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

GADCHIROLI, MAHARASHTRA

ABOUT CIIIT GADCHIROLI

To Promote Invention, Innovation, and Incubation and to provide industry-based training to students in Gadchiroli region, Tata Technologies has collaborated with the Government of Maharashtra- Gadchiroli through District Collector.

This Center is inaugurated (Dated 15 November 2023) by Chief Minister- Maharashtra Shri. Eknath Shinde in presence of District Collector Sir other local leaders.

Center for Invention, Innovation, Incubation and Training CIIIT project is a joint initiative by TATA Technologies Led industry consortium & Government of Maharashtra, Gadchiroli, hosted by Gondwana university in their campus at Gadchiroli. This ambitious project aligns with the state's vision to undertake impactful initiatives and contribute to the nation-building effort. The CIIIT will function as advanced skill training centre for students and potential employers, in addition to serving as technology hub and skill centre for large industries and MSMEs.

During the inauguration event, Chief Minister Maharashtra Shri Eknath Shinde emphasized the significance of a technology-driven economy. "The Chief Minister expressed his belief that not only students will be trained through this training centre but also entrepreneurs will be created from district like Gadchiroli and the overall economic development of Gadchiroli will be boosted. With the opening of a centre equipped with modern technology, many opportunities for training and employment will be available to the youth of Gadchiroli. Gadchiroli is focusing on developing infrastructure in the district with a view to overall development of the district.

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.

ROLE OF DISTRICT ADMINISTRATION IN CIIIT

District Administration, Gadchiroli under the chairmanship of District Collector, Gadchiroli will anchor the functioning of the institute in the district. The district administration has supported the development of institute through provision of land, electricity, other infrastructural resources, and necessary permissions.

The district administration with Tata Technologies Ltd and Gondwana University, Gadchiroli will play a central role in administering the institution, deciding the courses and course structures, admissions, fees for the training and its utilization for maintenance and other purpose.

ABOUT GONDWANA UNIVERSITY

The Gondwana University has been conceived and formed with a foresighted view to cater the aspirations of the economically so also socio-culturally backward districts of Gadchiroli and Chandrapur. Though the network of Governmental agencies have been constantly trying to execute the state welfare policies of an all-inclusive development, the resultant progress has been sluggish compared to other areas of the state.

Conventionally a university is concerned with higher education alone. As a bold experiment we wish to have a small but important deviation from this. For example, in rural and backward areas we find vast number of young people, who are educated just up to middle school level, yet have inborn talents for doing skilled jobs after proper and adequate training. So, there is need to provide such people a job-oriented education, motivating them to be an entrepreneur or to be employed with a good package to live their life equal status and satisfaction. There things are possible though our university by applying certain modern tactics in the field of education. With the above concept in mind the university will be having following mission and vision.

CIIIT – VISION, MISSION AND OBJECTIVES

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.
- Tata Technologies Ltd., is committed for the Skill Development by supporting the Academia to develop as Employable Education, under which; CIIIT Project has been established in a joint initiative by TATA Technologies Led industry consortium & Government of Maharashtra.

The objective of this project is to establish "Center for Invention, Innovation, Incubation & Training (CIIIT)" to facilitate Innovations & skill development for students, industry professionals who can be eventually absorbed as skilled resources in the industry and creating entrepreneurships and unemployed youth who want to upgrade their skills to latest technologies in an Industry environment that makes Industry Ready Professionals.

OBJECTIVES OF CIIIT

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

BENEFIT TO STUDENTS

CIIIT provides better opportunities for students to have hands on experience on Industry relevant software, hardware, and machines. It consist of comprehensive ecosystem to make students Industry Ready by working on industry relevant case studies, project work and best practices under the guidance of Industry Experts.

It helps students to explore career opportunities in various industries such as Automotive, Aerospace, Industrial Automation, Consumer goods, Construction equipment, Electrical & Electronics, Healthcare, Locomotive, Machine tools, Manufacturing, Metals & Mining, Renewable energy, Oil & Gas, Paper & Packaging, Pharmaceutical, Textile etc.

Students will be able to explore career opportunities in various industries as Design Engineer, CAE Engineer, PLM Engineer, Automotive Engineer, CAD/CAM Engineer, IOT Engineer, MES Engineer, Industrial Robotics and Digital Manufacturing Engineer, EV Engineer, Product Design Assistant, CAD Technician, EV Mechanic, Automobile Mechanic, Additive Manufacturing Technician, Robot assistant Operator, Robot Programmer, Welder, Painter, CNC Operator, CNC Assistant Programmer, FEA Modeler, IOT Technician, Industrial Automation Technician, Computer Aided Manufacturing (CAM) Technician, Apart from above, the Design Thinking and Innovation course learning encourages students to starts their own start ups and become entrepreneur.

COMPETENCY CENTER DEVELOPMENT UNDER CIIIT

It consists of 9 competency centers as given below:

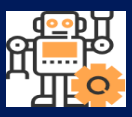
Innovation Design and Incubation Centre

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

INNOVATION DESIGN AND INCUBATION (IDI)

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 3D Experience) 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.

Key Enablers:

- High End Industrial Workstations
- 3D Experience Software
- Design Thinking & Innovation Process
- Product Design and Development Process
- Regulations
- Industrial Best Practices

Job Roles:

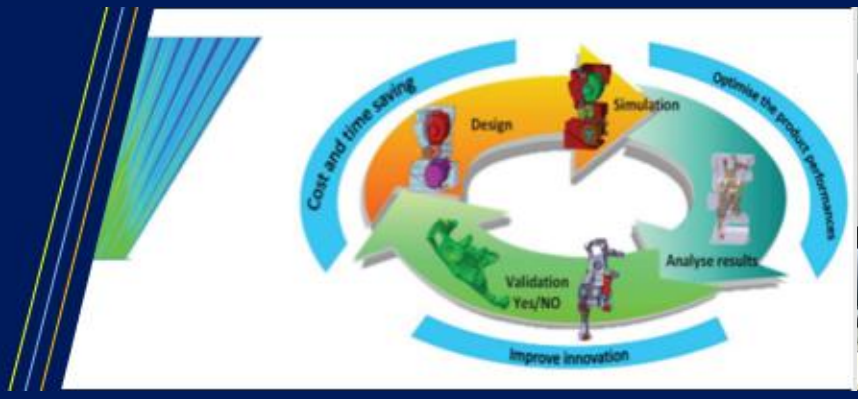
- Design Engineer, Product Engineer, CAD Engineer, CAD Executive, CAD Operator.

Career Opportunities:

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

PRODUCT VERIFICATION ANALYSIS (PVA)

This Center facilitates experiential learning pertaining to product validation. Product Verification Analysis Center provides an industry environment with the latest technology tools used by major industries for 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 3D Experience, Ansys, FEAST etc) are used by leading manufacturers for linear and nonlinear finite element analysis (FEA), optimization, fatigue and durability etc..



Key Enablers:

High End Industrial Workstations
ANSYS Mechanical Premium,
Ansys CFD Premium
Ansys Electronics Enterprise
Ansys Learning Hub
FEAST

Job Roles:

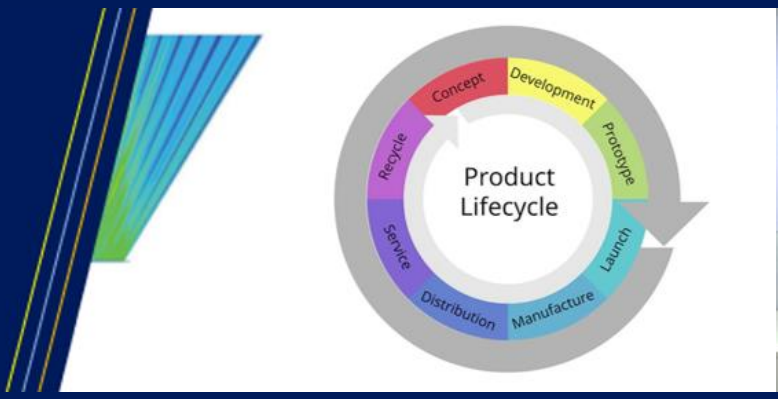
CAE Engineer, Stress Engineer, CAE Assistant Engineer, CAE Support Executive.

Career Opportunities:

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

PRODUCT LIFECYCLE MANAGEMENT (PLM)

This Center facilitates experiential learning pertaining to Product Lifecycle Management (PLM). Product lifecycle Management (PLM) is the process of managing the entire lifecycle of a product from inception, through engineering design and manufacture. Product life cycle management is the integration of all aspects of a product, taking it from conception through the product life cycle to the disposal of the product and components. 3D Experience is a Product Design and Lifecycle Management (PLM) software product. 3D Experience user base ranges from individuals to large corporations' area like Aerospace & Defense, Automotive, Electronics & High-Tech, Industrial Products, Medical Devices, Retail, Footwear & Apparel.



Key Enablers:

High End Industrial Workstations
3D Experience
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.

AUTONOMOUS CONNECTED ELECTRIFIED (ACE)

This center is a specialized center which enable students to develop skills in electric vehicle Autonomous connected cars technology. Electric vehicles hold significant potential for not only transforming how the world moves, but also for increasing energy security and reducing carbon emissions and other pollutants. Transportation accounts for about one-fifth of global energy use, and passenger vehicles account for about ten percent of energy- related carbon dioxide emissions. With the rapid rise in personal vehicle ownership around the globe, demand for fuel will continue to increase along with carbon emissions unless there is a shift in transportation. There are a variety of clean vehicle technologies and fuels in development and in use, but electric vehicles represent one of the most promising technologies for reducing oil use and cutting emissions. This market is still developing, however, and there are many challenges, particularly with technology integration, optimization, and scale-up.

Key Enablers:

High End Industrial Workstations, 3D Experience, Dymola
Full EV Chassis with all working systems and EV Components and Tools
Electric Charger, IOT controller, IOT Sensors, Actuators etc.
Internet of Things (IOT) Applications
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.

VALUE ENGINEERING AND BENCHMARKING

This Center facilitates experiential learning pertaining to various systems and sub-systems. This competency center consist of different machinery that will enable teardown and benchmarking. The Value Engineering and Benchmarking Center consists of Powertrain, Chassis System, Body Engineering, Electrical & Electronic System and Integrated Vehicle Assemblies. While executing any task, better understandings of physical system and its complexity will help deliver the required results effectively. Exploring the domain is nothing but understanding of why and how things works, which improves the depth of knowledge. This enables students to make a solid foundation in engineering application by working on real life assemblies and components. Benchmarking centre is facility for conducting benchmark studies, study cost effective designs, instill the principles of Value Engineering, frugal design in students. The lab will consist of different machinery that will enable teardown and benchmarking.

Key Enablers:

High End Industrial Workstations, 3D Experience
High End Industrial Workstations and 3D Experience
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.

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 Electrical and Electronics architecture platform on which students will be able to experiment, research and innovate on the upcoming trends.

Mechatronics is an integration of interdisciplinary technologies mainly mechanical, electronics and electrical. 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 IOT platform which is the fastest way to unlock the value of the physical-digital convergence of the IoT.

Key Enablers:

Internet of Things Hardware
Electric and Electronic components
Sensors and other accessories
IOT Applications
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.

DIGITAL MANUFACTURING (DM)

This Center facilitates in experiential learning pertaining to various manufacturing processes which are used in manufacturing industries. This center consists of Industrial Robots, Machine Tending Station, Welding Station, Deburring Station, Laser Marking Station, Stacking Station etc. This Center will help students to perform Robotic Programming for various manufacturing operations such as arc welding, material handling, etc. It also helps students to understand and select suitable method of manufacturing based on function, materials, applications, cost constraints, cycle time etc.

Today extensive automation is practiced in practically every type of manufacturing and assembly process. Some of the larger processes include electrical power generation, oil refining, plastics, cement plants, fertilizer plants, automobile and truck assembly, aircraft production, glass manufacturing, food and beverage processing, canning bottling and manufacture of various kinds of parts. Robots are especially useful in hazardous application.

Key Enablers:

Industrial Workstation
Industrial Robots, Conveyor
Arc Welding, Welding Fixture, Gripper, Machine Tending Station, Deburring Station, Laser Marking Station, Stacking Station
AVEVA Technology tools
Industrial Applications and Industrial Best Practices

Job Roles:

Industrial Robot Engineer, Robot Specialist, Robotic Operator, Robotics Assistant Engineer.

Career Opportunities:

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

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 MS Software. This will give competitive edge in placement drives and will have better employability for students in the job roles available in the market viz, Quality Engineer, Production Engineer, Process Validation Engineer.

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.

ADVANCED MANUFACTURING (AM)

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,, Laser cutting etc.
Advance manufacturing is the production of complex machines through the application of advancements in science in manufacturing processes and product design. It is the utilization of enabling technologies, incorporating design and business process innovation to deliver high value-added processes and products in ways that are novel and competitive. Advanced manufacturing covers a whole host of new industrial processes that improve upon traditional methods in quality, speed, and cost.

Key Enablers:

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

ENTREPRENEURSHIP AND RESEARCH

The disruptive technologies pertaining to Electric Vehicles, Autonomous vehicles, Industry 4.0, Mechatronics, Internet of Things, Data Analytics, Additive Manufacturing, Robotics, Automation 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.

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 adds business value.

Some of the areas include following:

Advanced Software's, package, ergonomics study, perceived quality, Detail Design

Design and development of advanced Electric Powertrain, Connected Car, Autonomous vehicles etc.

Infotainment, HMI, advanced safety systems, IOT etc

Industry 4.0, Advanced Manufacturing, Robotics, Additive Manufacturing

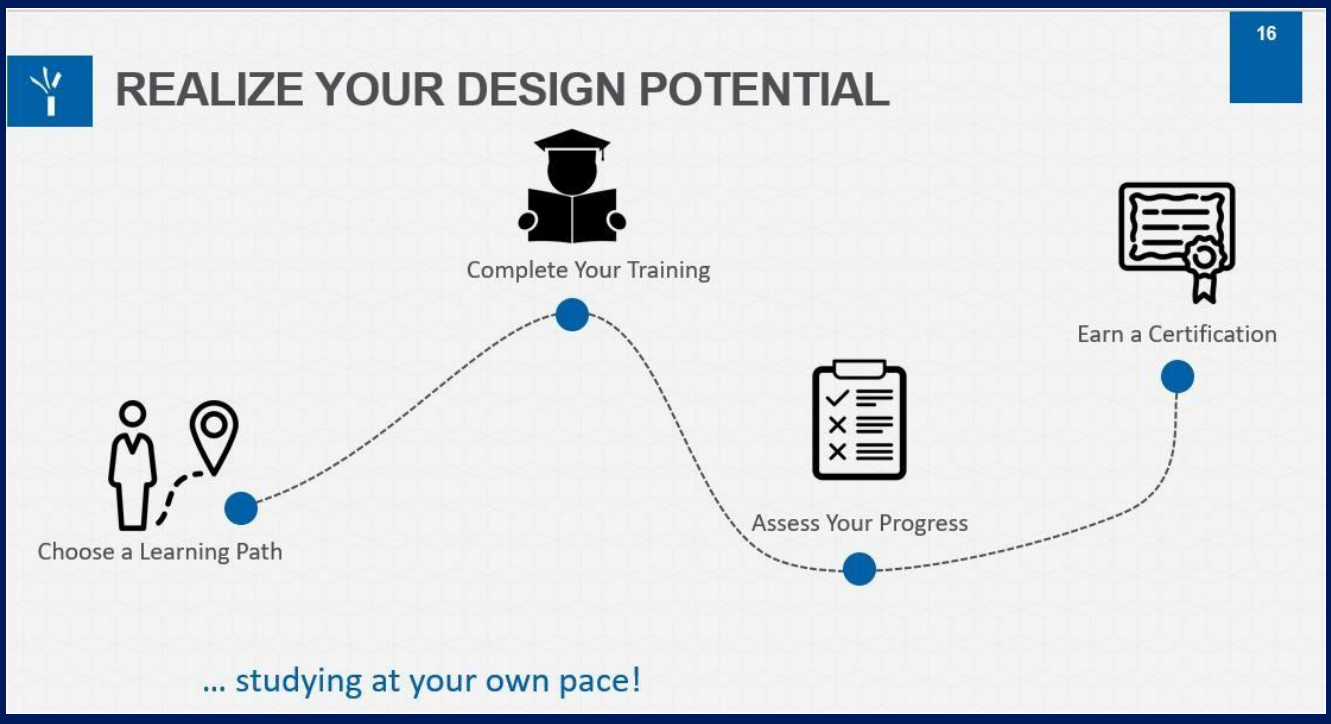
Mobility - APP based solutions

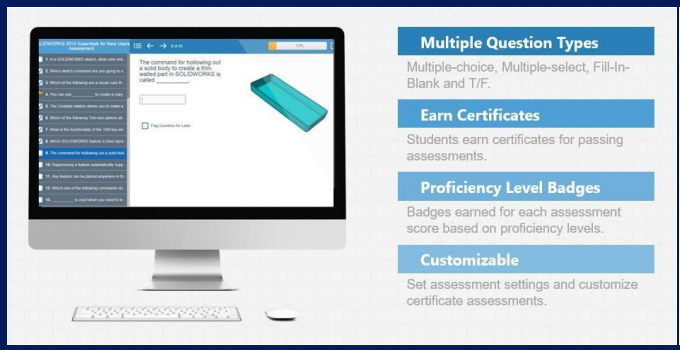
Sales & After Sales

Business Models

GET IT E-LEARNING

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.





TRAINING PLAN

S. No.	Course Name	Duration	Eligibility	No of Students per batch
Innovation Design & Incubation				
1	Design Engineering	3 months (2 Hours per day)	M.Tech / B. Tech	40
2	Product Design and Development	3 months (2 Hours per day)	Diploma	40
3	Product Design	3 months (2 Hours per day)	ITI	40
Product Verification Analysis				
4	Product Verification Analysis	3 months (2 Hours per day)	M.Tech / B. Tech	20
5	Basic Product Verification Analysis	3 months (2 Hours per day)	Diploma and ITI	20
Product Lifecycle Management				
6	PLM Application Engineering	3 months (2 Hours per day)	M.Tech / B. Tech / Diploma	20
Value Engineering & Benchmarking				
7	Automobile & Value Engineering	3 months (2 Hours per day)	M.Tech / B. Tech	30
8	Auto Maintenance & Repair	3 months (2 Hours per day)	Diploma / ITI	30
Autonomous Connected Electrified				
9	Electric Vehicle & Connected Autonomous Vehicle	3 months (2 Hours per day)	M.Tech / B. Tech	30
10	Electric Vehicle Repair	3 months (2 Hours per day)	Diploma / ITI	30
Mechatronics & IoT				
11	Mechatronics & IoT Engineering	3 months (2 Hours per day)	M.Tech / B. Tech	30
12	Home Appliance Technician	3 months (2 Hours per day)	Diploma / ITI	30
Digital Manufacturing				
13	Digital Manufacturing & Industrial Robotics	3 months (2 Hours per day)	M.Tech / B. Tech	60
14	Robot Operator	3 months (2 Hours per day)	Diploma / ITI	60
Manufacturing Execution System				
15	Manufacturing Execution System Engineering	3 months (2 Hours per day)	M.Tech / B. Tech	30
16	Manufacturing Execution System Operator	3 months (2 Hours per day)	Diploma / ITI	30
Advance Manufacturing				
17	Advance Manufacturing Engineering	3 months (2 Hours per day)	M.Tech / B. Tech	40
18	Machine Operator (CNC / 3D Printer / Laser Cutting)	3 months (2 Hours per day)	Diploma / ITI	40

COURSES ELIGIBILITY CRITERIA

S No.	Admission Type	Condition*	Admission Criteria*	Course Fee (each Course, in Rs.)*
1	Student Minimum Pursuing B.E./B.Tech. 3rd / 4th year in engineering & technology	Students must submit College Bonafide Letter from their respective college for enrolments, then only admission will be done under Student Admission Criteria.	Student Admission Criteria	
2	Students Minimum Pursuing Diploma / ITI in respective branch	Students must submit College Bonafide Letter from their respective college for enrolments, then only admission will be done under Student Admission Criteria.	Student Admission Criteria	
3	Minimum Degree/Diploma / ITI Passed in engineering & technology	Need to submit last Passing education certificate.	Open Admission Criteria	
4	Industry Sponsor	Letter from respective Organisation	Industry Engagement	

CIIIT CONTACTS

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

E-MAIL ID:	**E-MAIL ID:**