DEPARTMENT OF ROBOTICS AND AUTOMATION

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N E W S L E T T E R

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
(AUTONOMOUS)
Affiliation to Anna University, Chennai | NAAC Accredited

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Editor Message

Greetings from the Department of Robotics and Automation!

It gives me immense pleasure to present this edition of our departmental newsletter, a reflection of the innovation, creativity, and relentless pursuit of excellence that define our students and faculty. As the world rapidly advances towards intelligent automation and smarter technologies, our department continues to stay at the forefront, nurturing future-ready engineers and fostering a culture of research, hands-on learning, and interdisciplinary collaboration.

This newsletter captures the highlights of our journey, from workshops and symposiums to industrial visits and student achievements. Each initiative is a testament to our commitment to bridging academic knowledge with real-world applications in the field of robotics and automation.

We extend our gratitude to all contributors, participants, and supporters who make these endeavours successful. Let this edition inspire us to continue pushing boundaries and building a future powered by innovation.

Warm regards,

Dr.E.ARUNKUMAR,

Assistant Professor,

Chief Editor, Department Newsletter,

Department of Robotics and Automation,

Dhirajlal Gandhi College of Technology,Salem.

About College:

Dhirajlal Gandhi College of Technology (DGCT) was established in the year 2011 with a mission of creating conducive learning environment, where the students can explore new frontiers and expand their horizons enriched with professional ethics, values and can enhance their knowledge to participate in the challenges of advanced engineering fields and can make them as a good professional.

The Institution has one of the best infrastructure facilities for an engineering college which facilitates the wholesome growth of students. DGCT boasts of 10.18 acres of lush green campus on Salem-Bangalore highway, near the Salem Airport providing the right ambience for students to pursue high level of technical education. The calm, serene and tranquil environment invigorates the mind and provide peaceful learning environment.

About Department:

Bachelor of Engineering (B.E.) in Robotics and Automation is a specialized undergraduate degree program started in the year 2023. This focuses on the design, development, and implementation of robotics systems and automated technologies. This field combines principles from various disciplines such as mechanical engineering, electrical engineering, Artificial intelligence, computer science and control systems to create intelligent and autonomous systems capable of performing tasks in diverse environments. Students in this program learn about robotics hardware and software, control systems, sensors and actuators, artificial intelligence, machine learning, and industrial automation. Graduates of this program can pursue careers in industries such as manufacturing, automotive, aerospace, healthcare, and more, designing and deploying robotic and automated solutions to solve complex problems. R&A department provides foreign language training and placement training from day one to enhance the skill sets of students.

Vision:

To develop technically proficient engineer in the field of Robotics and Automation engineering who can accept global need based challenges in changing technology and applications.

Mission:

- To impart good oriented, quality based and value added education in Robotics and Automation.
- To take continuous efforts to meet the technical challenges in the collaboration with industry.
- To establish centre of excellence in the area of Robotics and Automation where ideas, innovation and research will synergize.
- To create a environment for students to design and develop robots and automation processes for various applications like medical, agriculture, manufacturing, etc..,
- To motivate the students to enhance their knowledge in interdisciplinary research to cater to the local and global needs.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

1 The program aims to develop a proficient engineer in Robotics and Automation field to serve the various technological needs of Industry and Society.

2 To develop the engineers to practice the multidisciplinary engineering knowledge in particularly in mechanical, electrical, electronic, control, manufacturing and software for Robotics and Automation systems development.

3 The program shall create engineers continuously to uplift the knowledge, skill, attitude, self-learning, teamwork, value of ethics and able to protect environmental eco-systems.

PROGRAM SPECIFIC OUTCOMES (PSOs)

(1) Multi-disciplinary Engineering in Robotics: Analyse the real world needs and design the robot and Automation solutions using the competency in multi domain engineering elements and integrated software tools

(2) Enhancement and up gradation: Analyse conventional functions and process of various engineering elements and propose robots and automation solution for enhanced performance of conventional systems.

(3) Robotic system integration and automated Solution and connectivity: Recommend the sensing, interfacing, controlling, actuating, communicating technologies and analysing the data through various subsystems and build the robots.

NEWS LETTER

1.Our R&A department organized a value-added program titled **"Internet of Things using Arduino"** in association of Dept. of ECE on two occasions: **November 22, 2023, and November 23, 2023**, at **"Microprocessor laboratory-DGCT"** . The sessions were led by **Mr. M. Balasuramani, AP/ECE,** and **Ms. V. Aparna, AP/ECE.** All the 18 students participated and gained practical exposure in IoT using Arduino.
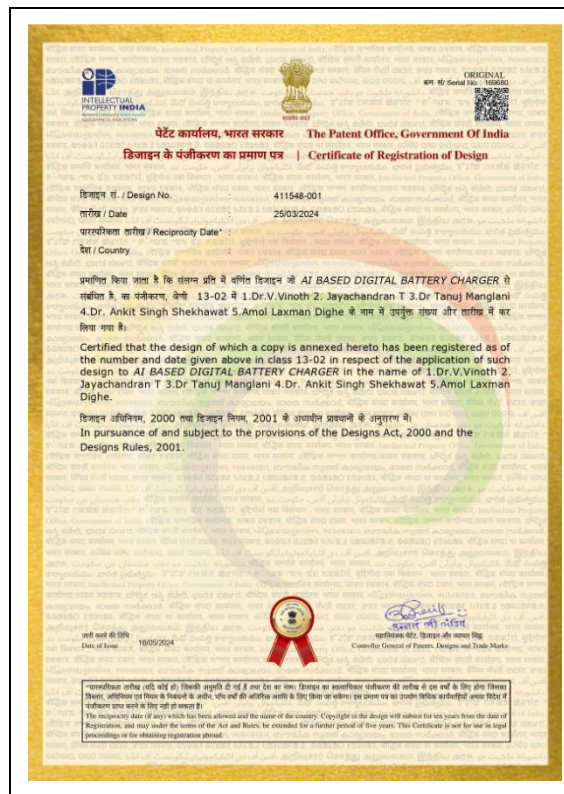

2. Our R&A department has initiated a **Memorandum of Understanding (MOU)** through **Nanan mudhalvan Scheme** with **Tamil Nadu Smart and Advanced Manufacturing (TANSAM)** in **Chennai** on **Feb 02, 2024.** The above event was inititated by **Mr.T.Jayachandran, HoD/ R&A**. Under this MOU, our students will have opportunity to participate in internships and training programs to enhance their technical skills.

3. Our R&A department organized an industrial visit for faculty members at **Tamil Nadu Smart and Advanced Manufacturing (TANSAM)** in Chennai on **February 2, 2024**. This program was arranged by **Mr. T. Jayachandran, Head of R&A.** The visit was very useful for faculty members to understand the company's processes.

4. Our R&A department HoD, **Mr. T. Jayachandran,** has received design patent rights for the **"AI-based Digital Battery Charger"** (**Design No: 411548-011**) dated **March 25, 2024,** from the Patent Office, Government of India.

5. Our R&A department hosted the National-level Technical Symposium **"NEXUS-2K24"** in association with Dept.of ECE on **May 5, 2024**. The event included a variety of activities such as **Technical events** (Paper Presentation, Project Expo, Tech Connect, and Line Follower), **Non-Technical events** (Games Tech), and a **workshop** on "**Embedded Systems of IoT**". The faculty coordinators were **Mr. J. Prem, AP/R&A,** and **Ms. G. Jaya, AP/ Maths -R&A**, while the student coordinators were Mr. **R. Hariharan, I-Year/R&A**, and **Mr. S. Parthasarathi,I-Year/R&A.** Approximately 50 students from other colleges actively participated, and shared their knowledge with peers.

6. Our R&A department organized a value-added program titled **"Auto CAD"**.in the **"CAD Laboratory-DGCT"**. The sessions were led by **N.Pannerselvam, SAP / Mech.** All 16 students participated and gained practical exposure in Auto CAD software.

7. Our R&A department conducted an event titled "**Eco-Champ Activities – Exploring Traditional Millet Recipes"** in associated with **Environment club** on **June 15, 2024**. The event was conducted by **Mrs. G.Jaya, AP / Maths – R&A.**

During the event, participants discovered the nutritional benefits of millet, which is rich in protein, fiber, essential vitamins, and minerals. Its high dietary fiber content, both soluble and insoluble, supports digestive health by nurturing beneficial gut bacteria and promoting regularity, thereby reducing the risk of colon cancer. Recognized as super foods due to their abundant macro and micronutrients, we have introduced a millet-based lunch twice weekly for our students, who report feeling notably healthier and more energetic after adopting these traditional recipes.

8. Our R&A department organized the "**Project Expo – 2024"** on **June 24, 2024,** at the Department of Robotics and Automation, DGCT. First-year students from the Robotics and Automation department participated and demonstrated **"4"** different robotics-based projects. All the projects were guided by **Mr. T. Jayachandra, HoD/R&A**, Mr. **J. Prem, AP/R&A,** and **Mr. E. Arunkumar, AP/R&A.** The event was highly beneficial in enhancing the technical skills of the students.

9.Our R&A department organized the **"Bridge Course - Project Expo 2K24"** on **July 1 and July 2, 2024**, for incoming first-year students. The program was led by **Mr. T. Jayachandra, HoD/R&A,** and organized by **Mr. E. Arunkumar, AP/R&A.** Current first-year students explained and demonstrated their projects to the new students. This program is designed to help students transition from high school to college by developing their academic skills, technical skills, and practical knowledge in science and technology.

10. Our R&A department students won the overall championship in the **National Level Symposium – 2024** at **GCE – Dharamapuri on 20.03.2024.**

Apart from that, our students are participated in various on-campus and off-campus events with great enthusiasm. Events provide opportunities for hands-on activities and skill development in areas such as technical expertise, communication, leadership, and teamwork. They also facilitate interactions with peers and academicians, helping students build valuable connections for their future careers.The list of publications is enclosed.

11. **Mr.T.Jayachandran,** Head of our R&A department, has enrolled in a **Ph.D (Part-time)** program at **Ann University, Chennai**. Also, faculty member **Mr.J.Perm, AP / R&A**, has enrolled in a **Ph.D (Full-Time)** program at **VIT University, Vellore**.