INSTITUTE OF INFRASTRUCTURE TECHNOLOGY RESEARCH AND MANAGEMENT

AHMEDABAD, GUJARAT
Institute of Infrastructure, Technology, Research and Management

IITRAM, established in 2013, at Ahmedabad, is an initiative of Government of Gujarat vide Gujarat Act No. 5 of 2013, with a vision to facilitate and promote studies, research, technology incubation, product innovation and extension work in the field of infrastructure, science, technology and management. It also strives to achieve excellence in the area of higher technical education.

Progress:

- Institute initially started offering B.Tech. Program in the disciplines of Civil and Electrical Engineering from the academic session 2013-14.
- At present, it is offering B.Tech., M.Tech. and Ph.D. Programs in Civil, Electrical and Mechanical Engineering disciplines with a focus on infrastructure.
- In a short span of 3 years, IITRAM has evolved with 50 Faculty Members possessing the high educational credentials, doctorates and post-doctorates from reputed Institutes like IITs, IISc, BITS Pilani etc. to guide and lead the academic life of the students.
- Institute also plans to introduce more programs related to Infrastructure and Management in future.

Academic Achievements in a short span of 03 Years at IITRAM:

- Number of Research Papers published in National/International Journals/Conferences: 54
- Amount of grant received under Research Projects: Rs.1.5 crores (From DST, MPCOST, Bhopal and University of Cagliari)
- Faculty Awards: 07
- Number of Articles/Journals/Conferences reviewed: 16
- Number of invited Lectures: 11
- Number of Books/Chapters Published: 05
- Number of Patents Filed/Published/Obtained: 15
- Center of Excellence in the field of 'Industrial Machinery' in collaboration with Siemens
- Advanced teaching-learning system through MOOCs, MOODLE, NPTEL, Coursera, etc.
State-of-the-art Laboratories:

In addition to the state-of-the-art essential teaching laboratories, laboratories in cutting edge areas have been developed. These include:

- **E-Yantra**: E-Yantra is an initiative to spread education in embedded systems and Robotics by IIT Bombay sponsored by Ministry of Human Resource Development through the National Mission on Education through ICT (NMEICT).

- **Advance Control System Laboratory**: The laboratory is being developed as state-of-the-art ‘Quansor Centre of Excellence' equipped with most modern and sophisticated control equipment to carry out the experimentation and research in the field of control engineering.

- **Materials Science and Engineering Laboratory**: The Materials Science and Engineering laboratory is equipped with the following modern equipment to solve the problems faced by the industry.
  - Automatic Grinding & Polishing Machine (Make: STRUERS)
  - Inverted Metallurgical Microscope Digital Camera with Image Analysis Software (Make: OLYMPUS)
  - DEFORM - 3D software along with Machining and Heat Treatment Module

- **Manufacturing Processes Laboratory**: The Laboratory for Manufacturing Processes comprises of following advanced facilities to provide sustainable solutions to the Indian industry.
  - Power Analyzer (Make: FLUKE)
  - Dynamometer (Make: KISTLER)
  - Tool-Maker’s Microscope (Make: MITUTOYO)
  - CNC Turning Centre (Make: MACPOWER)
  - ANSYS with LS DYNA
  - VMC (Make: MACPOWER)
  - Surface Roughness Tester (Make: TAYLOR HOBSON)

- **Product Design and Validation Laboratory**: The Product Design and Validation Laboratory is equipped with the latest configured 30 workstations and dominant tools like NX9 CAD, FEMAP (Finite Element Modelling and Post, Processing), NX9 Advanced Simulation and Motion Analysis.

- **Advanced Manufacturing Laboratory**: The Advanced Manufacturing Laboratory is primed with 30 work stations and provided with industry's most advanced products like NX CAM, Digital Manufacturing products and PLM Software.

- **Rapid Prototyping Laboratory**: This popular lab is equipped with advanced Additive Manufacturing facility to print big, tough and functional models in ABS.
**Automation Laboratory:** Automation Laboratory is used to understand the role of programmable logic controllers in complex systems, modules and subsystems. Following latest facilities make this lab to cater solutions to various Manufacturing Industries.

- HMI : Siemens KTP 600 Basic and TP 700 Comfort Panel
- PLCs : Siemens S7-1214C CPU, Siemens S7300
- Siemens TIA Portal V12 / Step 7 5.6
- Siemens WinCC V12 / WinCC Professional
- Siemens PLC SIM V12 / PLC SIM 5.4

**Mechatronics Laboratory:** Mechatronics Laboratory is the integration of Mechanical, Computer Science, Electronics, Control and Electrical engineering and it is equipped with following advanced facilities:

- Cube assembly pro system
- PLCs: Siemens S7-300
- Diagnostic Kit 2006
- Siemens WinCC V12 / WinCC Professional
- Pressing Units for assembly purpose
- Festo Fluid Sim 4.2
- Siemens PLC SIM V12 / PLC SIM 5.4
- Siemens TIA Portal V12 / Step 7 5.6

**MCMT Laboratory:** It has a state-of-the-art facility for getting trained latest milling and turning CNC controllers like SINUMERIK 808D Milling and Turning controllers. It is also equipped with the latest product from Siemens like 31 axis SINUMERIK 808D SL controller.

**Computer Integrated Manufacturing Simulation (CIMS) Laboratory:** Computer Integrated Manufacturing Simulation Laboratory is the unique manufacturing approach of using computers to control the entire production process. Few of the major equipment installed by Siemens are:

- Automated Guided Vehicle (AGV)
- Aristo XT Robot
- Flex Turn
- Automatic Storage & Retrieval System (ASRS)
- Assembly Station
- Flex Mill

**CNC Programming Laboratory:** It has a state-of-the-art facility for getting trained latest milling and turning CNC controller. It is equipped with the latest product from Siemens like 31 axis Sinumerik 840D SL controller. It is preconfigured to meet the requirements. It offers intelligent CNC features and simulators that are required before CNC machining software.

In nutshell, IITRAM fraternity is creating industry ready engineers which is bringing industry and academia further closer to each other to create avenues of joint research and development work for achieving the mission “Make in India”.
Learning Resource Center (LRC):

- Fully automated RFID based library with SOUL 2.0 Integrated Library Management Software
- Text and Reference books: 5,000+
- E-Books: 7,000+
- E-Journals: 6,000+
- Open Access Resources, Open Coursewares, Subject Gateways, Electronics Thesis & Dissertations etc.
- E-books from Elsevier, Springer, and IEEE etc.
- Campus wide Computer Centers with 300 workstations networked with dedicated lease line and LAN
- Campus wide Wi-fi facility
- Summer Internship to students from the very first year of their studies

Academic Linkages:

- With Space Applications Centre, Indian Space Research Organization (ISRO), Department of Space, Government of India, Ahmedabad for IRNSS Navigation Receiver Field Trial and Data
- With Indian Institute of Remote Sensing (IIRS), Dehradun, Department of Space, for its online outreach programmes through satellite lecture Series. Interested Institute students are encouraged to participate in various online IIRS outreach programs conducted at IITRAM. The participants have undergone Basics of Remote sensing, Geographical Information System, Geo-special technology for urban planning, Global Navigation satellite system, etc.
- With Indian Institute of Technology, Gandhinagar for Academic and Research Tie-Ups.

Future Plan:

- To become an Institute of National importance in the area of Infrastructure, Technology and Management with a status of centrally funded Technical Institute.
**Awards:**
- “Outstanding Engineering Institute West” during National Education Awards 2015 by ABP News
- “Best Institute in Skill Development Programs” during 8th Innovative Education Awards 2016 by DNA
- CSR Top Institutes of India Awards 2016 for Excellence
- “Outstanding Engineering Institute West” during National Education Awards 2016 by ABP News
- “India’s Best Engineering Colleges and Courses, As Chosen by Students” by MINT.

View of IITRAM at glance:
https://www.youtube.com/watch?v=vIrs0I9XQ2Q

View of Center of Excellence (CoE) at IITRAM:
https://youtu.be/XdblpE5Ezti

View of Photo and Video Gallery of IITRAM:
http://iitram.ac.in/z-gallery-main
http://iitram.ac.in/Videogallery

**Mission:**
Make in India

**Task Accomplished:**
Bridging Gap between Industry and Academia