Government of West Bengal
Department of Science & Technology and Biotechnology (DSTBT)
Vigyan Chetana Bhavan, Block-DD, Plot-26/B,
Sector-I Salt Lake, Kolkata-700064

Application Format for Science Popularization Programme

1. Programme Type (ref SN 11 of the Memorandum): Workshop

2. Title of the proposed Programme: A Workshop on IoT-Based Automation and Control for Intelligent Homes and Healthcare

3. Target Group (Faculty, Teacher, Research Scholar, School/College/ University Student, Community): Faculty, PG and UG students, Research scholars, Industry professionals working in IoT, smart homes, and healthcare technology, Healthcare and smart-home solution developers

4. Duration (days): 03; Tentative Dates of the proposed Programme: 02-04 February, 2026

5. Aims, Objectives and Details of the Programme (attach separate sheet, if necessary): *Details Attached*

6. Name, Designation, Postal Address, mobile no. and e-mail id of the (only one) Programme Co-ordinator (PC) (attach separate sheet, if necessary): Dr. Ratna Mandal, Assistant Professor, Department of Information Technology, Techno International New Town.

7. Legal status of the Institute (School/College/ University/ Institute/ Polytechnic/ ITI/ Autonomous body/ registered NGO/ Trust etc.): College

8. Date wise detail Programme Schedule (attach separate sheet, if necessary): *Details Attached*

9. Collaborating Institutions/ Organizations, if any, with their specific contribution: National Institute of Technology, Durgapur

10. Expected number of participants and list of Resource Persons/ Invited Speakers: 60

11. Give details of the grant received from DSTBT in last three Financial Years, if any alongwith the date of submission of UC, Audited SoE, Report etc.: NA

12. Name and address of the authority to whom the allotted amount is to be credited (if sanctioned) who will also be responsible for submitting the UC, audited SoE, Programme Completion Report, Feedback, Still and Video photographs etc. of the grant:
Dr. Ratna Mandal, Assistant Professor, Techno International New Town, Kolkata, West Bengal

13. Total Estimated Expenditure (**A**)/ Organisation's contribution (**B**)/ Contribution from any other sources (**C**) / Grant expected from DSTBT(**D**):
D : ₹1,18,000 = (**A**: ₹106,200– **B**: ₹11,800 – C: ₹ 0)
(provide detail Budget break-up as per Annexure-I and Bank details as per Annexure-II):

Check List (put tick) of attachments to be submitted with the application

- Proposed Total Budget with break-up (Annexure-I) and Bank Details (Annexure-II) in Institute/ Organization's letter head: **YES**
- For registered NGO/ Trust, filled in Application Format recommended by the appropriate Recommending Authority, viz., Jt.BDO/ BDO/ SDO/ DM/ Executive Officer- Municipality/ Commissioner-Municipal Corporation as the case may be (where the programme is actually going to be held): **NO**
- For registered NGO/ Trust, attested copies of the registration certificate, latest renewal certificate, Memorandum and Rules & Regulations of the Organization, last three years Audited Statement of Accounts, Annual Reports etc., List of recommended beneficiaries: **NO**

TECHNO INTERNATIONAL NEW TOWN
(Formerly known as Techno India College of Technology)
Block - DG 1/1, Action Area 1, New Town, Kolkata - 700156, West Bengal, India
Contact: +91-33-2324-2050/2090/2091 • https://tint.edu.in • info@tint.edu.in

DECLARATION

Certified that the details furnished in the filled-in format are correct to the best of our knowledge & belief and that the amount of financial assistance, if sanctioned, will be utilized for the purpose for which it is granted within the time as prescribed by DSTBT. We also undertake to abide by the General Guidelines and Terms & Conditions prescribed by DSTBT and provide due coverage to DSTBT during the Programme and publications / print and electronic media made from the Programme in future. We also declare that within one month after completion of the Programme we shall submit the Utilisation Certificate (UC), Audited Statement of Expenditure (Audited-SoE), Programme Completion Report, Feedback from the Participants, still and video photographs etc.

Dr. Ayan Chakraborty
Principal
Techno International New Town
Block DG-1/1, Action Area-1,
New Town, Kolkata-700156

Signature:
Date: 15.12.2025
Name of Program Coordinator:
Dr. Ratna Mandal
Designation: Assistant Professor, Department of Information Technology
Address:
Techno International New Town
Block - DG 1/1, Action Area 1
New Town, Kolkata - 700156

Signature:
Date: 15.12.2025
Name of Head of the Institution:
Prof. (Dr.) Ayan Chakraborty
Designation: Principal, Techno International New Town
Address:
Techno International New Town
Block - DG 1/1, Action Area 1
New Town, Kolkata - 700156

(Office Seal)

TECHNO INTERNATIONAL NEW TOWN
(Formerly known as Techno India College of Technology)
Block - DG 1/1, Action Area 1, New Town, Kolkata - 700156, West Bengal, India
Contact: +91-33-2324-2050/2090/2091 • https://tint.edu.in • info@tint.edu.in

Annexure-I

Proposed Total Budget with break-ups

A. Total Estimated Expenditure

Sl. No.	Items required with justification and rate	Total Expenditure (A) (₹)
1.	Honorarium to Resource Persons/ Experts	50000
2.	Study materials, Consumables expenses	12000
3.	Hall rent, if any	NA
4.	Publicity materials	5000
5.	Travel expenses	2000
6.	T.A. to the external Resource Persons/ Experts	12000
7.	Documentation expenses including audio-visual	4000
8.	Light refreshments	27000
9.	Auditors' fee	1000
10.	Other expenses (Felicitation kit to speakers, Hall decorations, Printing materials like id cards, certificates etc.)	5000
	Grand Total Expenditure (₹):	1,18,000

Please mention:

B. Institution/ Organization Contribution* in ₹11,800

C. Contribution from any other sources (with name & Address) in ₹0

Dr. Ayan Chakraborty
Principal
Techno International New Town
Block DG-1/1, Action Area-1,
New Town, Kolkata-700156

D. Grant expected from DSTBT (₹) = (A-B-C) 1,06,200

Signature of Authorised Personnel with seal

If C= 0
Undertaking: This organization/ institution is not receiving any kind of financial assistance from any other sources

Dr. Ayan Chakraborty
Principal
Techno International New Town
Block DG-1/1, Action Area-1,
New Town, Kolkata-700156

Signature of Authorised Personnel with seal

*At least 10% of the total budget contribution from the Institute/ Organization is desirable

Annexure-II

Bank details of the Applicant Organisation

Name of the Organization	TECHNO INTERNATIONAL NEW TOWN
Bank Account number & name of the Account holder/ Organization	925010035285497 TECHNO INTERNATIONAL NEW TOWN-BUSINESS INCUBATION CELL
Type of Account (Savings or Current A/c)	SAVINGS AC TRUST TYPE
Name of the Bank	AXIS BANK
Name of the Branch with Branch address	SEC-1, SALT LAKE, KOL-64
IFSC of the Branch	UTIB0005020
Mobile Number of the Programme Coordinator/ Head of the Organization	89007 17781
PAN / TAN of the Account holder/ Organization	AAATT8588J

Signature of Authorised Personnel with seal

Dr. Ayan Chakraborty
Principal
Techno International New Town
Block DG-1/1, Action Area-1
New Town, Kolkata-700156

A workshop on

IoT-Based Automation and Control for Intelligent Homes and Healthcare

Aims:

To equip participants with the knowledge and skills required to design, implement, and evaluate IoT-based automation systems for smart homes and healthcare applications, focusing on practical implementation, security, and real-world applicability

Objectives:

1. Introduce the fundamentals of IoT, sensors, actuators, communication protocols, and automation systems.
2. Enable participants to develop and implement hands-on prototypes for intelligent home and healthcare applications.
3. Analyze real-world case studies to understand the challenges, solutions, and impact of IoT automation in homes and healthcare.

Details:

Workshop Description

The workshop will span **3 days**, each consisting of **two lectures, one hands-on session, and one case study**. Participants will gain both **conceptual knowledge and practical experience** in implementing IoT systems for real-world scenarios.

Day-wise Structure

Day 1: IoT in Smart Automation- Lecture 1: Introduction to IoT and Automation Systems - Lecture 2: Communication Protocols & Platforms - Hands-on: IoT Hardware Setup & Sensor Interfacing - Case Study: Smart Applications

Day 2: Intelligent Home Automation - Lecture 3: Smart Home Architecture & Control - Lecture 4: Security & Privacy in Home Automation using Blockchain - Hands-on: Smart Home Automation Prototype - Case Study: Energy-Efficient Smart Home

Day 3: IoT for Healthcare & Integration - Lecture 5: IoT in Healthcare - Lecture 6: Healthcare Data Management & Compliance - Hands-on: Healthcare Monitoring System - Case Study: Remote Patient Monitoring System

Key Takeaways for Participants:

Participants will be able to,

- Design and implement IoT-based automation systems.
- Develop hands-on smart home and healthcare prototypes.
- Gain knowledge in secure data communication, cloud integration, and real-time monitoring.
- Analyze real-world case studies to understand practical deployment challenges and solutions.

List of Resource Persons / Invited Speakers:

1. Prof. Subrata Nandi, NIT Durgapur
2. Prof. Debashis De, Maulana Abul Kalam Azad University of Technology
3. Dr. Sujoy Saha, National Institute of Technology, Durgapur
4. Prof. Sunirmal Khatua, University of Calcutta
5. Prof. Atal Chowdhury, Sister Nivedita University
6. Prof. Anupam Basu, Jadavpur University, Former Director, NIT Durgapur
7. Mr. Rajib Hui, Siemens

Detail Programme Schedule:

Day	Session Type	Title	Duration	Key Focus / Topics	Learning Outcome
Day 1	Lecture 1	IoT and Automation Systems: Current Landscape	1.5 hrs	Evolution of automation and IoT, Core components: sensors, actuators, gateways, IoT architecture layers, Role of IoT in smart automation and Industry 5.0	Understand the role of IoT in automation system
Day 1	Lecture 2	IoT Communication Protocols & Platforms	1.5 hrs	IoT communication protocols: MQTT, HTTP, CoAP, Wireless technologies: Wi-Fi, BLE, LoRa, Overview of IoT platforms (cloud & edge)	Understand the communication protocol
Day 1	Hands on	IoT Hardware Setup & Sensor Interfacing	45 mins	Microcontroller setup (Arduino / ESP32), Interfacing basic sensors (temperature, motion), Live data visualization	Knowledge gain for IoT hardware setup

Day 2	Lecture 3	Smart Home Architecture & Control Systems	1.5 hrs	Smart home system components, Centralized vs distributed control	Understand intelligent home automation design
Day 2	Lecture 4	Security & Privacy in Home Automation using Blockchain	1.5 hrs	Security threats in IoT-based homes, Data integrity and access control, Blockchain fundamentals for IoT security	Understand the challenges in security
Day 2	Hands on	Smart Home Automation Prototype	45 mins	Device control using IoT platform, Automation rules and scheduling	Understand the development smart home prototype
Day 3	Lecture 5	IoT in Healthcare System	1.5 hrs	Overview of smart healthcare, Wearable devices and medical sensors, Remote patient monitoring architecture	Understand the role of IoT in smart healthcare
Day 3	Lecture 6	Healthcare Data Management & Compliance	1.5 hrs	Medical data acquisition and storage, Data privacy and compliance (HIPAA overview), Interoperability and data standards	Understand the Medical data acquisition process, its challenges and benchmarking
Day 3	Hands on	IoT-Based Healthcare Monitoring System	45 mins	Vital sign monitoring demo, Real-time data transmission and alerts	