development.
- The IITH Research Park assists organizations with a research target to set up an infrastructure in the park and advantage of the expertise available at IITH. 1.5 L SFT Space was added recently to TRP at IITH.
- To know more, visit: https://trp.iith.ac.in/

CENTRES OF EXCELLENCE (6 COE's)

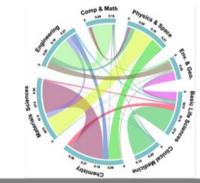
Rural Development Centre

- Rural Development Centre (RDC) at IITH was established in July 2020 with a vision to support Rural development initiatives of the Government through innovative technologies being developed at IITH.
- To know more, visit: https://rdc.iith.ac.in/

Smartphone-based game to enhance hygiene practice in rural children

Centre for Interdisciplinary Program (CIP)

- Center for Interdisciplinary Programs have been created with a vision of fostering interdisciplinary studies across various disciplines at IITH. We @IITH envision creating new paradigms in education integrating techniques, tools, and science from multi and cross-disciplinary expertise on the IITH campus.
- To know more, visit: https://cip.iith.ac.in/



Representational illustration

CCE

- The Centre for Continuing Education (CCE) was established at IITH with the aim to conduct training programs to students, academicians, and working professionals across the country.
- With a rapid rise in E-learning programs, CCE at IITH plans to conduct online programs that can facilitate the learning of working professionals by meeting their work schedules.

To know more, visit:

• TLC: http://tlc.iith.ac.in/,

• GIAN: https://www.iith.ac.in/~gian/

• TEQIP: http://teqip.iith.ac.in_/

IITH-DRDO Cell

- An MOU has been signed between the Chairman, DRDO, and the Director, IITH, on 3 July 2020 or the establishment of the DRDO-IITH research cell at the IITH campus.
- This Cell is now converted into a DIA Centre of Excellence





DST NM-ICPS TIHAN

- Department of Science and Technology (DST) under the **National Mission on Interdisciplinary Cyber-Physical** Systems (NM-ICPS), Govt. of India has sanctioned the prestigious Technology Innovation Hub to IITH in the technological vertical of Autonomous Navigation and Data Acquisition Systems (UAVs, ROVs, etc.).
- To know more, visit: https://tihan.iith.ac.in/

Design Innovation Centre

- Design Innovation Centre at IITH is engaged in Innovation through design and technology along with partnering institutions engaging with mutually beneficial innovation activities.
- To know more, visit: http://dic.iith.ac.in/





Virtual Reality of Medak Cathedral Church

Alumni & Corporate Relations (ACR)

Alumni Engagements

- Alumni Meet & Greet @ major cities
- Foster talks by alumni
- IITH annual alumni day
- IITH monthly digest to alumni
- IITH AA engagements with students
- IITH campus access facilities



Fundraising Activities

- Legacy projects funding alumni batches
- > Excellence awards endowment by alumni
- Scholarships supported by alumni
- Engaging with corporates for CSR funding
- Fundraising campaign drives
- > Scholarship for EWS funded by NGOs



Administration Building

INTERNATIONAL RELATIONS

Roles & Responsibilities of International Relations

- International Admissions and International Collaborations
- Coordinate international delegation visits to IITH
- Encourage, maintain and sustain relationships with foreign universities and build new partnerships
- Promote International admissions in neighboring countries
- Promote international student exchanges (both inbound and outbound)
- Facilitate faculty exchanges and research collaborative workshops

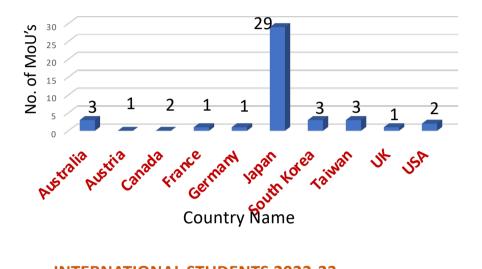
We are focused on building strong research collaborations with foreign universities. To accomplish this, we envisage a 4-stage process:

- Faculty interactions (visits & workshops, video-conferencing, joint proposals, co-authored papers)
- Student exchanges (PhD and MS scholars to spend 3-6 months carrying out research at collaborators' laboratories)
- Joint supervision of research scholars, serving on doctoral and master committees
- Joint-degree programs (where sufficient sustainability and scalability of relations have been demonstrated)

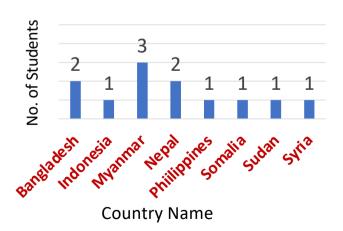




PARTNERS



INTERNATIONAL STUDENTS 2022-23



JOINT DOCTORAL PROGRAMS

- IITH SUT (Swinburne University of Technology), Australia
- IITH-Deakin University, Australia
- IITH— NTHU (National Tsing Hua University), Taiwan



Japan-IITH.... JICA & Japan Desk









- Japan committed to initiating a working group for setting up a new IIT in August 2007 as decided by the then Prime Ministers.
- The bonding between IITH and Japan is strong, sustainable, and stable like the "Covalent Bond"
- IITH has a very unique collaboration with Japanese universities and industries
- Opportunities to study in Japan are one of the important aspects of the IITH-Japan Collaboration.

- The aim is to strengthen the bilateral relationship between India and Japan through academia and industry
- As a first step in building a sustainable platform for academic and industryuniversity collaboration between India and Japan, JAPAN DESK was established physically at IIT Hyderabad campus in Jan 2022 which will provide a one-stop service in academic and industry-university collaboration. It is aimed to operate independently even after the project is completed after six years.

FRIENDSHIP 2.0 (Phase 2, 2021 - 2026)

Goal: To promote joint research and other collaborations with industry, and to **establish an autonomous** and sustainable <u>platform</u> for industry-university collaboration between India at IITH and Japan

Activities:

- Scholarships for IITH master holders for doctoral studies in Japan
- Joint research with Japanese universities/industries
- Academic collaboration such as co-supervising of IITH's master's students
- FRIENDSHIP Scholars Alumni networking programs
- Industrial exhibition at CEATEC in Japan
- Participation in Asian Conference on Machine Learning

19 MoUs with Japanese universities/graduate schools, 4 MoUs with Japanese research institutes (RIKEN, AIST, NIMS and NIED, and 13 partnerships with Japanese industries among over 50 international MoUs







IITH Japan Cooperation Cell (Japan Desk)

- One-stop services for academic and industrial collaboration
- IITH-Japan Collaboration Database management
- Providing information on joint research, research funding and external funding, internships etc.
- Japan Desk Portal Site can be accessed from the following link: https://www.iith.ac.in/japandesk/

Expanded Cooperation with Japanese Universities

- IITH seeks opportunities to collaborate with Japanese researchers in the academic and industrial sectors
- Promotion of **collaborative academic programs** with Japanese universities (Sandwich programs, co-supervising programs)
- Enhancement of collaborative research based on the capability and research outputs of IITH faculty members





Names of Universities

Osaka University
Ritsumeikan University
Waseda University
Hokkaido University
Shizuoka University
Akita International University
The University of Aizu
University of Tokyo
Yokohama National University
Hiroshima University
Nihon University
Shimane University
Saitama University
National Institute of Material Science



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