RCOEM
Shri Ramdeobaba College of Engineering and Management, Nagpur

RCOEM TBI Foundation
Contagiously Innovative

TATA
TATA TECHNOLOGIES

CIIIT

Shri Ramdeobaba College of Engineering and Management
Center for Invention Innovation incubation & Training
RCOEM-TATA-CIIIT, Nagpur

Annexure-A

Sr. No	Name of Certificate Course	Batch Size	Duration	Eligibility	Fees for Students	Fees for Industry Professionals
1	3-D Scanning & Reverse Engineering	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 2,500	Rs. 5,000
2	3-D Printing & Additive Manufacturing	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 2,500	Rs. 5,000
3	CNC Programming & VMC Operations	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 2,500	Rs. 5,000
4	Industrial Robot operator (Yaskawa Arc welding)	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 2,500	Rs. 5,000
5	Solid modeling Catia V6	15	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 2,500	Rs. 5,000
6	Mechatronics & Internet of Things (IoT) Engineering	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 2,500	Rs. 5,000
7	Manufacturing Execution System Engineering / operator	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 3,000	Rs. 6,000
8	Finite Element Analysis (MSC Nastran)	10	1 Month	ITI/Diploma/BE/ME or Pursuing similar technical course	Rs. 3,000	Rs. 6,000

***Diploma in Industry 4.0 will be awarded for completing min 6 of the above courses at RCOEM-TATA-CIIIT**

Sr. No	Admission Type	Admission Criteria	Condition
1	Student Admission	i) Student must be pursuing BE/B.Tech. 3rd/4th year in Engineering & Technology for related courses ii) Student must be pursuing Diploma/ITI in respective branch	Student shall produce Bonafide certificate from his/her Institution where enrolled
2	Open Admission	The candidate must possess Degree/Diploma/ITI certificate in Engineering & Technology	The candidate must submit ME-M.Tech/BE-B.Tech /Diploma/ITI completion certificate
3	Sponsor Admission	Industry sponsor candidate/Faculty sponsored from other Institutions	Letter from respective organization

RCOEM-TATA-CIIIT
Ramdeo Tekdi, Gittikhadan, Katol Road,
Nagpur - 440 013 (M.S.) (India)
http://www.rknec.edu/RCOEM-TATA-CIIT.aspx# Email: ciiit@rknec.edu
Course registration link: https://forms.gle/4k7bFiGFeH9vg8WD8
For Admission Contact- **7776862607 / 7498689548 / 9822277318**

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August – 2021 BATCH: 1

Sr. No.	Name of the course	Intake	CIIIT Course Code
1	3-D Scanning & Reverse Engineering	10	CIIIT-01
2	3-D Printing & Additive Manufacturing	10	CIIIT-02
3	CNC Programming & VMC Operations	10	CIIIT-03
4	Industrial Robot operator (Yaskawa Arc welding)	10	CIIIT-04
5	Solid modeling Catia V6	15	CIIIT-05
6	Mechatronics & Internet of Things (IoT) Engineering	10	CIIIT-06
7	Manufacturing Execution System Engineering/operator*	10	CIIIT-07
8	Finite Element Analysis (MSC Nastran) *	10	CIIIT-08

Fees structure for courses 1 to 6:
Engineering Students: - INR 2500/ INR 3000*
Working professionals: - INR 5000/ INR 6000*
Each Course Duration
1 Month – (2 Hours per Day- Mon to Fri)

ADVANCED COURSES OFFERED at RCOEM-TATA-CIIIT

Diploma Courses (6+ months)	Certificate Courses (upto 3 months)
• **Product Design and Validation** Design Thinking for Start Ups, Catia V6 and PLM, Virtual Verification and Analysis, Product Design and Development • **Integrated Advanced Manufacturing** Additive Manufacturing, Digital Manufacturing, Industrial Robotics, Advanced Manufacturing • **Manufacturing Execution System & IoT** Design Thinking, Manufacturing Execution System, Industrial Robotics, IoT • **Advanced Product Design Engineering & Manufacturing** Design Thinking for Start Ups, Catia V6 and PLM, Virtual Verification and Analysis, Product Design and Development, Additive Manufacturing, Digital Manufacturing, Industrial Robotics, Advanced Manufacturing, Manufacturing Execution System, IoT	• Catia V6 and PLM • Virtual Verification and Analysis • Product Design and Development • Additive Manufacturing • Digital Manufacturing • Industrial Robotics • Advanced Manufacturing • Manufacturing Execution System • Internet of Things (IOT)

Contact:
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Email ID: ciiit@rknec.edu

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COURSE CONTENTS

CIIIT-01: 3-D Scanning & Reverse Engineering
- Introduction to Reverse Engineering
- Geometry Acquisition Hardware & Software
- 3D Scanner and Data Processing
- Inspection Software
- Hands-on on Reverse Engineering Software
- live Scan technology **EinScan- 3D Scanner**
- real-time data capture with 3D scanner
- Scanning / Inspection software. **EinScan- 3D**
- 3D Scanning (Laser and White / Blue Light)
- Scanned Data to 3D Model, clean up tools
- Convert raw 3D scan data into high quality models
- 3D Inspection & Drag and drop Report generation

CIIIT-02: 3-D Printing & Additive Manufacturing
- Intro to Product Design Development
- Introduction to 3D Printing Technology
- Geometric/solid modeling
- Facet generation and File types Obj, Stl, Prt etc
- Slicing softwares, Cura
- Part orientations and Slicing considerations
- Slicing parameter settings
- 3-D Printing materials PLA, ABS, TPU, Wood,
- 3-D Printing Tolerances
- G code files and FDM 3-D printing
- Ultimaker FFF-3-D printing
- Post processing

CIIIT-03: CNC Programming & VMC Operations
- Introduction to Various Manufacturing Processes
- Introduction to Advance Manufacturing Processes
- CNC Programming and Milling operations
- CNC Programming and Turning operations
- G-Codes & M-Codes for Milling & Turning
- CNC Programming for Drilling operations
- Fanuc Interface and operating panel
- ATC operations & Work-offset
- Operating facemill & endmill cutters
- Subprogram and canned cycle
- Manufacturing simulation

CIIIT-04: Industrial Robot operator (Yaskawa Arc welding)
- Basics of Industrial Robotics
- Various application in industries
- Safety for Robot
- Product Description and Specifications: ROBOTS
- Robot Transport and Installation
- Operation of ROBOT: ROBOT Programming
- Basic & logical command used in program
- Robot practical Welding program
- Maintenance of Robots in Industry

CIIIT-05: Solid modeling Catia V6
- Innovation and Design Thinking
- Concept Generation
- Introduction to Design Tools - CAD (CATIA v6)
- Concept Creation and 3D Modelling
- Detail Design & Engineering
- Introduction to GUI & Getting Started with CATIA
- Sketcher Workbench Pad, Shaft, pocket & RP
- Drawing Shapes, Modifying sketch and constraints
- Part Design Workbench Practice example
- Sketch based and dress-up features, Holes & Fillet
- Transformation features, Practice example
- Design for Assembly and Design for Manufacturing

CIIIT-06: Mechatronics & Internet of Things (IoT) Engineering
- Fundamentals of Electronics and Mechatronics
- Basics of Electronics and Components
- Communication Protocols
- Various Micro Processors, Controllers
- Introduction to various Sensors
- IoT Application Arduino IDE
- IoT Applications to fields and implementation
- Cloud Concepts – Firebase
- Introduction Raspberry Pi Hardware Integration

CIIIT-07: Manufacturing Execution System Engineering/operator
- Introduction to MES, Objective MES, Benefits
- Discrete, Continuous & Batch Manufacturing
- Manufacturing Organization Structure
- MES functionality, Integration of Business Layer
- Integration of Shop floor system
- MES Components and Systems Introduction
- Automation & Process Control, Automation Purpose
- Basics of Control System PLC and HMI for MES
- PLC types, applications & programming
- SCADA Softwares and Design, HMI
- Sensors and Actuators - Limit Switch, Prox. Sensor
- Integration of PLC, Conveyor Belt, Sensors.
- Pick to Light System - Overview and Working
- MES Software and Core Functionalities

CIIIT-08: Finite Element Analysis (MSC Nastran)
- Basics of Strength of Material
- Introduction to Geometric Model & FE Model
- Introduction to Finite Element Analysis (FEA)
- Introduction to MSC NASTRAN and PATRAN
- Linear static structural analysis
- Modal Analysis (Free-Free Run)
- Buckling Analysis
- Non-Linear Static Analysis
- Material Geometry and Contact Non-Linearity

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ADMISSION PROCEDURE

The Fee structure will be applicable as provided in Table provided on previous page.

The tentative start date of Physical classroom sessions will be in the first week of August 2021.

Applicants need to pay only INR 1000/-at the time of Registration.

Rest of the fees can be paid within one week from the commencement of the course.

After successful completion of a course Certificate/Diploma will be awarded jointly by RCEOM & TATA Technologies Ltd.

PAYMENTS LINK FOR REGISTRATION:
Google Form Link for Admission:

https://forms.gle/4k7bFiGFeH9vg8WD8

(Attach the Payment receipt (INR 1000/-) at the time of google Form submission)

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