

# Emerging Technologies Skill Oriented Training under TEERTH Scheme

## 10 Day's Professional Certificate Programme on

### STEAM Based Training for the Skill Enhancement

3rd to 7th January 2023

9th to 13th January 2023



Knowledge Consortium of Gujarat  
(KCG), Government of Gujarat

# ISTEM

Collective Foundation

ISTEM Collective Foundation  
Ahmedabad, Gujarat



Nirma University  
Ahmedabad, Gujarat

# About Knowledge Consortium of Gujarat (KCG) & TEERTH Scheme



KCG which was established by the Department of Higher Education was in response to creating a gateway to the future where human relations will merge to create the harmonizing threads of knowledge. Knowledge is today the dynamic watchword and progress in academics and learning by progress is measured in terms of progress in academics and learning by too early. KCG has eloquently translated its commutations to excellence in education through innovatioand collaboration with other institutions of innovation, Cooperation, and collaboration with other institutions of academic excellence.

Under the Knowledge Enhancement and Learning Development track of TEERTH (Training for Excellence, Efficiency and Research Towards Higher education) Yojana of Knowledge Consortium of Gujarat redefines faculties and individuals' approach in teaching - learning and to expand their knowledge and creative vision. This training focuses to increase individuals subject understanding, creative and strategic thinking, innovative exploration and knowledge advancement in the particular subject. This training helps them to understand the complexity of subject them to understand the complexity of subject thoroughly and also increases individual's intelligence capacity for a subject in a short amount of time. Knowledge enhancement and learning development track of KCG TEERTH yojana deals with individual teaching-learning system and help them to refine their core competencies.



## About Nirma University



The Nirma Education and Research Foundation (NERF), established in 1994, is the trust which has promoted the Nirma University, with a vision to assist higher education and provide excellent educational facilities to the younger generation of India. The university is a research-oriented, student-centric, multidisciplinary, not-for-profit state private university with a lush-green campus strategically located in the city. Institute of Technology, Nirma University was established in the year 1995 by the Nirma Education and Research Foundation (NERF). In the year 2003, the Government of Gujarat approved the proposal of the NERF to found the Nirma University, Ahmedabad. The Institute is the first self-financed engineering college of the State of Gujarat and also NAAC 'A+' grade accredited in 2022 which endorses the quality standards followed in every aspect of education delivery. Also ranked at the 125th position by the National Institute Ranking Framework (NIRF), the institute makes its mark among 4000 plus engineering colleges in the country. The top ranking agencies consistently place the Institute at the top in the state and in the top 15 in the country amongst self-financed colleges. All the BTech Programmes are accredited by the National Board of Accreditation (NBA) under Tier-I category. The Institute offers multidisciplinary undergraduate, postgraduate and doctoral programmes in Engineering and Technology. It has been consistently ranked amongst the top self-financed engineering colleges

## About ISTEM Collective Foundation

We are working in the field of STEM, Robotics, Skill Development, Education, Training and Employment pan India. Currently we are associated with 30+ STEM Equipment providers, 1000+ schools, 500+ colleges, 7+ incubation centres. We have developed a unique training and certification program for these fields. This training & certification program will help existing teachers and new generation students to become master trainers in Robotics and STEM Education. We will give them certificate after completion of training.

# About the Professional Certificate Programme

This programme is jointly organized by ISTEM Collective Foundation and GTU in Collaboration With KCG. Fully funded by KCG. This Professional Certificate Programme will enhance the knowledge and skills of the stakeholders in the domain of Electronics, coding, Mechanical Engineering, 3D printing, Prototyping, Gears, Structures and automobiles. This programme will impart theoretical, practical and hands-on Experience enabling the participants to the field of Robot Designing, Application development, Drone Designing.

This training program includes 60 Hours of teaching and hands on robotics and STEM education. This program covers various aspects like Electronics, coding, Mechanical Engineering, 3D printing, Prototyping, Gears, Structures and automobile. This will develop and enhance their skills in this new gen technologies. Master trainers will train candidates on the Unique coding platform STEMBOTIX.

## Features

- It will help participants to understand Electronics, Robotics, Maths, Drone, 3D Printing.
- It will empower the participants to polish on their skills in this interdisciplinary area.
- The program will benefit the participants to understand STEM (science, technology, engineering, and mathematics) subjects
- Furnish easy and accessible tools to apply the STEM Education to revolutionize your current teaching strategy.
- Workshop material (All original PPTs, Readymade Test Dataset, E-Books, and other supporting material will be provided).
- Hard Copy Certificates will be provided to the successful participants.



## Topics to be covered

- Design Thinking
- Basics of Electronics
- 3D Printing and 3D Designing
- Algorithm and Flow Chart
- Sensor and Actuators
- Mechanical Power Tool
- Arduino & IoT Device
- Block Coding
- Drone Flying



### Note :

- The number of participants has been restricted to 40 only on a first-come-first-serve basis.
- The course will be conducted in offline mode and for the successful completion of the programme it is mandatory to attend all the sessions.
- Participants are required to make their own boarding and lodging arrangements.



For any queries & clarifications please do not hesitate to shoot us a mail on **[Osd-teerth@gujgov.edu.in](mailto:Osd-teerth@gujgov.edu.in)**



You may also direct contact to officer on special duty at KCG  
**Dr. Yogesh Yadav. ([Osd-teerth@gujgov.edu.in](mailto:Osd-teerth@gujgov.edu.in))**



# Course schedule

## Day-1

(inauguration and 3D Printing, 3D Pen)

9:00 AM to 9:30 AM

Refreshment

9:30 AM to 11:00 AM

Registration

11:15 AM to 12:30 PM

inauguration

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

3D Printing

3 PM to 4:30 PM

3D designing using 3D pen

## Day-2

(Blockzie Software)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Introduction of Blockzie

11:00 AM to 12:30 PM

Game Designing

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Story with Motion

3 PM to 4:30 PM

Video Sensing Project

## Day-3

(MIT App)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Introduction of MIT App

11:00 AM to 12:30 PM

Agriculture equipment Control

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Home Automation app

3 PM to 4:30 PM

Advance Feture of MAI

## Day-4

(Basic of Electronic)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Basic of Electronic virtual

11:00 AM to 12:30 PM

Paper circuit Designing

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Real Practical of Electronics

3 PM to 4:30 PM

Decoding With Display



# Course schedule

## Day-5

(Arduino Kit)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Introduction of Arduino & IDE

11:00 AM to 12:30 PM

Basic of Arduino Project

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Real World of Arduino

3 PM to 4:30 PM

Project Designing

## Day-6

(IoT Kit)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Magic Of IOT

11:00 AM to 12:30 PM

Intoduction of NodeMcu

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Advance Agriculture Automation

3 PM to 4:30 PM

GPS Based Project

## Day-7

(Python)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Play with Python

11:00 AM to 12:30 PM

Fundamental Concept of Python

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Face Detection

3 PM to 4:30 PM

Game Designing using Python

## Day-8

(Mechanical Kit)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Design a Humonoied Robot

11:00 AM to 12:30 PM

Build your own robot

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Design a RC car

3 PM to 4:30 PM

Build your Own Robotics car



# Course schedule

## Day-9

(Drone)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Theoretical Concept of Drone

11:00 AM to 12:30 PM

How to Design a Drone

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Fly Drone with Drone Programming

3 PM to 4:30 PM

Drone Flying Practice

## Day-10

(Certification Distribution and Competition)

9:00 AM to 9:30 AM

Welcome Tea

9:30 AM to 11:00 AM

Design Block Coding based Project

11:00 AM to 12:30 PM

Arduino and IoT Based Concept Project

12:30 PM to 1:30 PM

Lunch Break

1:30 PM to 3 PM

Drone Real Race

3 PM to 4:30 PM

Project Exhibition & Validatory Function





# Organising Committee

## Dr. Rajesh N Patel

Director, Institute of Technology,  
Nirma University  
Ahmedabad, Gujarat

## Shri M. Nagarajan, IAS

Commissioner of Higher Education  
Gujarat State  
&  
C.E.O  
Knowledge Consortium of Gujarat

## Dr. Yogesh Yadav

Officer on Special Duty (TEERTH),  
Knowledge Consortium of  
Gujarat (KCG),  
Ahmedabad, Gujarat

## Mayuri Vasava

Manager  
Istem Collective Foundation  
Ahmedabad Gujarat



Nirma University, Ahmedabad, India.