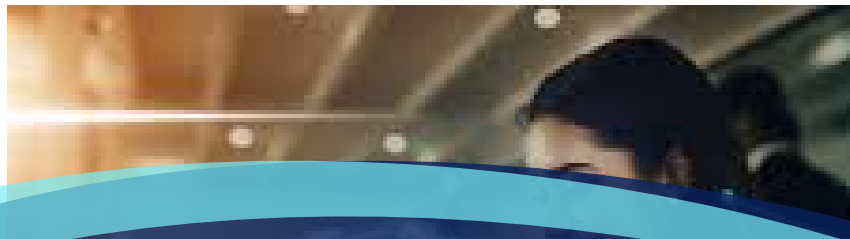
CHALLENGE TO CHANGE
Innovating Today. Transforming Tomorrow

L. D. College of Engineering
presents

CHALLENGE TO CHANGE 2025

Innovating today, Transforming Tomorrow



More Information

c2c.ldce.ac.in

Introduction :

At our institute, we believe that every **student, faculty member, and innovator** should leave behind a meaningful **contribution and footprint** in shaping this organization. Your efforts today are not only valuable to the institute but will also serve as an **inspiration for your juniors and future generations**, showcasing the impact of your ideas, solutions, and commitment.

Each solution you develop is **branch-centric**, aligned with your domain of study and expertise. Through this, the institute provides an **opportunity to bridge the gap between academics and real-world needs**, while ensuring that your contributions are **recognized and remembered** as part of our collective growth. Your work today will become a **legacy tomorrow**—a foundation for others to build upon.

To strengthen this vision, we have launched an **initiative for meaningful change** within the institute. But this cannot succeed without your active participation. Departments have been invited to share their **challenges and needs**, along with possible support mechanisms, ensuring that the problems you address are **authentic, relevant, and impactful**.

Throughout this journey, your **mentors will guide you**, and your **core team will support you** in meeting your goals. What we ask of you is **dedication, creativity, and the application of your knowledge** to design and implement practical solutions. Together, we can **transform challenges into opportunities** and leave a lasting mark on the institute's growth.

The **Challenge to Change Handbook 2025** is your platform for **influence, innovation, and creativity**—far more than just a list of tasks. With the theme *"Empowering Innovation, Sustainability, and Smart Solutions"*, it brings forward **real-world issues** that demand **bold ideas, smart solutions, and a vision for a sustainable future**.

These problem statements are **genuine, relevant, and ready for you to solve**. They reflect pressing issues and exciting opportunities from **academia, industry, and society**. Each challenge is designed to **spark curiosity, ignite creativity, and inspire you** to develop solutions that balance **responsibility with innovation**.

This handbook aims to:

- Push you beyond conventional approaches and spark transformative ideas.
- Guide you to design solutions that are socially relevant, environmentally sustainable, and future-ready.
- Nurture innovators who are ready to make a real difference in communities and industries.

As we step into 2025, this is your moment to **think bold, build smart, and be the change**. Dive in, choose a challenge that excites you, and turn your **ideas into impact**.

Because the future isn't just waiting—**it starts with you. Don't just solve problems, create possibilities. Your spark can light the future. Innovation starts here.**

Bridging Knowledge and Innovation for Real-World Change.

Timeline for Event

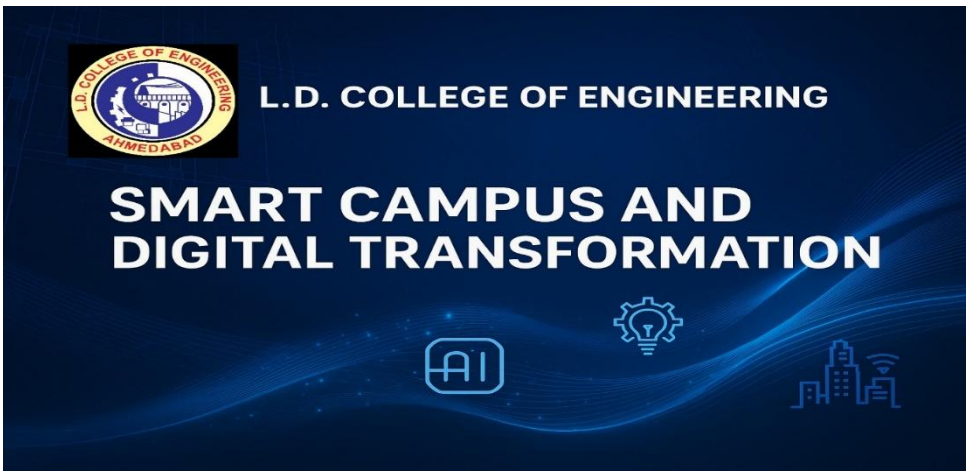
	Event Stages	Activities	Tentative Schedule
ANNOUNCEMENT	Last date of inviting Problems for departments	Each department shall propose problems or challenges	11.09.2025
	Announcement of challenge to change on LDCE website and brief introduction at department level	The entire layout will be available with registration portal on LDCE website. Department coordinators will announce the same at department level.	19.09.2025
REGISTRATION AND ORIENTATION	Registration on portal	Students will review the problems and register on portal.	22.09.2025 to 15.10.205
	Orientation of each track	Mentors will discuss and provide guidelines for solving the challenges.	07.10.2025 : Track 1 &2 -------- 08.10.2025 : Track 3 -------- 09.10.2025 : Track 4 & 5
REVIEW AND SUPPORT	First Review and guidance	Student team will present their solution, stages of implementation and discuss the challenges with expert team.	11.11.2025 to 14.11.2025
	Second Review and announcement of supports	Student team will present detailed layout of solution, innovation in solving challenges and provide tentative budget with requirement of financial and technical support.	25.11.2025 to 28.11.2025
	Third Review	The progress will be reviewed and external experts and industry mentors will guide for further progress.	Jan-2026
	Final Event	Each team will present their solutions with prototype.	Feb-2026

DETAILS OF THE CHALLENGES RECEIVED

Number	Track Details	Total Number of Challenges
Track – 1	Smart Campus and Digital Transformation	13
Track – 2	AI and Automation	05
Track – 3	Sustainable and Green campus solutions	14
Track – 4	Energy, Power and Smart Infrastructure	09
Track – 5	Robotics, Automation, Advanced Manufacturing and research	07

: Major Tracks :

Track 1 : Smart Campus and Digital Transformation

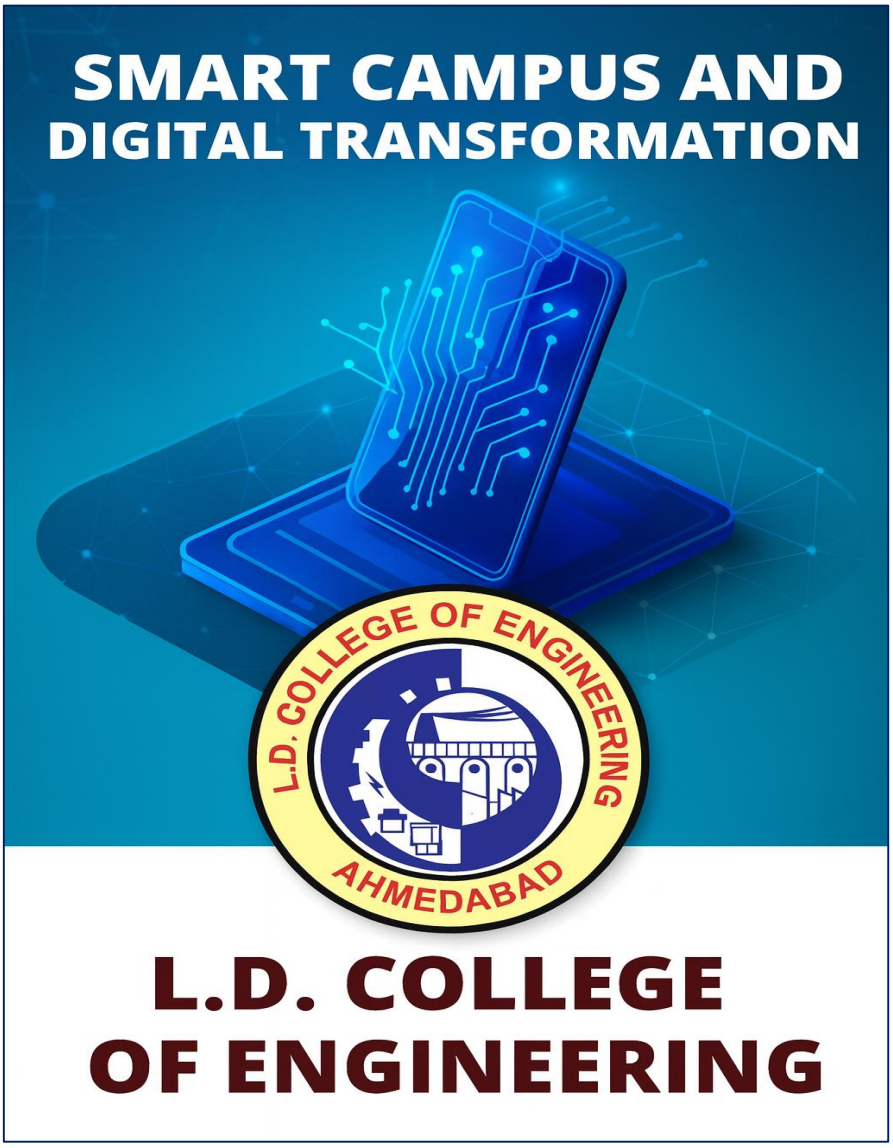


Problem ID	Title of the Problem	Coordinating Department
C2C250101	Centralized Facility Management System and Grievance Redressal	Information Technology
C2C250102	Central Academic Project Management, Publication & Research Collaboration Portal	Information Technology
C2C250103	Enhanced Alumni Connect & Engagement Portal	Information Technology
C2C250104	Automated Data Collection, Newsletter Generation and Event Collateral Creation System	Information Technology
C2C250105	Centralized Digital Procurement & Store Management Portal	Office
C2C250106	Design and Development of a Digital Communication Enhancement Tool for Engineering Students"	Science and Humanities
C2C250107	Software tool to observe and evaluate Teaching-Learning Process of the institute	Science and Humanities
C2C250108	Unified Academic Monitoring & NBA Reporting System	Science and Humanities
C2C250109	Managing Frequent Student Requests through an E-Governance Approach in Student Section Services	Student Section
C2C250110	Difficulty in Accessing and Updating Student Records	Student Section
C2C250111	Minor / Honors degree admission related portal	Computer Engineering
C2C250112	Design and Development of a Web Page/Tab for the Central Library	Library
C2C250113	Design and Development of a RFID system for the library	Library

Campuses that Think, Systems that Evolve.

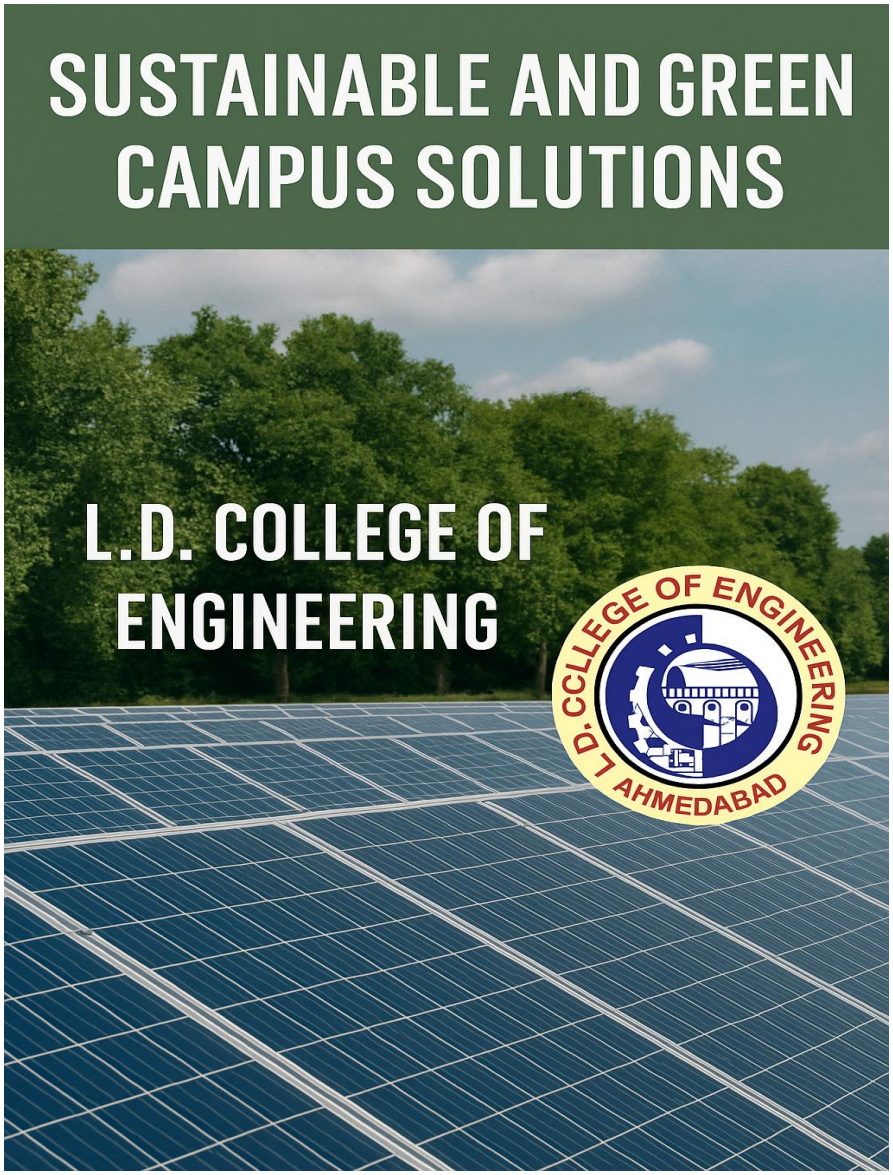
Track 2: AI and Automation

Problem ID	Title of the Problem	Coordinating Department
C2C250201	Fake document detection and Automation and Validation of Student Admission Documents	ACPC
C2C250202	AI-Powered Choice Filling Suggestion System for Students	ACPC
C2C250203	Transforming Early Intervention for Anxiety, Depression, and Psychosis in Young People through Scalable, Culturally Adapted Interventions	Biomedical Engineering
C2C250204	Digital Scholarship Portal with Automated Document Verification and Duplicate Application Detection	Biomedical Engineering
C2C250205	AI-Powered Chatbot for LDCE Website to Enhance User Interaction and Information Accessibility	Computer Engineering



Shaping Smarter Futures, One Idea at a Time.

Track 3: Sustainable and Green campus solutions



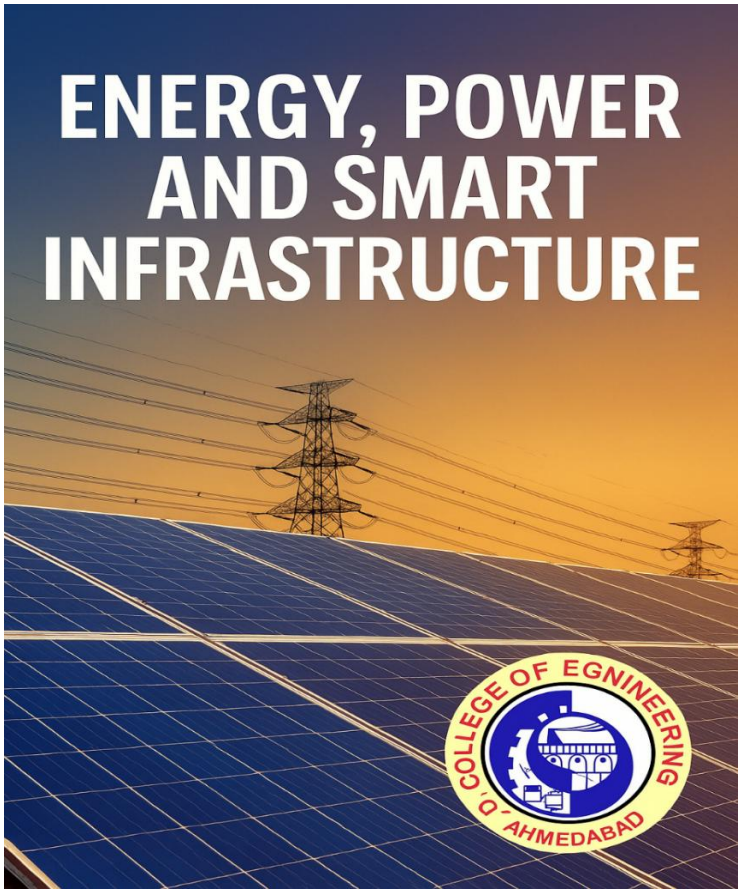
Problem ID	Title of the Problem	Coordinating Department
C2C250301	Waste to Wealth: Conversion of Agricultural Biomass into Compressed Biogas (CBG) for Sustainable Energy	Rubber Technology
C2C250302	Dry leaves collection and management system	Electrical Engineering
C2C250303	Fast and efficient composting of organic waste produce in campus	Environment Engineering
C2C250304	Eco-Friendly Geopolymer Bricks and Blocks from Industrial and Agricultural Waste (IR ash)	Applied Mechanics
C2C250305	To develop an application for real time data acquisition of wireless vibration and strain gauge sensors for Structural Health Monitoring	Applied Mechanics
C2C250306	To develop an optimal active control system for seismic response control of a multi-degree-of-freedom (MDOF) structure.	Applied Mechanics

C2C250307	Enhancing Campus Road Safety through Blind Spot Analysis and Solutions	Automobile Engineering
C2C250308	Production and Analysis of Waste Cooking Oil Biodiesel used in Diesel Engine generated by Canteen and Mess.	Automobile Engineering
C2C250309	Smart Campus Waste Management System	Biomedical Engineering
C2C250310	Conversion of Canteen Food Waste to Methane Gas Generation via Lab-scale Anaerobic Digestion	Chemical Engineering
C2C250311	Integrated Landscape Waste Management	Environment Engineering
C2C250312	To find a solution to handle single use Plastic waste from Canteen	Plastic Technology
C2C250313	Design and Development of Low-Cost, Colourful Rubber Matting, Pavers, and Blocks for Laboratories, Classrooms, and Campus Applications	Rubber Technology
C2C250314	Utilization of Waste Rubber as Rubber Mulch for enhancing Tree support and Soil Health and preventing Soil Erosion in College Campus	Rubber Technology

Because the Future Deserves Clean Energy

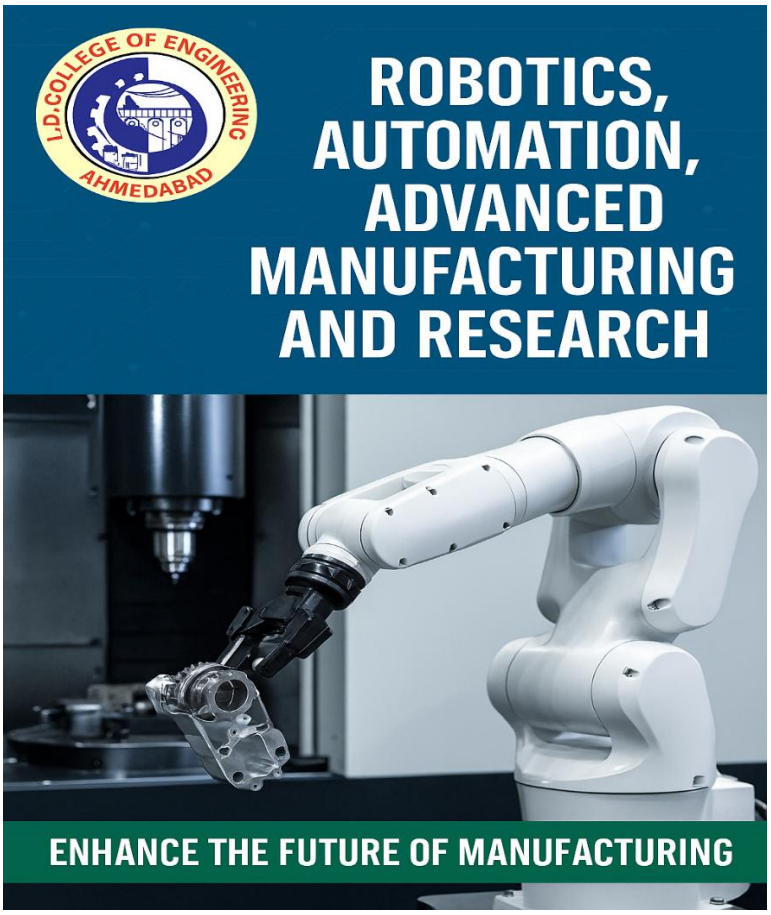
Track 4: Energy, Power and Smart Infrastructure

Problem ID	Title of the Problem	Coordinating Department
C2C250401	Footstep Based Energy Harvesting System	Biomedical Engineering
C2C250402	Development of cost-effective harmonic filters	Electrical Engineering
C2C250403	Development of Smart Energy Monitoring for Campus Buildings	Electrical Engineering
C2C250404	Monitoring of Solar Power Generation in College Campus	Electrical Engineering
C2C250405	Energy Saving in a Building through Smart Lighting Control	Electrical Engineering
C2C250406	Anti-dust Coating for Solar Panels	Rubber Technology
C2C250407	Experimental setup to measure beam vibrations and to get real-time output.	Robotics and Automation
C2C250408	Experimental setup to measure string vibrations and to get real-time output.	Robotics and Automation
C2C250409	Experimental setup to measure plate vibrations and to get real-time output.	Robotics and Automation



Powering Innovation, Energizing Progress

Track 5: Robotics, Automation, Advanced Manufacturing and research



Problem ID	Title of the Problem	Coordinating Department
C2C250501	Development of a Robotic Maintenance Assistant with Adjustable Vertical Suction System for Laboratory Equipment Cleaning	Textile Technology
C2C250502	6 DOF Manipulator Arm	Mechanical Engineering
C2C250503	Revival and Restoration of the MTAB 6-Axis Robot & Assembly Station in the CIM Laboratory.	Mechanical Engineering
C2C250504	Revival and Restoration of AS/RS System and Vision System in MTAB CIM Laboratory.	Mechanical Engineering
C2C250505	Refurbishing the compression moulding machine and fabricate a mold	Plastic Technology
C2C250506	Design and development of a “BookBot - An autonomous robotic system” which can scan all the books of the library for annual physical verification.	Library
C2C250507	Design and development of a “CleanBot – An autonomous floor cleaning robot” for the library and reading room.	Library

Where Machines Think, Factories Evolve, and Research Inspires

Student Activities – Stage-wise Review & Support

The student or team of student who are interested to participate in event has to perform following activities time-by-time.

- **Step-1 :** Review the problems and register as team or individual (one student can register in multiple problem with different teams also.)
- **Step-2 :** Discuss with mentor and finalize brief layout of solving the problem.
- **Step -3 :** First Review : Institute will communicate for First Review (during 11.11.2025 – 14.11.2025 with venue through mail) ; team has to present their layout in power point presentations and supporting documents.
- **Step-4 :** Experts will provide the suggestions and roll-over plan after first review.
- **Step-5 :** Second Review : Institute will communicate for second review. Student will have to submit detail implementation plans, tentative resources (technical / financial) and final strategy. This will be reviewed by external experts also.
- **Step-6** : Third Review : Prototype or stagewise progress will be reviewed. Suggestions will be provided and experts will be assigned for support.
- **Step-7 :** Final Event : Student team needs to showcase their final project pertaining to solution of the problem. The entire progress will be reviewed and based on evaluation matrix final winners will be announced track wise.

This performa is to be used by student teams for presenting their solution and progress at different review stages.

Stage 1: First Review and Guidance

Period: 11.11.2025 – 14.11.2025

Activities:

- Student team will present their problem statement, proposed solution, and stages of implementation. Discuss challenges encountered with the expert review panel.

Outcome: Initial guidance, validation of approach, and mentoring for next steps.

Presentation must include :

- **Problem Statement**
- **Understanding of problem**

- **Data / Technology required – its possible resources (through website/ Software / GeM portal hardware etc.)**
- **Layout in form of flow chart or other manner**
- **Tentative implementation plan with time cycle**
- **Challenges identified and pathway to solve**
- **Cost of implementation (Software/ Hardware / material/ assembly etc.)**
- **Work distribution among team**
- **Prototype planned**
- **Outcome of work**

Stage 2: Second Review and Announcement of Supports

Period: 25.11.2025 – 28.11.2025

Activities:

- Student team will present a detailed solution layout. Showcase innovation in addressing challenges. Submit tentative budget with requirement of financial and technical support.

Outcome: Selection of promising solutions, announcement of institutional/industry support.

Presentation must include :

- **Problem Statement**
- **Understanding of problem**
- **Comments of first review**
- **Progress after first review**
- **Final layout of implementation**
- **Implementation cost :**
  - **Prototype cost : estimated prices, resources of purchase, available on GeM or not, supplier details etc.**
  - **Final implementation and maintenance cost**
- Rough Design, Beta Version of software / module implementation
- **Revised Tentative implementation plan with time cycle**
- **Challenges identified and pathway to solve**
- **Work distribution among team**
- **Prototype planned**

- **Outcome of work**

Stage 3: Third Review

Period: January 2026

Activities:

- Review of progress made by student teams.
- External experts and industry mentors will provide further guidance.

Outcome: Teams are refined towards final solution development and implementation readiness.

Presentation must include :

- **Title of Problem**
- **Submitted timeline for implementation**
- **Support received (Technical / Financial)**
- **Prototype of project or local host implementation of module**
- **Future plan prior to final event**
- **Outcome of work**

Acknowledgement:

- Every student participated with team and presented their outline in Phase – 1 will be issued certificate of participation.
- Every student participated and presented their work upto Phase-2 will be issued certificate of presentation.
- Every student presented successfully in phase-3 will be issued certificate and provided opportunity to work as an internship project.
- The team winners and runner-up will be recognized with prize / acknowledgement and also provided support for project implementing internship in Industrial project.
- The college website will have leader board and acknowledgement for outstanding contribution in accepting and solving challenge.

For any further details contact:

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