TATA TECHNOLOGIES

CENTER FOR INVENTION, INNOVATION, INCUBATION & TRAINING (CIIIT)

(Government Polytechnic College Baramulla)

TATA TECHNOLOGIES LTD

GOVERNMENT POLYTECHNIC COLLEGE, BARAMULLA

Engineering a *better world*.

About Tata Technologies

Tata Technologies makes product development dreams a reality by designing, engineering, and validating the products of tomorrow for the world's leading manufacturers. With more than 9400 professionals serving clients worldwide, Tata Technologies is the manufacturing industry's premier partner for advanced engineering, research and development, product lifecycle management consultancy and software, and connected enterprise IT solutions. Tata Technologies' 17 global delivery centers spread across India, US, UK, Sweden, Romania, Singapore, China, Japan and Thailand help cater the Automotive, Aerospace and Industrial Heavy Machinery industries
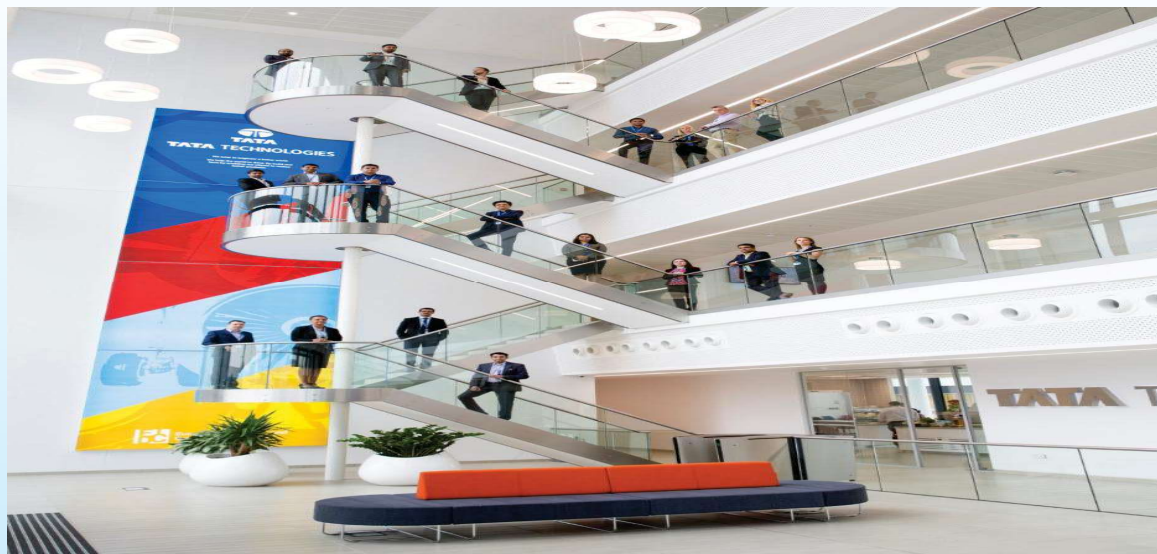
Tata Technologies partners with the world's most successful Automotive and Industrial Heavy Machinery manufacturers to deploy effective vehicle programs, drive efficiencies and innovation throughout the entire product life cycle, deliver discrete work packages to complete end- to-end design & development and achieve faster time to market. Strategically positioned within the Tata Group as a global provider of comprehensive services for the Aerospace and Defense industry, we cover every aspect of the value chain including design, manufacturing engineering, productivity improvement, digital manufacturing, process optimization and onwards into aftermarket / MRO support.

Engineering a *better world.*

Center for Invention, Innovation, Incubation and Training

Vision

"To excel in technical education having focus on innovative design, entrepreneurship development, enhancing employability rate and developing environment friendly society."

Mission

- To educate and train students for practicing professionalism, ethical approach, leadership and entrepreneurship ability.
- To nurture conducive environment for learning.
- To develop proficient technocrats catering to the needs of industry, society and environment.
- To enhance rapport with distinguished institutes, industries and alumni for excellence in education, research, and consultancy.

Objectives of CIIIT

- Promote Invention, Innovation and Incubation under the mentorship of industry experts.

- Strengthen Government Polytechnic College Baramulla's Vision & Mission of innovation entrepreneurship and skill development including all the nearby colleges.

- Enable Industry- Academia partnerships.

- To leverage advanced competency centers and expertise of Industry subject matter experts (SMEs) for training the students, industry professionals and unemployed youth with industry relevant skills and competencies in industry environment.

- Enables competency development in modern engineering tools necessary for product design, development and manufacturing and provide students to gain insights of Industry 4.0 and other disruptive technologies.

Engineering a *better world.*
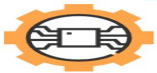
Competency Center Development under CIIT:

It consists of Nine centers as given below:

Innovation Design and Incubation Centre

Product Verification Analysis Centre

Product Lifecycle Management Centre
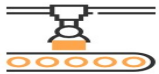
Value Engineering and Benchmarking Centre

Autonomous Connected Electrified (ACE) Centre

Mechatronics and IOT Centre

Digital Manufacturing Centre

Manufacturing Execution System Centre

Advanced Manufacturing Centre

Engineering a *better world*.

This Center facilitates experiential learning pertaining to product design and engineering. Innovation Design and Incubation Center provides industry environment with the latest technology tools (such as PTC CREO etc) used by major industries for product design & engineering.

This center consists of high-end industrial workstations, which are loaded with advanced tools used for Product Design and Engineering.
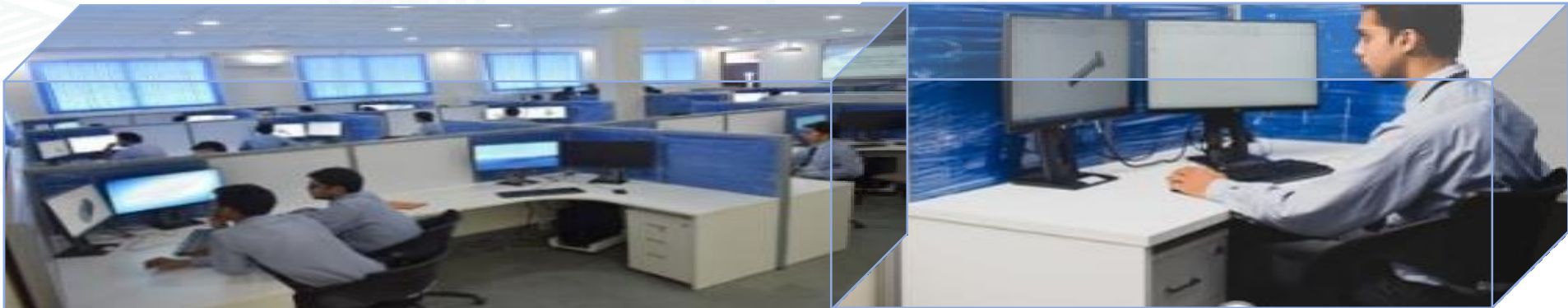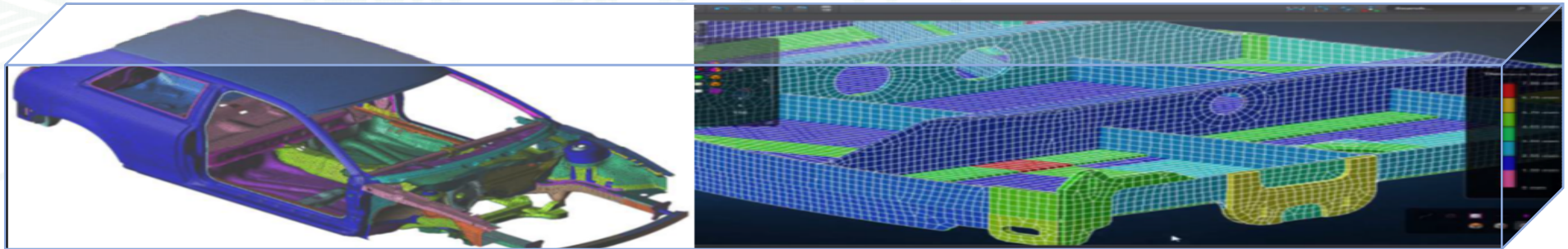

Illustrative Photo

Key Enablers:

- High End Industrial Workstations
- CREO Software
- Design Thinking & Innovation Process
- Product Design and Development
- Regulations
- Industrial Best Practices

Job Roles:

- Design Engineer, Product Engineer, CAD Engineer, CAD Executive, CAD Operator.

Engineering a *better world*.

Product Verification Analysis

This Center facilitates experiential learning pertaining to product validation and optimization of design. This center consists of simulation software technology that enables engineers to validate and optimize their designs using virtual prototypes. These technologies help companies to improve quality, save time, and reduce costs associated with design and test of manufactured products. These Software (such as Ansys, FEAST etc) are used by leading manufacturers for linear and nonlinear finite element analysis (FEA), fluid dynamics (CFD), advanced material modelling, acoustics, fluid structure interaction, multi-physics, optimization, fatigue and durability, multi-body dynamics, controls, and manufacturing process simulation.

Illustrative Photo

Key Enablers:

- High End Industrial Workstations
- ANSYS Mechanical CFD Maxwell, ANSYS HFSS, ANSYS Q3D Extractor, ANSYS Siwave, ANSYS SCADE Suite Advanced Modeler Seat, ANSYS SCADE Suite KCG Code Generator - C and ADA, ANSYS SCADE Test Model Coverage, ANSYS HPC Workgroup 256, Ansys Learning Hub.
- FEAST, CREO
- Design Thinking & Innovation Process, Product Design and Development and Industrial Best Practices

Job Roles:

- CAE Engineer, Stress Engineer, CAE Assistant Engineer, CAE Support Executive.

Career Opportunities:

- Automotive Industry, Aerospace Industry, Consumer Goods, Construction & Agricultural Equipment's, Industrial Heavy Machinery, Manufacturing Industries, Steel Industries, Electricals and Electronics

Engineering a *better world.*

Product Lifecycle Management

Product life cycle management is the integration of all aspects of a product, taking it from conception through the product life cycle (PLC) to the disposal of the product and components.

PTC Windchill.

Illustrative Photo

Key Enablers:

- High End Industrial Workstations
- CREO, Windchill
- Design Thinking & Innovation Process, Product Design and Development
- Product Lifecycle Management
- Industrial Best Practices

Job Roles:

- PLM Engineer, PLM Solution Architect, PLM Developer, Assistant PLM Engineer, PLM Operator.

Career Opportunities:

- Automotive Industries, Aerospace Engineering, Construction Equipment's, Locomotive Industrial Heavy Machinery, Consumer Goods, Oil and Gas, Manufacturing Industries, Steel Industries, Electricals and Electronics etc.

Engineering a *better world.*

Value Engineering and Benchmarking

This Center facilitates experiential learning pertaining to various systems and sub-systems. Teardown-Value Engineering-Benchmarking

Illustrative Photo

Key Enablers:

- High End Industrial Workstations and CREO
- Advanced Vehicle Systems and Sub Systems
- Car Lift, Teardown tools
- Value Engineering Tools and Techniques
- Design Thinking & Innovation Process | Product Design and Development

Job Roles:

- Design Engineer, Automobile Engineer, VAVE Engineer, Assist. Automobile Engineer, Auto Mechanic, VAVE Assistant.

Career Opportunities:

- Automotive Industry, Construction Equipment's, Agricultural Equipment's, Industrial Heavy Machinery, Manufacturing Industries, Electricals and Electronics etc.

Engineering a *better world.*

Autonomous- Connected- Electrified

Illustrative Photo

Key Enablers:

- High End Industrial Work Stations, CREO
- Full EV Chassis with all working systems and EV Components and Tools
- EV DC Fast Charger, Industrial Grade Sensors, IOT Board
- Internet of Things (IOT)
- Product Design and Development & Industrial Best Practices

Job Roles:

- Design Engineer, EV Engineer, Assist. EV Engineer, Autonomous Car Engineer, EV Repair Mechanic.

Career Opportunities:

- Automotive Industry, Construction & Agricultural Equipment's, Industrial Heavy Machinery, Manufacturing Industries, Electricals and Electronics etc.

Engineering a *better world.*

Mechatronics and IoT

This center also acts as hub for various research activities related to Internet of Things and next generation technologies. Mechatronics Center will act as an incubation center for advance technologies in the Automotive electronics field and will provide the basic Automotive E&E architecture platform on which students will be able to experiment, research and innovate on the upcoming trends.

Today every industry is facing a challenge to integrate and automate many features for any system, with mechatronics it is now easy to have simplified designs, rapid machine setups, cost effectiveness, quick development trials, optimized performance, productivity and reliability. The rise of IoT will soon bring the factory of the future to reality. such as Thingworx platform which is the fastest way to unlock the value of the physical-digital convergence of the IoT.

Illustrative Photo

Key Enablers:

- High End Industrial Workstations
- Thingworx Industrial Connectivity
- Internet of Things Hardware and Data Analytics Tools
- Sensors and other accessories
- Electric and Electronic components and Industrial Best Practices
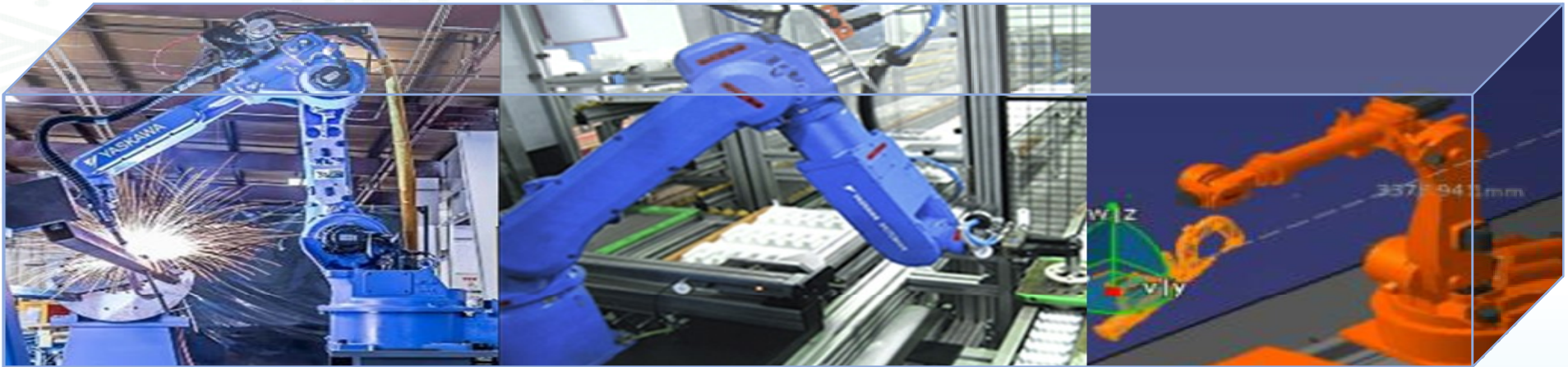
Job Roles:

- Mechatronics Engineer, IOT Engineer, IOT Developer, Mechatronics Technician, IOT Technician, IOT Smart Agriculture Technician.

Career Opportunities:
- Automotive Industries, Aerospace Engineering, Construction Equipment's , Locomotive, Industrial Heavy Machinery, Oil and Gas, Consumer Goods, Manufacturing Industries, IT Industry, Electricals and Electronics etc.

Engineering a *better world.*

Digital Manufacturing

This Center facilitates in experiential learning pertaining to various manufacturing processes which are used in manufacturing industries. This center consists of Industrial Robotics, Welding Fixtures, Conveyor, Gripper etc. This Center will help students to perform Robotic Programming for various manufacturing operations such as arc welding, material handling etc..

Robots are especially useful in hazardous application like automobile spray painting, Welding and are also used to assemble electronic circuit boards in Automotive industry.

Illustrative Photo

Key Enablers:

- Industrial Workstation
- Industrial Robotics
- Arc Welding, Welding Fixture, Gripper
- Assembly Line, Palletizing
- Industrial Applications and Industrial Best Practices

Job Roles:

- Industrial Robot Engineer, Robot Specialist, Robotic Operator, Digital Manufacturing Assistant Engineer, Simulation Engineer.

Career Opportunities:

- Automotive Industries, Aerospace Engineering, Locomotive, Consumer Goods, Manufacturing, Industries, Electricals and Electronics etc.

Engineering a *better world.*

Manufacturing Execution System (MES)

This center is a specialized center which enable students to develop skills in Manufacturing Execution System. The automotive industry is a discrete manufacturing industry that has many characteristics in common with process manufacturing. These include high levels of automation (robotics, programmable logic controllers (PLCs), vision systems and automated assembly lines).

The focus of an automotive assembly MES — and of the entire operation — is keeping the assembly line moving. The MES focus is on tools to help production management identify, diagnose, predict and solve any issues that could cause disruption.

Manufacturing Execution center consist of high-end industrial workstations, Conveyor with PLC tools like Factory Magix.

Illustrative Photo

Key Enablers:

- High End Industrial Workstations
- Conveyor with PLC
- Pick to Light Sensor Integration
- Tata Technologies MES Technology Tool
- Assembly Line and Industrial Best Practices

Job Roles:

- MES Engineer, MES Developer, MES Specialist, MES Technician.

Career Opportunities:

- Automotive Industries, Aerospace Engineering, Locomotive, Consumer Goods, Manufacturing, Industries, Electricals and Electronics etc.

Engineering a *better world*.

Advanced Manufacturing

This Advanced Manufacturing Center is an industry environment for experiential learning of various advance manufacturing processes used in different industries. It is equipped with the latest industrial equipment for CNC programming, Additive Manufacturing, Reverse Engineering, Laser cutting etc.

Illustrative Photo

Key Enablers:

- High End Industrial Workstations
- Vertical Machining Center, CNC Turning Machine, Industrial 3D Printer Plastics
- Hydraulic Press and Tool Set, CO2 Laser engraving & cutting machine
- Mastercam Software, PROCAM
- Industrial 3D Printer Plastics and Industrial Best Practices

- **Job Roles:**

- Manufacturing Engineer, VMC Engineer, Additive Manufacturing Engineer, VMC Machine Operator, Additive Manufacturing Operator.

Career Opportunities:

- Automotive Industries, Aerospace Engineering, Construction Equipment's, Locomotive, Industrial Heavy Machinery, Consumer Goods, Manufacturing Industries, Steel Industries, Electricals and Electronics etc.

Engineering a *better world.*

The disruptive technologies pertaining to Electric Vehicles, Autonomous vehicles, Industry 4.0, Mechatronics, Internet of Things, Data Analytics, Additive Manufacturing, Robotics etc are influencing every Industry and providing NEW Entrepreneurship Avenues for young Engineers to develop Innovative Solutions which impact Business drastically. The development of these game changing technologies on one hand is making exiting capabilities of OEMs obsolete and compelling them to adopt above said technologies to stay competent in market and on other hand it is providing opportunities for young engineers to quickly learn and start their own business and compete with existing big players as expertise of old OEMs is no more relevant.
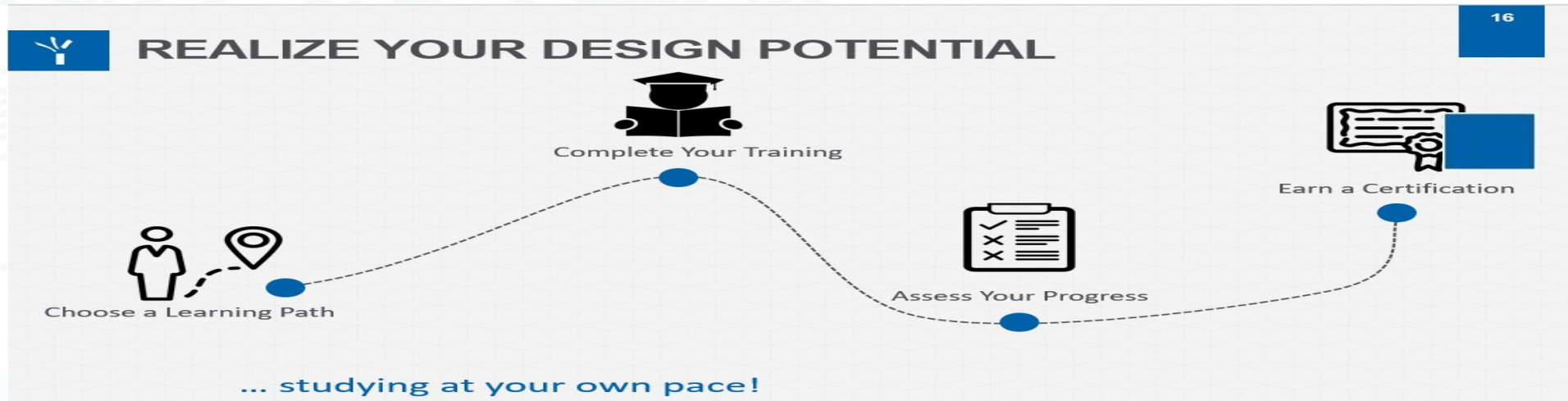

Illustrative Photo

The disruptive technologies are influencing every phase of product design and development and it is providing huge potential opportunities for start- up to develop innovative solutions which as business value.

Some of the areas include following:

- Advanced Software's / AR for styling, package, ergonomics study, perceived quality, proactive identification defects etc.
- Design and development of advanced Electric Powertrain, Connected Car, Autonomous vehicles etc.
- Infotainment, HMI, advanced active safety systems etc
- Advanced Virtual Testing etc
- Industry 4.0, Advanced Manufacturing, Robotics, Additive Manufacturing
- Service | VR - AR based Repair and Maintenance
- Mobility - APP based services: Example Cabs, Rentals, Zoom Car etc
- Sales & After Sales (AR/ VR Based)
- Business Models

Engineering a *better world.*
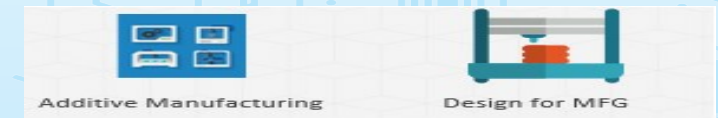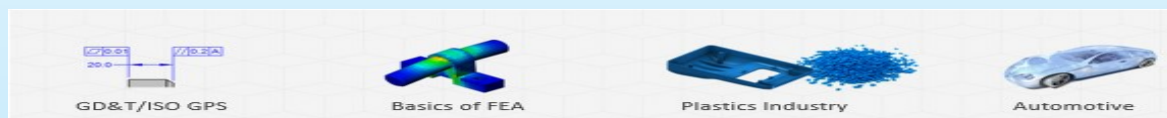
I GET IT eLearning

i GET IT is online self-paced training program for engineers by Tata Technologies. The i GET IT training course library contains courses and tutorials for today's leading Engineers and industry topics. It is the biggest and most popular online training provider in world. I GET IT updates its material with the launch of new version for every course.

REALIZE YOUR DESIGN POTENTIAL

16

Choose a Learning Path

Complete Your Training

Assess Your Progress

Earn a Certification

... studying at your own pace!

Multiple Question Types
Multiple-choice, Multiple-select, Fill-In-Blank and T/F.

Earn Certificates
Students earn certificates for passing assessments.

Proficiency Level Badges
Badges earned for each assessment score based on proficiency levels.

Customizable
Set assessment settings and customize certificate assessments.

PRACTICAL LEARNING APPROACH

Blended Training Courses
Mix video lessons and comprehensive projects for blended approach.

Content Tracking
Instant progress tracking while going through courses.

In-Course Quizzes
Users can take small quizzes inside the course to measure their learning.

Template Driven
Content templates creates consistent experience for students.

GD&T/ISO GPS   Basics of FEA   Plastics Industry   Automotive   Additive Manufacturing   Design for MFG

Engineering a *better world*.

Admission Procedure

S no.	Admission Type	Admission Criteria	Condition
1	Student Admission	i) Student must be Pursuing B.Tech 3rd/4th year in Engineering & Technology for B.Tech related courses. ii) Student must be Pursuing Diploma/ITI in respective branch for admission in Diploma/ITI related courses	Student must submit bona-fide letter from the institution where he/she is enrolled.
2	Open Admission	The candidate must possess Degree/Diploma/ITI certificate in engineering & technology.	i) The candidate must submit M.Tech/ B.Tech/Diploma or ITI completion certificate. ii) In case of competition for admission, the selection will be done on the basis of merit in respective qualification
3	Sponsor Admission	Industry Sponsor Candidates/ Faculty sponsored from other institutions	Letter from respective Organisation

S.No	Competency Center Name	Certificate Course Name	Batch Size	Duration	Eligibility	Fee for Students	Fee for sponsored candidates
1	Innovation Design & Incubation	Design Engineering	30	3 Months	M.Tech/ B.Tech	12000	15000
		CAD Engineering	30	3 Months	Diploma	9000	12000
		CAD Operator	30	3 Months	ITI	6000	9000
2	Product Verification and Analysis	Finite Element Analysis	20	3 Months	M.Tech/ B.Tech	12000	15000
		Finite Element Analysis - FEAST	20	3 Months	M.Tech/ B.Tech	12000	15000
3	Product Lifecycle Management	PLM Application Engineering	10	3 Months	M.Tech/ B.Tech	10000	12000
4	ValueEngineeringAndBenchmarking	Automobile & Value Engineering	20	3 Months	M.Tech/ B.Tech	10000	15000
		Auto Maintenance and Repair	20	3 Months	Diploma / ITI	6000	9000
5	Autonomous Connected Electrifies	Electric Vehicle & Connected Autonomous Vehicle	20	3 Months	M.Tech/ B.Tech	10000	15000
		Electric Vehicle Repair	20	3 Months	Diploma / ITI	6000	9000

S.No	Competency Center Name	Certificate Course Name	Batch Size	Duration	Eligibility	Fee for Students	Fee for sponsored candidates
6	Mechatronics & IoT	Mechatronics and IOT Engineering	20	3 Months	M.Tech/B.Tech	10000	15000
		Home Appliance Technician	20	3 Months	Diploma / ITI	6000	9000
7	Digital Manufacturing	Digital Manufacturing & Industrial Robotics	20	3 Months	M.Tech/B.Tech	10000	15000
		Robot Operator	20	3 Months	Diploma / ITI	9000	12000
8	Manufacturing Execution System	Manufacturing Execution System Engineering	20	3 Months	M.Tech/B.Tech	10000	15000
		Manufacturing Execution System Operator	20	3 Months	Diploma / ITI	6000	9000
9	Advance Manufacturing Engineering	Advanced Manufacturing	20	3 Months	M.Tech/B.Tech	10000	15000
		Machine Tool Operator / CNC Operator	20	3 Months	Diploma / ITI	6000	9000
10	Semester Training			4Week 6Week Full semester	M.Tech/B.Tech Students	4000 6000 10000	-
				4Week 6Week Full semester	Diploma/ITI Students	3000 5000 8000	-

THANKS