

**Government of West Bengal**  
**Department of Science & Technology and Biotechnology (DSTBT)**  
**VigyanChetanaBhavan, 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):  
...Seminar/Symposium/Conference/Workshop etc. organised by Colleges.....
2. Title of the proposed Programme: ...Two-Day Seminar and Workshop on Designing Intelligent Systems: Sensor Fabrication, Front-End Electronics, ML, 3D Prototyping in Robotics and AI-Driven Products .....
3. Target Group (Faculty, Teacher, Research Scholar, School/College/ University Student, Community): ..... Faculty members and UG students.....
4. Duration (days): .2.; Tentative Dates of the proposed Programme: ..20<sup>th</sup> and 21<sup>st</sup> March 2026..
5. Aims, Objectives and Details of the Programme (attach separate sheet, if necessary): .....

The proposed two-day seminar and hands-on workshop aims to provide a comprehensive, end-to-end exposure to intelligent system development, guiding participants through the complete product realization pipeline from sensing and hardware design to intelligence, prototyping, and deployment.

- Primary Objectives
  - Introduction to Sensor Technologies  
To familiarize participants with modern sensor technologies, including operating principles, selection criteria, design considerations, and an overview of basic sensor fabrication techniques used in contemporary research and industry.
  - Front-End Electronics and Signal Conditioning  
To provide practical knowledge of analog and mixed-signal front-end electronics, covering signal conditioning, amplification, filtering, noise mitigation, and sensor interfacing. Special emphasis will be placed on industry-standard design methodologies and EDA tools used in professional environments.
  - Integration of Intelligence using AI and Machine Learning  
To bridge hardware and intelligence by explaining how raw sensor data is acquired, processed, and transformed into actionable insights using Machine Learning (ML) and Artificial Intelligence (AI) techniques. Participants will gain exposure to data preprocessing, feature extraction, model selection, and deployment strategies.
  - Real-World Product Development Workflow  
To demonstrate a structured product development lifecycle, starting from problem identification and concept formulation, followed by system architecture design, hardware-software co-design, and validation of a functional prototype.
  - Modern Product Design and Prototyping Tools  
To expose participants to contemporary product design practices, including CAD modeling, mechanical-electronic integration, and rapid prototyping techniques used in start-ups and R&D laboratories.

- Practical Understanding of 3D Printing and Enclosure Design  
To enable hands-on understanding of 3D printing technologies, material selection, enclosure design, and their role in creating robust, user-ready embedded products.
- Promotion of Interdisciplinary and Systems-Level Thinking  
To encourage interdisciplinary learning by integrating concepts from electronics, sensors, robotics, AI, embedded systems, and product engineering, thereby preparing participants for modern engineering challenges.

- Seminar Design and Flow

The seminar is strategically structured to ensure a smooth and logical transition across different stages of intelligent product development. Each technical session builds upon the previous one, enabling participants to understand how individual subsystems integrate into a complete smart product. The resource persons will be distinguished academicians and researchers from diverse yet complementary domains, including:

- Sensor design and fabrication
- Analog and mixed-signal front-end electronics using industry-grade EDA tools (e.g., Cadence)
- Machine Learning and Artificial Intelligence (two experts covering theory and applications)
- Embedded system-based product design
- 3D modeling and rapid prototyping

This multidisciplinary expertise ensures that participants gain a holistic view of intelligent system design, rather than isolated knowledge of individual components.

- Academic and Societal Impact

The invited experts are internationally renowned figures in their respective research areas. Their interaction with participants will:

Inspire undergraduate and postgraduate students toward advanced research, innovation, and higher studies

Motivate young engineers to pursue academics, entrepreneurship, and technology-driven societal solutions

Promote awareness of how intelligent systems can be applied to healthcare, sustainability, smart infrastructure, and social welfare

- Expected Outcomes

By the end of the seminar, participants will:

- ✓ Understand the complete pipeline of intelligent product development
- ✓ Gain clarity on how sensors, electronics, AI, and prototyping converge in real-world systems
- ✓ Be better prepared for research, industry roles, and innovation-oriented projects

6. Name, Designation, Postal Address, mobile no. and e-mail id of the (only one) Programme Co-ordinator (PC) (attach separate sheet, if necessary): .....

Name: Dr. Palash Das

Designation: Assistant Professor

Postal Address: Department of Electronics and Communication Engineering, Cooch Behar Government Engineering College, Harinchawra, Ghughumari, Cooch Behar 736170

Mobile no. 9937013180

E-mail id: d.palash.ece@cgec.org.in

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

Government Engineering College at West Bengal

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

### **Day 1: Sensors, Electronics, and Data Acquisition**

| <b>Time</b>   | <b>Session</b>  |
|---------------|---|
| 09:30 – 10:00 | Registration & Inauguration   |
| 10:00 – 11:00 | <b>Session 1:</b> Introduction to Sensors – Types, Characteristics, and Applications      |
| 11:00 – 11:15 | Tea Break   |
| 11:15 – 12:30 | <b>Session 2:</b> Sensor Design and Basic Fabrication Techniques                          |
| 12:30 – 01:30 | Lunch Break   |
| 01:30 – 02:45 | <b>Session 3:</b> Front-End Electronics Design – Signal Conditioning, Amplifiers, Filters |
| 02:45 – 03:00 | Break   |
| 03:00 – 04:30 | <b>Hands-On Workshop:</b> Sensor Interfacing and Front-End Circuit Prototyping            |
| 04:30 – 05:00 | Q&A and Day 1 Wrap-Up   |

### **Day 2: Intelligence, Product Design, and Prototyping**

| <b>Time</b>   | <b>Session</b>   |
|---------------|--|
| 09:30 – 10:45 | <b>Session 4:</b> Introduction to Machine Learning and AI for Sensor Data      |
| 10:45 – 11:00 | Tea Break  |
| 11:00 – 12:30 | <b>Session 5:</b> ML-Based Decision Making in Robotics and Embedded Systems    |
| 12:30 – 01:30 | Lunch Break  |
| 01:30 – 02:30 | <b>Session 6:</b> Product Design Methodology and CAD Modeling                  |
| 02:30 – 03:15 | <b>Session 7:</b> 3D Printing Technologies and Rapid Prototyping               |
| 03:15 – 03:30 | Break  |
| 03:30 – 04:30 | <b>Hands-On Workshop:</b> Product Enclosure Design & 3D Printing Demonstration |
| 04:30 – 05:00 | Valedictory Session & Certificate Distribution                                 |

9. Collaborating Institutions/ Organizations, if any, with their specific contribution:.....

Not Applicable

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

Resource persons:

- Dr. Angsuman Sarkar, Professor, Department of Electronics and Communication Engineering, Kalyani Government Engineering College
- Dr. Ankush Bag, Associate Professor, Department of Electronics and Electrical Engineering, IIT Guwahati
- Dr. Sanjay Kumar Jana, Associate Professor, Department of Electronics and Communication Engineering, NIT Sikkim
- Dr. ShovanBarma, Associate Professor & Associate Dean (AA-PG), Department of Electronics and Communication Engineering, IIIT Guwahati

- v. Dr. SubhankarMajumdar, Assistant Professor, Department of Electronics and Communication Engineering, NIT Meghalaya
- vi. Dr. AritraAcharyya, Assistant Professor, Department of Electronics and Communication Engineering, Kalyani Government Engineering College
- vii. Dr. Palash Das, Assistant Professor, Department of Electronics and Communication Engineering, Cooch Behar Government Engineering College

Expected number of participants: 70

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.: .....

One project under DSTBT was completed. The detail is given below:

PI of the project: Dr. Aritra Acharyya, Department of Electronics and Communication Engineering, Cooch Behar Government Engineering College  
G.O. No.: 1690(Sanc.)/ST/P/S&T/6G-5/2019 dated 06/02/2020  
UC submitted: Ref. No. 294/CGEC/2024 dated 22/06/2024

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. Palash Das, Assistant Professor, Department of Electronics and Communication Engineering, Cooch Behar Government Engineering College

13. Total Estimated Expenditure (**A**)/ Organisation's contribution (**B**) / Contribution from any other sources (**C**) / Grant expected from DSTBT(**D**):

**D: ₹1,30,000 = (A: ₹1,44,000 – B: ₹14,000 – 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/NO**
- 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): **YES/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: **YES/NO**

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 & Condition 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, Feedbacks from the Participants, still and video photographs etc.

Signature:

*Palash Das*

Date: 13/12/2025

Name of Programme Coordinator:

*Dr. Palash Das*

Designation: Assistant Professor

Address: Dept. of ECE, Cooch Behar  
Government Engineering College  
(Office Seal)

Signature:

*Sushovan Chatterjee*

Date: 13/12/2025

Name of Head of the Institution: Dr. Sushovan  
Chatterjee

Designation:

Officer-In-Charge

Address:

Cooch Behar  
Government Engineering  
College



RECOMMENDATION

(only for registered NGO/ Trust)

Certified that the said Organisation is reputed in this field and I/ we recommend the said proposal for getting grant-in-aid from DSTBT, Govt of West Bengal for the benefit of the local College/ University Students/ Community etc.

Signature:

Date:

Name of Recommending Authority:

Designation:

Address:

(Office Seal)



**Government of West Bengal**  
**Cooch Behar Government Engineering College**  
*Department of Electronics & Communication*  
*Engineering*

Vill- Harinchawra, P.O.-Ghughumari, Cooch Behar-  
 736170 Phone: +3582-233040/41/42/43/44;  
 Website: www.cgec.org.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        | 35,000                    |
| 2.                                  | Study materials, Consumables expenses          | 15,000                    |
| 3.                                  | Hall rent, if any                              | Institute Seminar Hall    |
| 4.                                  | Publicity materials                            | 5,000                     |
| 5.                                  | Travel expenses                                | 10,000                    |
| 6.                                  | T.A. to the external Resource Persons/ Experts | 42,000                    |
| 7.                                  | Documentation expenses including audio-visual  | 12,000                    |
| 8.                                  | Light refreshments                             | 15,000                    |
| 9.                                  | Auditors' fee                                  | 5,000                     |
| 10.                                 | Other expenses, if any (please specify)        | 5,000                     |
| <b>Grand Total Expenditure (₹):</b> |  | <b>1,44,000</b>           |

**Please mention:**

B. Institution/ Organization Contribution\* in ₹14,000

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

D. Grant expected from DSTBT (₹) = (A-B-C) ₹1,30,000

*15/12/2025*

*15/12/2025*  
**Accounts Officer**  
**Cooch Behar Govt. Engg. College**  
**Cooch Behar-736170**

If C=0

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

*[Signature]*

Signature of Authorised Personnel with seal

**Officer-In-Charge**  
**Cooch Behar Govt. Engg. College**  
**P.O. Ghughumari Dist.-Cooch Behar**  
**Pin-736170, West Bengal (India)**

Signature of Authorised Personnel with seal

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





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*Department of Electronics & Communication Engineering*  
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Phone: +3582-233040/41/42/43/44;  
Website: www.cgec.org.in

Annexure-II

**Bank details of the Applicant Organisation**

|  |  |
|--|--|
| Name of the Organization   | Cooch Behar Government Engineering College |
| Bank Account number & name of the Account holder/ Organization       | 35521973547                                |
| Type of Account (Savings or Current A/c)                             | Savings                                    |
| Name of the Bank   | State Bank of India                        |
| Name of the Branch with Branch address                               | Sagardighi Square, Cooch Behar             |
| IFSC of the Branch   | SBIN0000058                                |
| Mobile Number of the Programme Coordinator/ Head of the Organization | 9937013180                                 |
| PAN / TAN of the Account holder/ Organization                        | AAAGC3113M                                 |

*Singh 15/12/2025*  
Accounts Officer  
Cooch Behar Govt. Engg. College  
Cooch Behar-736170

*Satterij*  
Signature of Authorised Personnel with seal  
Officer-In-Charge  
Cooch Behar Govt. Engg. College  
P.O. Ghughumari Dist.-Cooch Behar  
Pin- 736170, West Bengal (India)