SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(An autonomous institution)
Puducherry

# Department of Electronics and Communication Engineering

## Robotics and Automation Club Report AY (2025-2026)

*Submited by*

Dr. T. Deepa
Assistant Professor
Department of ECE

## PREFACE

**The Robotics Club of the Department of Electronics and Communication Engineering was formed to nurture innovation and practical learning in the field of robotics and automation. The club provides a dynamic platform for students to explore emerging technologies such as embedded systems, artificial intelligence, IoT, and autonomous systems. It aims to bridge the gap between theoretical knowledge and real-time application through hands-on projects and technical activities.Through workshops, training sessions, and competitions, students gain exposure to design, programming, and system integration. The club encourages teamwork, leadership, and creative problem-solving skills. Members are motivated to develop innovative solutions for real-world challenges in industry and society.By fostering technical excellence and research-oriented thinking, the Robotics Club prepares students to meet industry demands. With dedicated faculty guidance and active student participation, the club continues to inspire young engineers to transform ideas into intelligent robotic systems.**

**Faculty Coordinator**
**(Dr. T. Deepa)**

**HoD**
**(Dr. P. Raja)**

**IQAC Coordinator**
**(Dr. Arivalagar A.A)**

**Director Cum Principal**
**(Dr. V.S.K. Venkatachalapathy)**

# TABLE OF CONTENTS



# ABOUT THE INSTITUTION

Sri Manakula Vinayaga Educational Trust was founded to provide quality and affordable education to the weaker sections of society. The trust established Sri Manakula Vinayagar Engineering College (SMVEC) in 1999. SMVEC is an autonomous institution affiliated to Pondicherry University. It offers 13 undergraduate, 8 postgraduate and 11 Research programs in engineering. SMVEC has been accredited by NAAC with “A” grade and NBA. The institution is also accredited by TATA consultancy services.

The college has a good placement record with students getting job offers from top companies in India and abroad. SMVEC students have won many awards and accolades for their academic achievements. To be globally recognized for excellence in quality education, innovation and research for the transformation of lives to serve the society.

## Vision

To be globally recognized for excellence in quality education, innovation, and research for the transformation of lives to serve the society

## Mission

M1: Quality Education : To provide comprehensive academic system that amalgamates the cutting edge technologies with best practices.
M2: Research and Innovation : To foster value-based research and innovation in collaboration with industries and institutions globally for creating intellectuals with
new avenues.
M3: Employability and Entrepreneurship : To inculcate the employability and entrepreneurial skills through value and skill based training.
M4: Ethical Values : To instill deep sense of human values by blending societal righteousness with academic professionalism for the growth of society.

## ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering is a top-notch department that offers high-quality UG, PG and PhD programs. The UG program B.Tech - Electronics and Communication Engineering is accredited by the National Accreditation Board, AICTE-New Delhi, and has a placement record of over 80%. The department's graduates are highly sought-after by employers in the Electronics and Communication sector.

Our department contributes significantly to achieving the national objective of envisioning the world with a clear and deep commitment and a sincere desire to meet the expectations of a rising, fast-developing technology.

### Vision

Facilitate academic excellence and research among Electronics and Communication Engineers to meet the global needs with high competence and ethical professionalism.

### Mission

- Academic Excellence: To impart learning skills to meet the global challenges in the field of Electronics and Communication Engineering.
- Research and Innovation: To provide excellence in research and innovation through multidisciplinary specialization.
- Employability and Entrepreneurship: To enhance inter and intra personal skills to make them employable and entrepreneurs.
- Ethics: To inculcate the significance of human values and professional skills to serve the society.
-

### Programmes offered

- B.Tech - Electronics and Communication Engineering
- M.Tech - Electronics and Communication Engineering
- M.Tech - VLSI & Embedded Systems
- Ph.D - Electronics and Communication Engineering

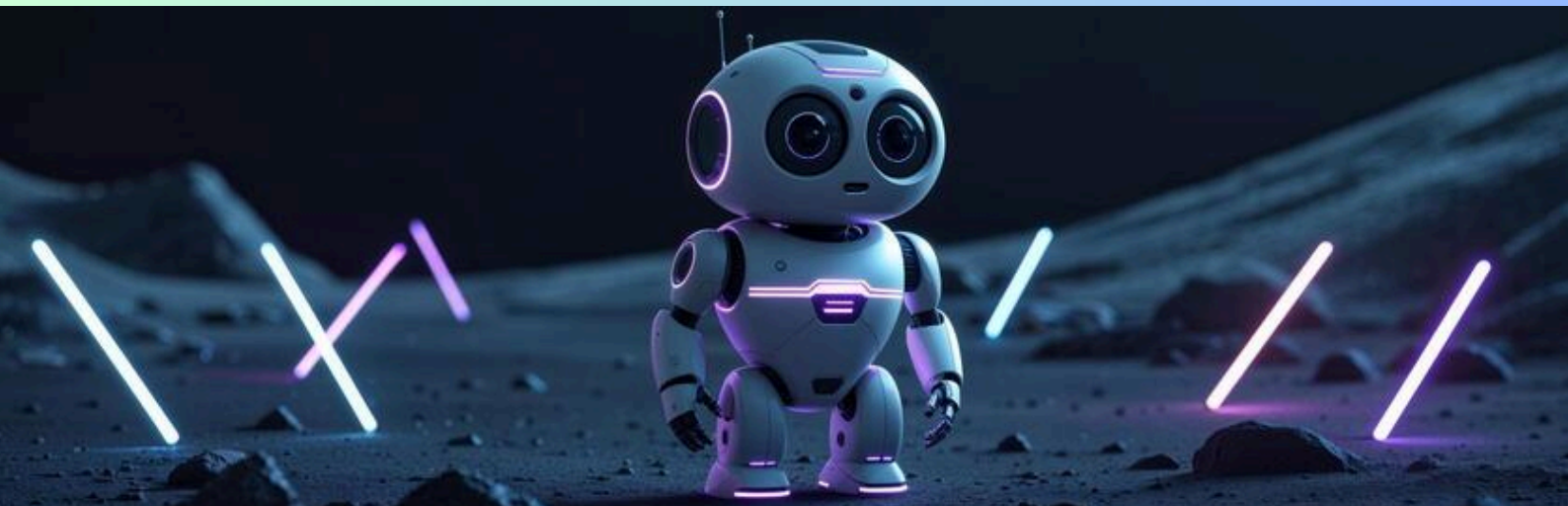
## ABOUT THE CLUB

The Robotics Club is a student-driven technical forum that promotes innovation, creativity, and practical learning in the field of robotics and automation. It provides hands-on experience in designing and developing robotic systems using platforms like Arduino and Raspberry Pi. The club conducts workshops, technical events, and competitions to enhance problem-solving skills, teamwork, and research aptitude among students. It aims to bridge the gap between theoretical knowledge and real-world applications, preparing students to become future-ready engineers.

### Objectives of Robotics and Automation Club

The primary goal of robotics club are as follows:

- To foster hands-on skills in designing, building, and programming robots, enabling students to bridge the gap between theoretical concepts and practical applications.
- To encourage innovative thinking and creative problem-solving by challenging students to develop unique robotic and automation solutions.
- To keep members updated on the latest advancements in robotics and automation technologies through workshops, webinars, and expert talks.



## OFFICE BEARERS

The Robotics Club is led by a dedicated team of office bearers who play a vital role in driving the club's activities and fostering a culture of innovation. The team typically includes a President, Vice President, Secretary, Treasurer, and Technical Leads, each bringing unique skills and responsibilities to the table. These office bearers coordinate workshops, manage resources, mentor junior members, and oversee project development. Their leadership ensures smooth operation of the club while encouraging creativity, collaboration, and hands-on learning in the field of robotics. Through their efforts, the club continues to be a hub of technical excellence and a launchpad for future innovators.

**Dr. T. Deepa**
**Assistant Professor**
**Faculty Coordinator**

**Mohammed Javeed .S**
**President**
**III/C**

**Sreeram.M**
**Vice President**
**II/A**

**Balaganesan.V**
**Secretary**
**III/A**

**Joint Secretary**
**Joint Secretary**
**II/C**

**Pratheep P**
**Technical Head**
**II/C**

# LIST OF EVENTS

| S.No | Title of the Event |
|---|---|
| 01 | Club Reformtaion |
| 02 | Skill-Building Workshop on Race Bots |
| 03 | Robot Race |

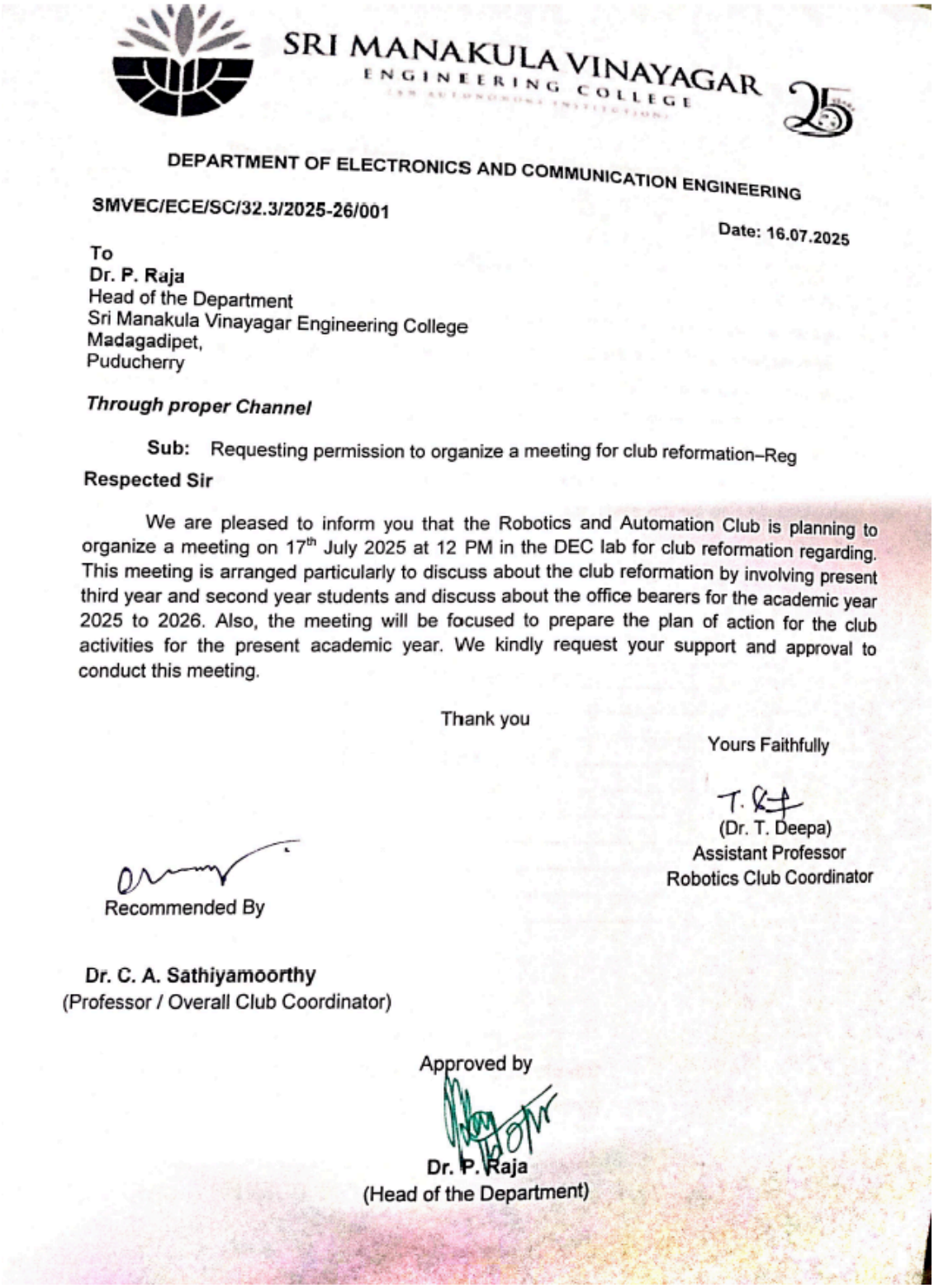
## CLUB Reformation

The Robotics Club Reformation Meeting for the academic year 2025–2026 was successfully conducted at the ECE Seminar Hall. The meeting was organized with the objective of restructuring the club and electing new office bearers to lead the activities for the current academic year. Students from II Year and III Year actively participated in the meeting and enthusiastically engaged in the selection process. The session began with a brief introduction about the objectives and vision of the Robotics Club, emphasizing innovation, teamwork, and technical excellence in the field of robotics and automation.

Through a democratic selection process, Mr. Mohammed Javeed from III Year C Section was elected as the President of the Robotics Club for the academic year 2025–2026. Other office bearers were also selected during the meeting to take up various leadership roles and responsibilities in guiding the club's technical events, workshops, and project activities. The reformation meeting concluded with a note of encouragement to the newly elected team to lead the club effectively and to organize innovative programs that enhance students' technical knowledge and practical skills. The event marked a positive beginning for the Robotics Club's activities for the academic year 2025–2026.

| | |
|---|---|
| **Total No. of Participants** | **50** |
| **Year of Students** | **II & III** |
| **Date** | **17.07.2025** |
| **Venue** | **ECE Seminar Hall** |
| **Event Coordinator** | **Dr. T. Deepa** |

# CIRCULAR



SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SMVEC/ECE/SC/32.3/2025-26/001

Date: 16.07.2025

To
Dr. P. Raja
Head of the Department
Sri Manakula Vinayagar Engineering College
Madagadipet,
Puducherry

*Through proper Channel*

**Sub:** Requesting permission to organize a meeting for club reformation–Reg

**Respected Sir**

We are pleased to inform you that the Robotics and Automation Club is planning to organize a meeting on 17th July 2025 at 12 PM in the DEC lab for club reformation regarding. This meeting is arranged particularly to discuss about the club reformation by involving present third year and second year students and discuss about the office bearers for the academic year 2025 to 2026. Also, the meeting will be focused to prepare the plan of action for the club activities for the present academic year. We kindly request your support and approval to conduct this meeting.

Thank you

Yours Faithfully

(Dr. T. Deepa)
Assistant Professor
Robotics Club Coordinator

Recommended By

Dr. C. A. Sathiyamoorthy
(Professor / Overall Club Coordinator)

Approved by

Dr. P. Raja
(Head of the Department)


IEEE
SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING
Organized
Robotics and Automation Club and
IETE student Forum
Jointly Organized
"Skill-Building
Workshop on
Race Bots"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# SKILL BUILDING WORKSHOP ON RACEBOTS

**The Robotics Club organized a two-day Skill Building Workshop on "RaceBots" from 07.08.2025 to 08.08.2025 at the DEC Laboratory, ECE Department. The workshop was conducted with the aim of providing hands-on experience in designing and developing racing robots. Five student mentors from III Year guided and trained the participants throughout the session. A total of 40 students, including volunteers, actively participated in the workshop.**

**During the workshop, the mentors explained the fundamentals of robot design, motor driver interfacing, chassis assembly, and control mechanisms. The II Year students worked in teams to design and assemble their own race bots under proper guidance. By the end of the workshop, the participants successfully developed functional RaceBots independently and tested them on a basic racing track setup. The activity fostered teamwork, creativity, and practical technical exposure among the students.**

## Event Objectives

- **To provide hands-on training in robotics and embedded system applications.**
- **To enhance students' understanding of motor control, circuit connections, and bot assembly.**
- **To encourage peer learning through mentorship by senior students.**
- **To develop problem-solving skills and teamwork among participants.**
- **To promote innovation and interest in competitive robotics events.**

## Event Outcomes

- **Students successfully designed and developed their own RaceBots.**
- **Participants gained practical knowledge in hardware assembly and basic programming concepts.**
- **Improved confidence in handling electronic components and robotics tools.**
- **Strengthened collaboration between II Year and III Year students.**
- **Increased enthusiasm among students to participate in future robotics competitions and technical activities**

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**Department of Electronics and Communication Engineering**

**PROPOSAL TO ORGANIZE ROBOTRON FEST -2025**

**SMVEC / ECE / 32.3 / 2025-26 / 01** **Date: 30. 07. 2025**

**1. DETAILS OF THE EVENT**

| | | |
|---|---|---|
| Title of the event | : | ROBOTRON Workshop -2025 |
| Level of Event | : | National [ ] International [ ] Mode of Event: Offline |
| Organizing department | : | Electronics and Communication Engineering |
| Sponsored by | : | Sri Manakula Vinayagar Engineering College |
| Date of the event | : | 07.08.2025 to 09.08.2025 |
| No. of days / Duration | : | 03-Days |
| Time | : | 9.00 AM to 4.40 PM |
| Venue | : | Seminar Hall |
| Overview of the event | : | The Robotron workshop is a hands-on, three-day robotics event designed to immerse participants in the fundamentals and advanced concepts of autonomous robotics. This workshop will guide students through the process of designing, building, and programming robots capable of navigating predefined tracks and performing object manipulation tasks. |
| Objectives of the event | : | • To provide hands-on experience in designing and building line follower and Robo Soccer robots.<br>• To develop skills in sensor integration, motor control, and algorithmic logic.<br>• To prepare students for robotics competitions and real-world automation challenges. |
| Expected outcome (s) of the event | : | • Design and build a functional race bot.<br>• Implement basic algorithms for navigation, obstacle detection, and line tracking.<br>• Develop a robot capable of performing in a robo race match scenario. |
| Target group | : | Intra Department UG Students |
| Registration fee | : | • Robo Race: 500 Rs per bot (only for participants)<br>• Workshop: 5000 Rs per team (5 Members per team) |
| Registration link in website | : | https://forms.gle/XQDqsbosMk3TeCK88 |
| Contact information of the coordinators | : | Dr. N. Saranya & Dr. T. Deepa<br>Department of ECE<br>Mobile no: +91-9952791143 & 9345376257 |

**2. BUDGET DETAILS**

| S. No | Item Description | | Amount per team (in Rs.) | Total Amount in Rs. | Remarks (If any) |
|---|---|---|---|---|---|
| 1. | Cash Prize | First Prize | 5000 | 10000 | |
| | | Second Prize | 3000 | | |
| | | Second Prize | 2000 | | |
| 2 | Hospitality to participants (Refreshment / lunch & high Tea) | Tea and snacks (50 participants +15 volunteers) | 975/day (for three days) | 2925 | |
| 3 | Printing, proceeding certificates / banner, etc. | Participant and Appreciation certificates | 1500 | 1500 | |
| 4. | Components purchased | Rhino Motor (40 pieces) | 437 | 17464 | |
| | | Brass coupling (40 pieces) | 55 | 2218 | |
| | | Rubber Wheel(40 pieces) | 299 | 11960 | |
| | | Motor Bracket | 175 | 1148 | |
| 4. | Total Registration Amount | Workshop 10 teams (5 members per team) | 5000 | 50000 | |
| **Total Expense** | | | 47,215 | 47,215 | |
| 5. | Total Registration Amount | Workshop 10 teams (5 members per team) | 5000 | 50000 | |
| | | | Revenue to the Club | 2785 | |

**Submitted by the Event Coordinator**
The details are submitted for your kind approval to organize this event more effectively

**Signature of Student Coordinator** **Signature of the Event Coordinat**

**Remarks by the HOD:**

**Recommended / Not Recommended** **HOD**

SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE

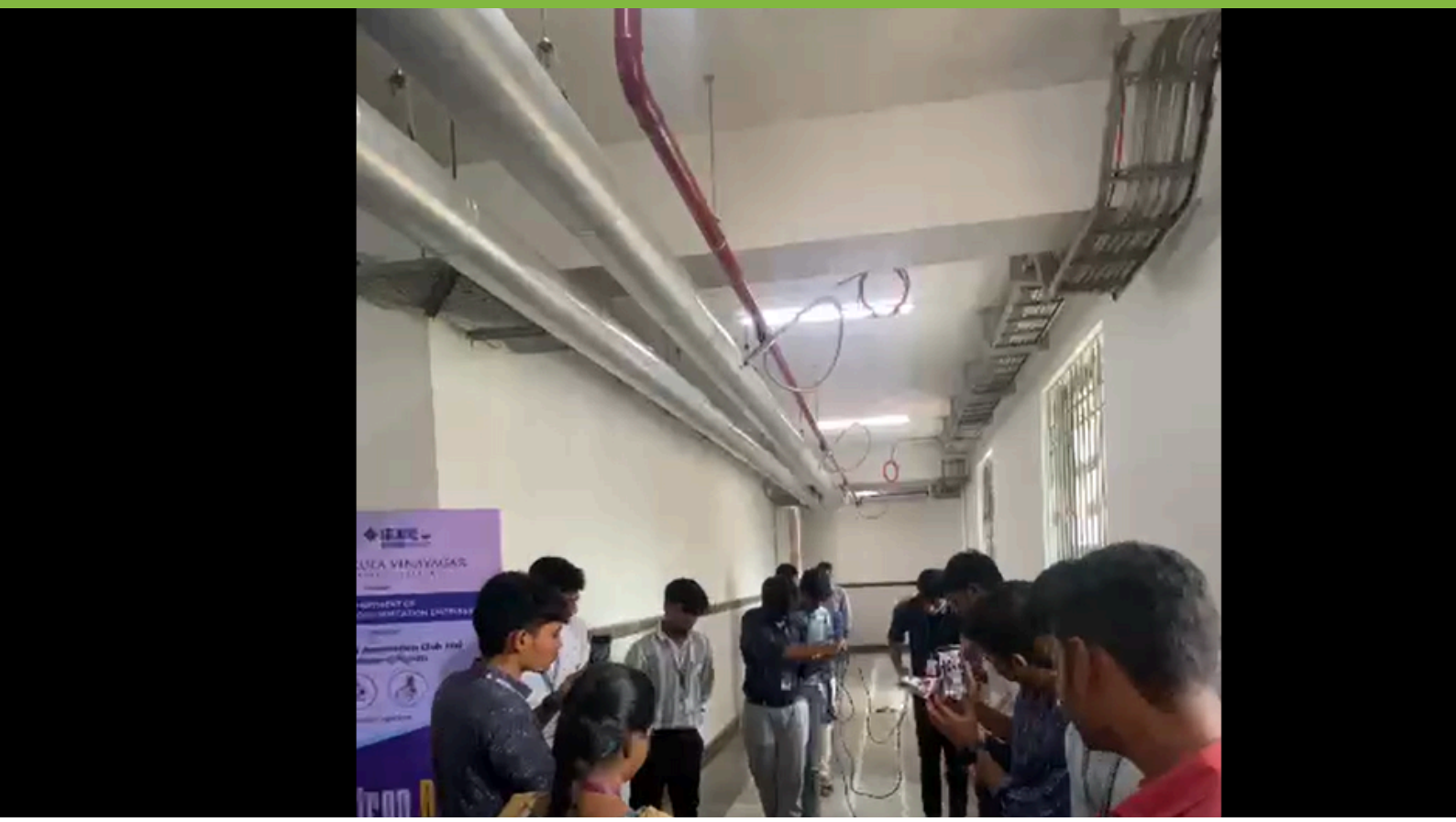
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**Skill-Building Workshop on Race Bots**

**Attendance Sheet**

**Date: 07.08.2025**

| S.No | Name | Register Number | Year/Sem/Sec | AN | FN |
|---|---|---|---|---|---|
| 1 | SRIRAM | 24UEC181 | II/III/A | | |
| 2 | MAHALAKSHMI.L | 24UEC100 | II/III/A | | |
| 3 | NIVEDHA.E | 24UEC123 | II/III/A | | |
| 4 | DRAVIDAMALAR M | 24UEC044 | II/III/A | | |
| 5 | SUCHITHIRA MB | 24UEC184 | II/III/A | | |
| 6 | HARIPRADEEP G | 24UEC059 | II/III/A | | |
| 7 | LINGABARANEESWARAN V | 24UEC096 | II/III/A | | |
| 8 | SREERAM M | 24UEC177 | II/III/A | | |
| 9 | ARIDHARAN A | 24UEC018 | II/III/A | | |
| 10 | ABHINAV R | 24UEC004 | II/III/A | | |
| 11 | VIGNESH.S | 24UEC207 | II/III/A | | |
| 12 | DHARANIKUMAR D | 24UEC039 | II/III/A | | |
| 13 | HARI PRADEEP G | 24UEC059 | II/III/A | | |
| 14 | K. VIGNESHWARAN | 24UEC208 | II/III/A | | |
| 15 | THUVARAKA PRASATH M S | 24UEC197 | II/III/A | | |
| 16 | ARUTPAAVENTHAN A B | 24UE023 | II/III/A | | |
| 17 | SURYA ROVEN . S | 24UEC189 | II/III/A | | |
| 18 | SWATHI .A | 24UEC191 | II/III/A | | |
| 19 | JEEVEDHA .S | 24UEC079 | II/III/B | | |
| 20 | ROJITHA P | 24UEC154 | II/III/B | | |
| 21 | PRIYADHARSHINI. M | 24UEC136 | II/III/B | | |



## 02. ROBOTRON RACE

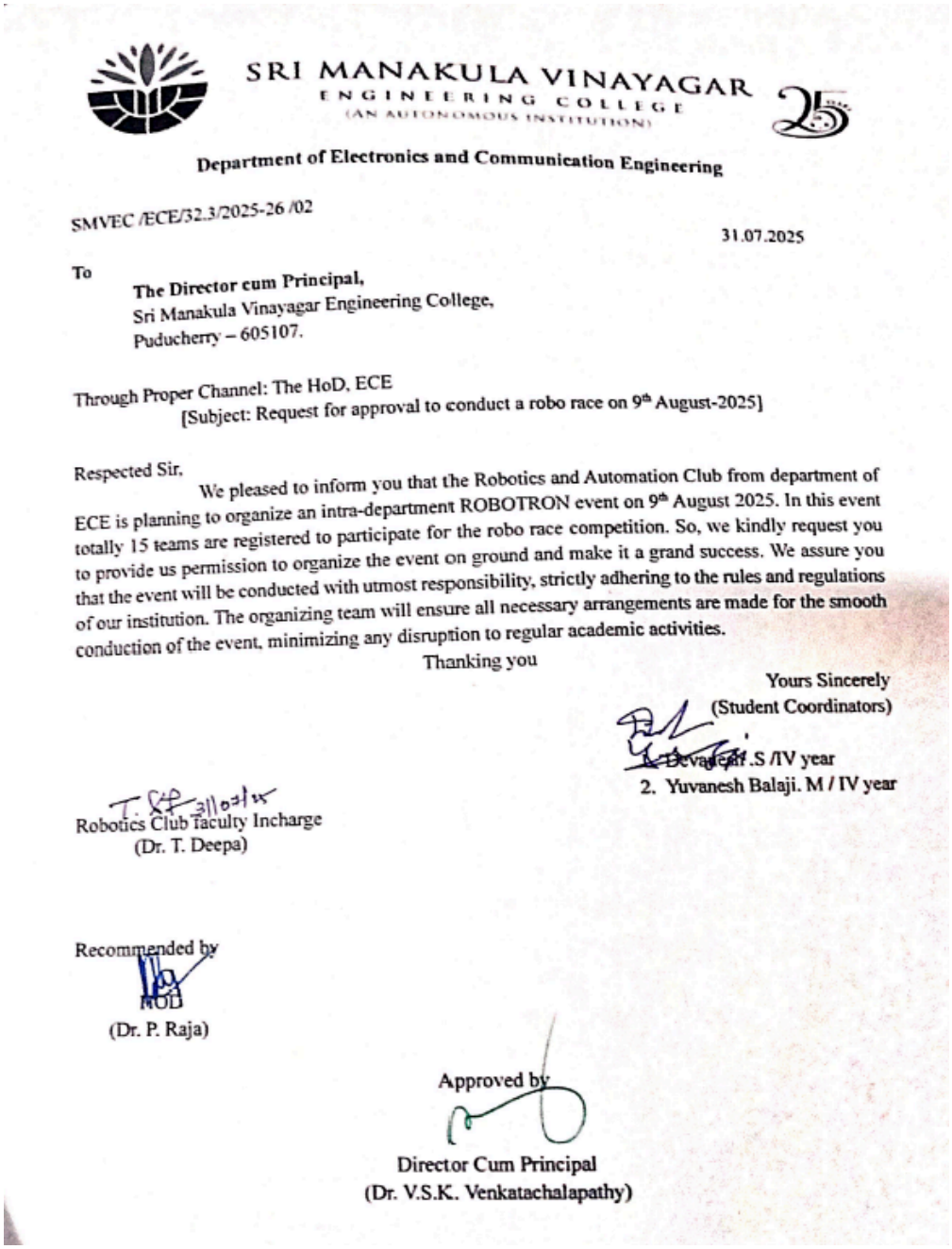
RThe Robotron Race event was successfully conducted on 09.08.2025 under the banner of the Robotics Club. The event aimed to provide students with a hands-on competitive platform to test their robotic design, programming, and problem-solving skills. Participants designed and operated manually controlled or autonomous race bots to navigate a specially designed track consisting of sharp turns, obstacles, and time-based challenges.The event witnessed enthusiastic participation from students across various years. Teams showcased innovative chassis designs, optimized motor control techniques, and efficient power management systems. The competition emphasized precision, speed, stability, and technical creativity. Faculty coordinators and student mentors supervised the event to ensure fair play and technical evaluation. The Robotron Race created an energetic and competitive learning atmosphere, encouraging teamwork, technical application, and real-time troubleshooting skills among students.

## OBJECTIVES

- To provide practical exposure to robotics and embedded system applications.
- To enhance students' understanding of motor drivers, microcontrollers, sensors, and circuit integration.
- To develop problem-solving and debugging skills under competitive conditions.
- To encourage teamwork, leadership, and technical collaboration among participants.
- To bridge the gap between theoretical concepts and real-time implementation.

# OUTCOME

- Students gained hands-on experience in designing and assembling race bots.
- Improved knowledge in motor control, sensor interfacing, and power management.
- Enhanced programming skills for robotic navigation and control.
- Strengthened teamwork, coordination, and time management abilities.
- Increased interest and motivation towards robotics, automation, and innovation-based competitions.



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**Department of Electronics and Communication Engineering**

SMVEC /ECE/32.3/2025-26 /02

31.07.2025

To
**The Director cum Principal,**
Sri Manakula Vinayagar Engineering College,
Puducherry – 605107.

Through Proper Channel: The HoD, ECE
[Subject: Request for approval to conduct a robo race on 9th August-2025]

Respected Sir,

We pleased to inform you that the Robotics and Automation Club from department of ECE is planning to organize an intra-department ROBOTRON event on 9th August 2025. In this event totally 15 teams are registered to participate for the robo race competition. So, we kindly request you to provide us permission to organize the event on ground and make it a grand success. We assure you that the event will be conducted with utmost responsibility, strictly adhering to the rules and regulations of our institution. The organizing team will ensure all necessary arrangements are made for the smooth conduction of the event, minimizing any disruption to regular academic activities.

Thanking you

Yours Sincerely
(Student Coordinators)

1. Devadarshini .S /IV year
2. Yuvanesh Balaji. M / IV year

Robotics Club faculty Incharge
(Dr. T. Deepa)

Recommended by
HOD
(Dr. P. Raja)

Approved by
Director Cum Principal
(Dr. V.S.K. Venkatachalapathy)

## BUILDING ROVER USING MICROCONTROLLER

he activity “Building Rover using Microcontroller” was conducted for First Year students with a total participation of 50 students. The session was organized with the objective of introducing beginners to the fundamentals of robo tics, embedded systems, and microcontroller-based applications.During the activity, students were guided through the process of assembling a rover chassis, interfacing DC motors with motor driver modules, and programming a microcontroller (such as Arduino Uno) for motion control. The session included practical demonstrations on circuit connections, power supply management, and basic coding for forward, reverse, left, and right movements. Faculty coordinators and student mentors provided hands-on support throughout the session, ensuring that each team successfully built and tested their rover. The activity created an interactive learning environment that encouraged curiosity and active participation among first-year students.

## OBJECTIVE

- To introduce first-year students to basic robotics concepts and microcontroller programming.
- To provide practical exposure to hardware interfacing and motor control techniques.

## OUTCOME

- Students successfully built and tested a functional rover prototype.
- Participants enhanced their practical skills in programming, circuit assembly, and teamwork.

# STUDENT ACHIVEMENTS